Renal: Draft Report

DRAFT REPORT FOR VOTE

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DRAFT REPORT

Executive Summary

Renal disease is a leading cause of morbidity and mortality in the United States. More than twenty million adults (10% of the population) in the United States have chronic kidney disease (CKD). Untreated CKD can result in End Stage Renal Disease (ESRD) and a host of other health complications. Currently, over half a million people in the United States have received a diagnosis of ESRD, the only chronic disease covered by Medicare for people under the age of 65. Considering the high mortality rates and high healthcare utilization and costs associated with ESRD, the need to focus on quality measures for patients with renal disease is particularly important.

On May 6-7, 2015, NQF convened a new multi-stakeholder Standing Committee composed of twenty-three (23) individuals to evaluate fourteen (14) NQF-endorsed maintenance measures and eleven (11) new measures and make recommendations for endorsement. Thirteen measures were recommended for endorsement, three measures were recommended for endorsement with reserve status, the Committee did not recommend seven measures and did not reach consensus on two measures. During post-comment conference calls held on July 30 and August 3, 2015, the Standing Committee reviewed comments, measure updates and several measure reconsideration requests. The final recommendations are as follows: Fifteen measures were recommended for endorsement, four measures were recommended for endorsement with reserve status, and the Committee did not recommend six measures. The ~~13~~15 measures that were recommended by the Standing Committee are:

- 0251: Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement (Kidney Quality Care Alliance – KCQA))
- 0256: Hemodialysis Vascular Access- Minimizing use of catheters as Chronic Dialysis Access (University of Michigan/Centers for Medicare and Medicaid Services – UM/CMS)
- 0257: Hemodialysis Vascular Access—Maximizing Placement of Arterial Venous Fistula (AVF) (UM/CMS)
- 0318: Peritoneal Dialysis Adequacy Clinical Performance Measure III - Delivered Dose of Peritoneal Dialysis Above Minimum (UM/CMS)
- 0321: Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute (Renal Physicians Association – RPA)
- 1423: Minimum spKt/V for Pediatric Hemodialysis Patients (UM/CMS)
- 1424: Monthly Hemoglobin Measurement for Pediatric Patients (UM/CMS)
- 1425: Measurement of nPCR for Pediatric Hemodialysis Patients (UM/CMS)
- 1460: Bloodstream Infection in Hemodialysis Outpatients (Centers for Disease Control and Prevention – CDC)
- 1662: Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy (RPA)

- 1667: Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL (RPA)
- 2594: Optimal End Stage Renal Disease Starts (Kaiser)
- 2701: Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour) (KCQA)
- 2704: Minimum Delivered Peritoneal Dialysis Dose (UM/CMS)
- 2706: Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V (UM/CMS)

The Committee recommended endorsement with reserve status for the following measures:

- 0249: Hemodialysis Adequacy Clinical Performance Measure III: Hemodialysis Adequacy--HD Adequacy—Minimum Delivered Hemodialysis Dose (UM/CMS)
- 0255: Measurement of Serum Phosphorus Concentration (UM/CMS)
- 0323: Adult Kidney Disease: Hemodialysis Adequacy: Solute (RPA)
- 1454: Proportion of patients with hypercalcemia (UM/CMS)

~~The Committee did not reach consensus on the following measures:~~

- ~~1423: Minimum spKt/V for Pediatric Hemodialysis Patients (UM/CMS)~~
- ~~2702: Post-Dialysis Weight Above or Below Target Weight (KCQA)~~

The Committee did not recommend the following measures:

- ~~1454: Proportion of patients with hypercalcemia (UM/CMS)~~
- ~~1460: Bloodstream Infection in Hemodialysis Outpatients (Centers for Disease Control and Prevention – CDC)~~
- 1660: ESRD Patients Receiving Dialysis: Hemoglobin Level <10 g/dL (RPA)
- 2699: Anemia of Chronic Kidney Disease: Dialysis Facility Standardized Transfusion Ratio (UM/CMS)
- 2700: Ultrafiltration rate greater than 13 ml/kg/hr (UM/CMS)
- 2702: Post-Dialysis Weight Above or Below Target Weight (KCQA)
- 2703: Minimum Delivered Hemodialysis Dose (UM/CMS)
- 2705: Delivered Dose of Dialysis Above Minim (UM/CMS)

Brief summaries of the measures currently under review are included in the body of the report; detailed summaries of the Committee's discussion and ratings of the criteria for each measure are in Appendix A.

Introduction

Renal disease is a leading cause of morbidity and mortality in the United States. More than twenty million adults (ten percent of the population) in the United States have chronic kidney disease (CKD). It is associated with premature mortality, decreased quality of life, and increased healthcare costs. Risk factors for CKD include cardiovascular disease, diabetes, hypertension, and obesity[1]. Untreated CKD can result in end stage renal disease (ESRD). Currently, over half a million people in the United States have received a diagnosis of ESRD.

In 1972, President Richard Nixon signed section 2991 of Public Law 92–603, which established ESRD as the only healthcare condition to be covered under Medicare for people under the age of 65.[2] People are eligible for Medicare regardless of their age if their kidneys are no longer functioning, need regular dialysis or have had a kidney transplant. Considering the high mortality rates and high healthcare utilization and costs associated with ESRD, the need to focus on quality measures for patients with renal disease is particularly important. CKD and ESRD continue to cost the United States significant amounts for care and treatment. In 2010, total Medicare spending rose 6.5 percent, to $522.8 billion and expenditures for ESRD rose eight percent, to $32.9 billion[3].

This Project seeks to identify and endorse performance measures for accountability and quality improvement that specifically address conditions, treatments, interventions, or procedures relating to kidney disease. On May 6-7, 2015, NQF convened a new multi-stakeholder Standing Committee composed of twenty-three (23) individuals to evaluate fourteen (14) NQF-endorsed maintenance measures and eleven (11) new measures and make recommendations for endorsement.

NQF Portfolio of Performance Measures for Renal Conditions

The Renal Standing Committee (see Appendix D) oversees NQF's portfolio of 40 renal measures. While most of those measures are part of the Renal Project, other measures related to renal conditions were designated as more appropriate for inclusion in other NQF projects such as Person- and Family-Centered Care Project (In-Center Hemodialysis CAHPS), Endocrine, All-Cause Admissions and Readmissions, Care Coordination, Surgery and Cardiovascular.

The Renal portfolio contains: 10 process measures, 29 outcome measures, and 1 composite measure (see table below).

Table 1. NQF Renal Portfolio of Measures

	Process	Outcome	Composite
Renal Project	7	20	0
Other Projects (Endocrine, Person- and Family- Centered Care, etc.)	3	9	1
Total	10	29	1

National Quality Strategy

The National Quality Strategy (NQS) serves as the overarching framework for guiding and aligning public and private efforts across all levels (local, State, and national) to improve the quality of health care in the U.S. The NQS establishes the "triple aim" of better care, affordable care, and healthy people/communities, focusing on six priorities to achieve those aims: Safety, Person and Family Centered Care, Communication and Care Coordination, Effective Prevention and Treatment of Illness, Best Practices for Healthy Living, and Affordable Care.

Improvement efforts for renal care are consistent with the NQS triple aim and align with several of the NQS priorities:

- Safety: The Renal measure portfolio includes measures that assess specific aspects of care that promote patient safety. The measures focused on hypercalcemia, hemoglobin levels and bloodstream infections, which are all indicators of patient safety.
- Effective Prevention and Treatment of Illness: Although, the incidence of chronic kidney and end stage renal disease has showed slight declines in the past few years, the conditions continue to generate significant costs for the US healthcare system.
- Person and Family Centered Care: There are two measures in the renal portfolio which have a person and family centered care focus, the In-Center Hemodialysis Consumer Assessment of Healthcare Providers and Systems (ICH CAHPS) and the Assessment of Quality of Life in Dialysis Patients.

Use of Measures in the Portfolio

Endorsement of measures by NQF is valued because the evaluation process is both rigorous and transparent, but also because evaluations are conducted by multi-stakeholder committees comprised of clinicians and other experts representing the healthcare spectrum including healthcare providers, employers, health plans, public agencies, community coalitions, and patients—many of whom use measures on a daily basis to ensure better care. Moreover, NQF-endorsed® measures undergo routine "maintenance" (i.e., re-evaluation) to ensure that they are still the best-available measures and reflect the current science. Importantly, federal law requires that preference be given to NQF-endorsed® measures for use in federal public reporting and performance-based payment programs. NQF measures also are used by a variety of stakeholders in the private sector, including hospitals, health plans, and communities.

The measures being considered in this Renal Project are being implemented at various levels within the healthcare system. For the new measures, many of them are in use in internal quality improvement efforts or have been developed for consideration for use in federal programs in the future. The majority of measures under consideration for maintenance endorsement are in use in the CMS ESRD Quality Incentive Program (QIP) and used for Dialysis Facility Compare. See Appendix C for details of federal program use for the measures in the portfolio that are currently under review.

Committee Input on Gaps in the Portfolio

During their discussions, the Committee identified numerous areas where additional measure development is needed. The following concepts, if developed into measures, could potentially contribute to improving quality of care for renal patients:

- Transitions in care –particularly for teens and adolescents and patients who transition from transplant back to requiring renal replacement.
- Palliative therapy/comfort therapy –patients focused measures where the goal is not curative;
- Patient Experience of Care – Consumer Assessment of Healthcare Providers & Systems (CAHPS) (expand beyond In-Center Hemodialysis (ICH)), Kidney Disease Quality of Life Instrument (KDQOL), and Depression Screening;
- Informed decision making for ESRD pregnant patients about birth control and family planning;
- Oral Medications – medicine reconciliation, appropriateness of medications;
- Transplant patients –especially for longer follow-up post-transplant;
- Incident versus prevalent patients (i.e., patients newly diagnosed);
- Patient engagement and actual participation in plan of care;
- Infection associated with peritoneal dialysis;
- Anxiety as a comorbidity;
- Staffing ratios in dialysis centers; and
- Malnutrition.

Renal Measure Evaluation

On May 6-7, 2015 the Renal Standing Committee evaluated 11 new measures and 14 measures undergoing maintenance review against NQF's standard evaluation criteria. To facilitate the evaluation, the Committee and candidate standards were divided into four workgroups for preliminary review of the measures against the evaluation sub-criteria prior to consideration by the entire Standing Committee. On July 30 and August 3, 2015, the Standing Committee met to review comments, consensuses not reached measures and reconsideration requests for six of the seven measures that were not recommended. The Committee's discussion and ratings of the criteria are summarized in the evaluation tables beginning on page 25.

Table 2. Renal Measure Evaluation Summary

	Maintenance	New	Total
Measures under consideration	14	11	25
Measures withdrawn from consideration before the Committee met	5	0	5
Measures recommended for endorsement	~~7~~ 9	6	~~13~~ 15
Measures recommended for endorsement with reserve status	~~3~~ 4	0	~~3~~ 4
Measures where consensus is not yet reached	~~1~~ 0	~~1~~ 0	~~2~~ 0
Measures not recommended for endorsement	~~2~~ 0	~~5~~ 6	~~7~~ 6

	Maintenance	New	Total
Reasons for not recommending	Importance – ~~1~~ 0 Scientific Acceptability – ~~1~~ 0 Overall – 0	Importance – 3 Scientific Acceptability – ~~2~~ 1 Overall – ~~0~~ 2	Importance – ~~4~~ 3 Scientific Acceptability – ~~3~~ 1 Overall – ~~0~~ 2

Comments Received Prior to Committee Evaluation

NQF solicits comments on endorsed measures on an ongoing basis through the Quality Positioning System (QPS). In addition, NQF solicits comments prior to the evaluation of the measures via an online tool located on the project webpage. For this evaluation cycle, the pre-evaluation comment period was open from March 23-April 10, 2015 for 18 of the 25 measures under review. Comments on four dialysis measures stewarded by RPA, the target weight measure stewarded by KCQA, the bloodstream infection measure stewarded by CDC and the optimal starts measure stewarded by Kaiser were not requested because measure submission materials could not be posted during this period. A total of 52 pre-evaluation comments were received (see Appendix E).

All submitted comments were provided to the Committee prior to its initial deliberations held during the workgroups calls and in-person meeting.

Comments Received After Committee Evaluation

The Draft Report went out for Public and Member comment June 12 through July 13, 2015. During this commenting period, NQF received 97 comments from five organizations.

A complete table of comments submitted pre- and post-evaluation, along with the responses to each comment and the actions taken by the Standing Committee, is posted to the project page on the NQF website, along with the measure submission forms.

The Committee reviewed all comments received and considered the pre-meeting comments prior to making an endorsement recommendation. The Committee also responded to all post-evaluation comments. Revisions to the draft report and the accompanying measure specifications are identified as red-lined changes.

Overarching Issues

During the Standing Committee's discussion of the measures, several overarching issues emerged that were factored into the Committee's ratings and recommendations for multiple measures and are not repeated in detail with each individual measure:

~~*Difficulty in Interpreting Measures Due to Submission Challenges*~~

~~The NQF measure information form submission system does not allow the developer to select 'intermediate clinical outcome' as the measure type until the developer gets to the evidence submission form; consequently, most of the intermediate outcome measures in the Renal Project were classified incorrectly as outcome measures. NQF is currently working to remove this restriction. Given the~~

~~incorrect measure type, the Committee often experienced difficulties in determining the correct level of evidence needed to meet the evidence criteria for intermediate outcome measures. During the in-person meeting, the Committee was instructed to disregard the type of measure designated in the measure information section of their documents, and instead to vote on the measure based on the measure type identified on the evidence form.~~

~~Additionally, some developers made typographical errors, omissions or provided incorrect information in the submission forms making the Committee's review and evaluation more challenging. Developers were allowed to verbally correct errors during the meeting with the opportunity to make revisions during the public comment period. NQF staff ensured measures were reviewed in the form they were submitted and only allowed developers to make revisions to the measure if it would not alter the bearings of the evidence or data provided.~~

Current Implementation and Use

During the review of the measures, the Committee noted that many measures being considered for re-endorsement and even some undergoing initial evaluation are not currently in use and the developer has not indicated a future intended use for the measure. For previously endorsed measures, the developers pointed out the measures are available to the general public to use for internal quality improvement even if they are not currently in use in federal programs. For new measure submissions, the developer indicated that many measures are developed prior to rulemaking, during which endorsement is a consideration when finalizing measures for use in federal programs. While the Committee considered current implementation an important criterion, lack of use in federal programs was not considered a barrier to endorsement.

Use of Reserve Status

A number of the measures submitted for maintenance evaluation were determined to be important indicators of quality, however, were "topped out" in performance. These measures often failed the NQF performance gap sub-criterion. The Committee indicated interest in considering them as suitable for recommendation for endorsement with reserve status. The purpose of an endorsement with reserve status is to retain endorsement of reliable and valid quality performance measures that have overall high levels of performance with little variability. In order to be considered for reserve status, the measure must pass all other NQF criteria, and the Committee must anticipate performance may deteriorate if the measure is not monitored. The Committee considered one measure where a lower score was indicative of better quality and had difficulties interpreting the use of reserve status, and if a measure "floor" and "ceiling" should be considered consistently. They suggested that measures of patient safety, where lower scores are optimal, may require different criteria for evaluation.

Level of Evidence and Population Size: Pediatric Measures

The Committee reviewed measures with a primary focus on the pediatric population, as well as some that focused more broadly on pediatric and adult ESRD patients combined. The Committee noted that, for the majority of pediatric measures, evidence is largely based on inference from adult data that adequate treatment will result in better outcomes. There was consensus among the Committee that performance measures for adults should serve as the minimum standard where pediatric specific data

does not exist. Overall, the Committee agreed this was acceptable due to the generally small number of pediatric patient population being served by any specific clinician or dialysis facility. One developer indicated there is a minimum denominator sample size of 11 patients ~~was~~ required for any publicly reported data. Since some facilities cannot reach this threshold, adult and pediatric combined measures were brought forward by the developer to assist in assisting pediatric patients in facilities that did not meet the 11-patient requirement. The Committee voiced concerns that measures with these combined populations may not be equally supported by the evidence and testing provided. Specific issues raised with each measure are detailed in Appendix A.

CROWNWeb Data

CROWNWeb is a Web-based data-collection system implemented in 2012 that allows Medicare-certified dialysis facilities in the United States to safely and securely submit administrative and clinical data to CMS[4]. The Committee requested clarity around data issues with CROWNWeb, specifically around collection of specific data required for measure calculation, including vascular access. The Committee raised a specific concern related to the impact of data collection errors on gap and other analyses, especially related to missing patient data. The developer responded that they feel missing data is not resulting in errors and provided analysis that demonstrated reliability between CROWNWeb and Medicare claims.

Summary of Measure Evaluation

The following brief summaries of the measure evaluation highlight the major issues that were considered by the Committee. Details of the Committee's discussion and ratings of the criteria for each measure are in *Appendix A.*

Recommended

0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement (Kidney Care Quality Alliance): Recommended

Description: Percentage of end stage renal disease (ESRD) patients aged 18 years and older receiving hemodialysis during the 12-month reporting period and on dialysis >90 days who: 1. have a functional autogenous AVF (defined as two needles used or a single-needle device [NOT one needle used in a two-needle device]) (computed and reported separately); 2. have a functional AV graft (computed and reported separately); or 3. have a catheter, but have been seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for a functional autogenous AVF or AV graft at least once during the 12-month reporting period (computed and reported separately). Reporting should be stratified by incident versus prevalent patients, as defined by the United States Renal Data System (USRDS); **Measure Type**: Process; **Level of Analysis**: Clinician: Individual; **Setting of Care**: Ambulatory Care : Clinician Office/Clinic, Dialysis Facility; **Data Source**: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records

This measure was originally endorsed in 2007, re-endorsed in 2011 and is specified at the clinician level. Although it is currently not in use, the developer stated there are plans for it to be used in public reporting and payment programs, and also plans for its use in quality improvement with external

benchmarking to multiple organizations. The measure can be monitored through Current Procedural Terminology (CPT) codes, End Stage Renal Disease diagnosis codes (International Classification of Diseases (ICD)-9 and 10) and G-codes for hemodialysis. The evidence base for the measure is derived from the Kidney Disease Outcomes Quality Initiative (KDOQI) 2006 guideline update for vascular access, which has a grade of B. The Committee noted the evidence on the vascular side for arteriovenous fistulas and grafts is stronger than the evidence on the impact on quality from a referred and assumed visit with the vascular surgeon for reassessment. The Committee considered validity and use of G-codes for measure calculation, and also noted that the data supplied by the developer on chart validation results showed high validity for sensitivity, specificity, positive predictive value, and negative predictive value. In addition, data indicated there was a meaningful difference between minimum and maximum scores. Upon consideration of the evidence, measure mechanics and testing data, the Committee recommended the measure for endorsement.

0256 Minimizing Use of Catheters as Chronic Dialysis Access (University of Michigan/Centers for Medicare & Medicaid Services): Recommended

Description: Percentage of patient months on maintenance hemodialysis during the last HD treatment of month with a chronic catheter continuously for 90 days or longer prior to the last hemodialysis session; **Measure Type**: Intermediate Clinical Outcome; **Level of Analysis**: Facility; **Setting of Care**: Dialysis Facility; **Data Source**: Administrative claims, Electronic Clinical Data

This measure was originally endorsed in 2007, re-endorsed in 2011 and is specified at the facility level. The measure is publicly reported in Dialysis Facility Compare (DFC) and is used in a payment program, ESRD QIP. The evidence presented indicates alignment with the 2006 update of the KDOQI Vascular Access Clinical Practice Guidelines. The measure is an intermediate outcome measure which reports the percentage of adult patient months on maintenance hemodialysis for patients on maintenance hemodialysis during the last treatment of the month, and that have a chronic catheter continuously for 90 days or longer prior to the last hemodialysis session. When paired with the fistula measures #0257, the goal of the catheter measure is to encourage further reduction in chronic catheter use. The developer provided January 2013-December 2013 CROWNWeb performance data indicating that the rate of minimizing catheter use is about 90%. The Committee agreed there is room for improvement and disparities in care. The Committee found the data supplied by the developer supported the reliability, validity and feasibility of the measure and voted as overall suitable for endorsement.

0257 Maximizing Placement of Arterial Venous Fistula (AVF) (University and Michigan/Centers for Medicare & Medicaid Services): Recommended

Description: Percentage of patient months for patients on maintenance hemodialysis during the last HD treatment of month using an autogenous AV fistula with two needles; **Measure Type**: Intermediate Clinical Outcome; **Level of Analysis**: Facility; **Setting of Care**: Dialysis Facility; **Data Source**: Administrative claims, Electronic Clinical Data

This measure was originally endorsed in 2007, re-endorsed in 2012 and specified at the facility level. The measure reports the percentage of adult patient months for ESRD patients on maintenance hemodialysis during the last treatment of the month using an endogenous AV fistula with two needles. When paired with the catheter measure #0256, the intent of the measure is to recognize facility efforts

to increase fistula use as primary vascular access. This measure treats fistula use as a positive outcome, prolonged use of channel catheter as a negative outcome and AV graft use as neutral. The Committee noted the evidence supporting the measure is supported by clinical guidelines as well as a significant number of articles and studies. However, the Committee would have liked to have seen data related to exceptions to placement of an AVF either due to patient circumstances (e.g., age) or patient preference. The developer noted that many of the concerns raised by the Committee are under consideration for possible revision to the measure in the future. After consideration of all the endorsement criteria, the Committee recommended this measure for continued endorsement. They also indicated a strong interest in being kept apprised of potential revisions that strengthen the measure construct.

0318 Delivered Dose of Peritoneal Dialysis Above Minimum (University of Michigan/Centers for Medicare & Medicaid Services): Recommended

Description: Percentage of all patient months for patients = 18 whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 and spKt/V =< 8.5. (dialytic + residual); **Measure Type**: Intermediate Clinical Outcome; **Level of Analysis**: Facility; **Setting of Care**: Dialysis Facility; **Data Source**: Administrative claims, Electronic Clinical Data

This intermediate clinical outcome measure was originally endorsed in 2007 and is specified at the facility level. The measure is used in Dialysis Facility Compare for public reporting and the ESRD Quality Incentive programs. The intent of the measure is to evaluate peritoneal dialysis adequacy to ensure frequent adequacy measurement and adequate dialysis dosing, as both have been linked to improved patient outcomes. Committee members noted that the evidence supports the lower bound (spKt/V >= 1.7), but lacks evidence to support the upper bound (spKt/V >= 8.5). The developer clarified that the upper bounds were included in the specifications as an administrative means of ensuring that the data integrity were maintained, and to be transparent with how the measure is calculated. The Committee recommended that the upper bound be removed and the developer agreed to make the change. At the post-comment call, the developer confirmed the requested change had been made. Upon considering the stipulated revision to the measure, as well as data provided on reliability, validity and feasibility, the Committee recommended the measure for continued endorsement.

0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute (Renal Physicians Association): Recommended

Description: Percentage of patients aged 18 years and older with a diagnosis of End Stage Renal Disease (ESRD) receiving peritoneal dialysis who have a total Kt/V >= 1.7 per week measured once every 4 months; **Measure Type**: Intermediate Clinical Outcome; **Level of Analysis**: Clinician : Group/Practice, Clinician : Individual, Clinician : Team; **Setting of Care**: Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other; **Data Source**: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry

This intermediate clinical outcome measure was originally endorsed in 2007 and is specified at the clinician level. The measure is used in public reporting, payment and quality improvement programs (PQRS, Physician Compare, and RPA Internal Quality Improvement initiatives). The rationale for the measure is that an adequate dialysis dose is linked to improved health outcomes such as attaining

highest quality and quantity of life after onset of illness, decreasing morbidity and mortality, and increasing treatment effectiveness. The Committee recommended that it would be helpful to have clarity on how long the residual kidney function is allowed to carry forward, and to have a drop date for the total Kt/V calculation (e.g., three or four months). At the post-comment call, the developer confirmed the measure now clarified residual function is measured every 4 months. Committee members discussed whether having a minimum number of eleven patients included in the denominator would make the measure more meaningful and could reduce variance, similar to how the facility level measures are specified. Although Committee members noted that they would like to see more data to support the minimum sample size for clinicians in the future, the Committee agreed that the measure is suitable for continued endorsement.

1424 Monthly Hemoglobin Measurement for Pediatric Patients (University of Michigan/Centers for Medicare & Medicaid Services): Recommended

Description: Percentage of patient months of pediatric (less than 18 years) in-center hemodialysis, home hemodialysis, and peritoneal dialysis patients who have monthly measures for hemoglobin during the reporting period; **Measure Type**: Process; **Level of Analysis**: Facility; **Setting of Care**: Dialysis Facility; **Data Source**: Electronic Clinical Data

This measure was originally endorsed in 2011 and is specified at the facility level. The Committee accepted evidence provided by the developer and noted a systematic review summary that was supportive of the measure. With a mean performance score of 75%, the Committee acknowledged there was a performance gap. While the Committee expressed some concerns over the small sample size for pediatric practices and CROWNWeb data transmission issues, the Committee concluded that overall this measure was reliable and valid. The Committee agreed the measure was feasible; however, it had concerns about the measure not currently being in use. The developer clarified that, while not currently used in public programs, the measure is available for use in quality improvement efforts.

1423 Minimum spKt/V for Pediatric Hemodialysis Patients (University of Michigan/Centers for Medicare & Medicaid Services): Recommended~~Consensus Not Reached~~

Description: Percentage of patient months for all pediatric (<18 years old) in-center HD patients who have been on hemodialysis for more than 90 days and dialyzing 3 or 4 times weekly whose average delivered dose of hemodialysis using the UKM or Daugirdas II formula) was between spKt/V = 1.2 and spKt/V<5.0; **Measure Type**: Intermediate Clinical Outcome; **Level of Analysis**: Facility; **Setting of Care**: Dialysis Facility; **Data Source**: Administrative claims, Electronic Clinical Data

This intermediate clinical outcome measure was originally endorsed in 2011 and is specified at the facility level. The measure is currently publicly reported in Dialysis Facility Compare and in the ESRD OIP payment program. The Committee had much discussion about the evidence and did not reach consensus on this sub-criterion. Committee members questioned the evidence supporting the upper limit (spKt/V<5). In addition, they raised concerns about the evidence supporting dialyzing three times and not four times per week. The Committee did not reach consensus on reliability. There were concerns about the measure as constructed; specifically using a single pool Kt/V in patients dialyzed at different frequencies. Members noted that the urea kinetic modelling (UKM) or Daugirdas formulas are designed for a fixed number of dialysis treatments a week. Committee members noted that when

looking at varying frequencies of dialysis, rather than using a single pool Kt/V, the tool that should be used is a continuous tool, such as the standard Kt/V. Committee members also raised concerns that setting a minimum of 1.2 Kt/V with whatever frequency could be a disincentive to put patients on increasing frequency of dialysis. Consensus was not reached during the in-Person meeting when voting on overall suitability for continued endorsement. Based on the updates provided by the developer during the July 30 post-comment call, the Committee was able to reach consensus on this measure and ultimately recommended the measure for endorsement.

1425 Measurement of nPCR for Pediatric Hemodialysis Patients (University of Michigan/Centers for Medicare & Medicaid Services): Recommended

Description: 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; **Measure Type**: Process; **Level of Analysis**: Facility; **Setting of Care**: Dialysis Facility; **Data Source**: Electronic Clinical Data

This measure was originally endorsed in 2011 and is specified at the facility level. While the Committee acknowledged the evidence and performance gap data were based on the adult population, they concluded the evidence and performance gap could be inferred to support the pediatric population. Based on the data provided by the developer, the Committee agreed the measure is reliable and valid. The Committee agreed the measure was feasible, however, had concerns about the measure not currently being in use. The developer clarified that, while not currently used in public programs, the measure is available for use in quality improvement efforts.

1460 Bloodstream Infection in Hemodialysis Outpatients (Centers for Disease Control and Prevention): ~~Not~~ Recommended

Description: Adjusted ranking metric (ARM) and Standardized Infection Ratio (SIR) of Bloodstream Infections (BSI) will be calculated among patients receiving hemodialysis at outpatient hemodialysis centers.; **Measure Type**: Outcome; **Level of Analysis**: Facility, Population : National, Population : Regional, Population : State; **Setting of Care**: Dialysis Facility; **Data Source**: Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Imaging/Diagnostic Study, Electronic Clinical Data : Laboratory, Paper Medical Records, Electronic Clinical Data : Pharmacy

This is a facility-level outcome measure originally endorsed in 2011. The original measure reported the Standardized Infection Ratio (SIR), and the~~i~~s original submission for this cycle of review added~~s~~ the Adjusted Ranking Metric (ARM) for patients who receive hemodialysis at outpatient hemodialysis facilities. The evidence provided states that use of this measure is demonstrated to assist in identifying outbreaks of bloodstream infections, to stimulate improvements in vascular access care, and to stimulate improvements in other infection control practices that have led to subsequent reductions in bloodstream infections. The Committee indicated the evidence for the SIR remains as strong today as at the original endorsement. While the SIR component of the measure is in current use and reported via the ESRD QIP, the performance data provided was outdated. The developer stated they are currently analyzing data coming out of the ESRD QIP and should be able to update performance and trend data in the near future. The Committee identified challenges in fully evaluating both the ARM and SIR components of the measure. While the SIR component is fully specified and tested, the developer

acknowledged the ARM methodology was still being finalized, but requested review and consideration of endorsement for both components. With the absence of detailed specifications and methodology on the ARM, the Committee did not recommend the measure, as currently submitted, for continued endorsement. Members of the Committee encouraged developers to use a broad standardization methodology rather than using access type alone. Taking into account the Committee's concerns about the ARM aspect of the measure, the developer removed it from the measure. After this update, the Committee changed their decision and recommended this measure for endorsement.

1662 Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy (Renal Physicians Association): Recommended

Description: Percentage of patients aged 18 years and older with a diagnosis of CKD (not receiving RRT) and proteinuria who were prescribed ACE inhibitor or ARB therapy within a 12-month period; **Measure Type**: Process; **Level of Analysis**: Clinician : Group/Practice, Clinician : Individual, Clinician : Team; **Setting of Care**: Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other; **Data Source**: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records, Electronic Clinical Data : Registry

This newly submitted process measure is specified at the clinician level. The measure is currently used for quality improvement in the RPA Kidney Quality Improvement Registry. The measure has planned use in public reporting and in a professional certification or recognition program. The developers provided full specifications on the measure and defined data elements. Data abstracted from patient records in 2008 were used to calculate an inter-rater reliability of the measure. This analysis included a 93.15% agreement and kappa statistic of 0.8047 with the 95% confidence interval between 0.6395- 0.9699 to adjust for chance agreement. Committee members noted the specifications of the measure were well defined and precisely specified and agreed to recommend the measure for endorsement. Data were presented from the CMS Physician Quality Reporting Initiative (PRQI) claims option and in 2008, 45% of patients failed to receive optimal care and significant variations in performance were noted in the program.

1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL (Renal Physicians Association): Recommended

Description: Percentage of calendar months within a 12-month period during which patients aged 17 years and younger with a diagnosis of End Stage Renal Disease (ESRD) receiving hemodialysis or peritoneal dialysis have a hemoglobin level < 10 g/dL; **Measure Type**: Outcome; **Level of Analysis**: Clinician : Group/Practice, Clinician : Individual, Clinician : Team; **Setting of Care**: Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other; **Data Source**: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry

This measure was originally endorsed in 2012 and is specified at the clinician level. The measure is currently used in the CMS Physician Compare and Physician Quality Reporting System (PQRS) programs, and is also used by the RPA Kidney Quality Improvement Registry. The Committee agreed there was strong evidence that a hemoglobin level below 10 results in adverse outcomes for children and that

there was an opportunity for improvement with literature suggesting approximately 20% of patients currently living with levels below 10 gm/dL. Committee members voiced concern that the measure was not tested in children, the target population of this measure. Also, the kappa listed was for a data element that was no longer in the measure; hence, the Committee noted it was not relevant to the review of this measure. Initially, the Committee voted not to pass the measure on reliability. After further discussion and clarification from the developer that the reliability testing results would not change if tested in a pediatric population, the Committee requested to revote and passed the measure on reliability. After consideration of validity, feasibility, and use and usability voted to recommend the measure for continued endorsement.

2594 Optimal End Stage Renal Disease (ESRD) Starts (The Permanente Federation): Recommended

Description: Optimal End Stage Renal Disease (ESRD) Starts is the percentage of new ESRD patients during the measurement period who experience a planned start of renal replacement therapy by receiving a preemptive kidney transplant, by initiating home dialysis, or by initiating outpatient in-center hemodialysis via arteriovenous fistula or arteriovenous graft.; **Measure Type**: Process; **Level of Analysis**: Integrated Delivery System, Population : Regional, Clinician : Team; **Setting of Care**: Ambulatory Care : Clinician Office/Clinic, Dialysis Facility; **Data Source**: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry

This is a newly submitted measure for endorsement and is specified at the clinician and system level. The measure is currently in use within the Kaiser Permanente integrated delivery system. The developer submitted clinical guidelines and systematic evidence reviews to support each component of the measure. Based on the evidence submitted, the Committee indicated that overall the measure evidence could be graded as moderate. In addition, the developer data suggests a performance gap both within an integrated delivery system and the broader U.S. that support the need for a national performance measure. The primary concerns raised about the measure specifications and reliability were regarding length of time new patients are under a nephrologist's care, and the inclusion of elderly and pediatric patients in the measure population. At the post-comment call, the developer confirmed pediatric patients were removed from the measure's population. Upon review of the reliability and validity testing data submitted, the Committee agreed the testing demonstrated scientific acceptability of the measure. Overarching discussion about the feasibility and usability of the measure focused on adaptation beyond the Permanente Federation and potential for implementation via use of claims, registry and CROWNWeb data. The developer indicated they would welcome conversations with CMS to explore broader implementation. Given the sufficient evidence, reliability, validity and meeting the full NQF criteria, the Committee recommended Optimal ESRD Starts for endorsement.

2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour) (Kidney Care Quality Alliance): Recommended

Description: Percentage of adult in-center hemodialysis patients in the facility whose average ultrafiltration rate (UFR) is >/= 13 ml/kg/hour; **Measure Type**: Intermediate Clinical Outcome; **Level of Analysis**: Facility; **Setting of Care**: Other; **Data Source**: Electronic Clinical Data

This is a newly submitted measure specified at the facility level. The measure is intended to assess the percentage of adult in-center hemodialysis patients whose average ultrafiltration rate (UFR) is greater

than or equal to 13 ml/kg per hour. During the workgroup review, there were questions about the time component in the numerator. KCQA considers the time component a critical element. Rather than dictating the UFR remain at or below 13, the length of the session component of the measure allows judicious use of UFR rates above 13 as long as the patient is dialyzed for more than 240 minutes. Upon review of the evidence, the Committee noted that in practice, if UFR is the sole focus, regardless of the timeframe some patients may require significantly longer dialysis treatments beyond four hours, increasing the chance that they may refuse treatment. The time component is also necessary to avoid potential adverse unintended consequences of implementing the measure. The developer provided evidence including a KDOQI Guideline. The Committee noted that some patients need to have extended hemodialysis times and slower UFR. In addition, a literature review was provided that further supports the evidence. The Committee considered the clarity of the specifications, and reliability and validity testing results and recommended to endorse the measure. The one area of concern raised was related to usability and whether the measure could eventually be implemented via CROWNWeb. The developer indicated they are in discussions with CMS about this matter, and that the measure is currently in use for quality improvement efforts.

2704 Minimum Delivered Peritoneal Dialysis Dose (University of Michigan/Centers for Medicare & Medicaid Services): Recommended

Description: Percentage of all patient months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual); **Measure Type**: Intermediate Clinical Outcome; **Level of Analysis**: Facility; **Setting of Care**: Dialysis Facility; **Data Source**: Administrative claims, Electronic Clinical Data

This newly submitted intermediate clinical outcome measure is measured at the facility level. It is a combination of the individual adult and pediatric Kt/V measures. The existing NQF endorsed adult peritoneal Kt/V measure (#0318) is currently publicly reported, and the new pediatric peritoneal Kt/V (#2706) measure are both under review by the Committee, and has been finalized for payment year (PY) 2018 of the ESRD Quality Incentive Program. The measures were bought forward as separate measures but the developer indicated this measure could replace the two separate measures in the future. The measure focuses on peritoneal dialysis dosing adequacy every four months (adults) and six months (children) for ESRD dialysis patients. Committee members noted that although the evidence is not as strong for the pediatric population and is based on expert opinion, no equivalent large scale clinical trials have been conducted in the pediatric peritoneal dialysis population. Members questioned if there is a difference between the 1.7 Kt/V and 1.8 Kt/V clearance thresholds (in evidence) with pediatric and adults and why there are multiple measures. The developer clarified that they do not report on measures at facilities with fewer than eleven patients for patient identification reasons, and that many facilities have fewer than eleven patients. Combining adult and pediatric patients into one measure would allow more facilities to report on peritoneal dialysis adequacy. The Committee agreed that the measure is suitable for endorsement.

2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V (University of Michigan/Centers for Medicare & Medicaid Services): Recommended

Description: Percent of pediatric peritoneal dialysis patient-months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V = 1.8 and spKt/V< 8.5. (dialytic + residual); **Measure**

Type: Intermediate Clinical Outcome; **Level of Analysis**: Facility; **Setting of Care**: Dialysis Facility; **Data Source**: Administrative claims, Electronic Clinical Data

This newly submitted intermediate clinical outcome measure is specified at the facility level. This is a new measure that is not currently in use; however the measure has been finalized for use in payment year (PY) 2018 ESRD QIP. This specific measure is focused on pediatrics and the developers state that pediatric peritoneal adequacy targets should be no lower than existing adult peritoneal adequacy targets; generally, pediatric patients' greater metabolic demands require higher adequacy targets in terms of small solute clearance. The Committee raised concerns about the specifications as they were provided in the submission form, that the interval of measurement should be specified, that residual renal function should be measured using urea clearance and not combined creatine and urea clearance, and that the Kt/Vurea minimum should be changed to spKt/V >= 1.8 to spKt/V >= 1.7. The developer has agreed to make the changes to the measure submission form and the Committee agreed that the measure is suitable for endorsement.

Recommended with Reserve Status

0249 Delivered Dose of Hemodialysis Above Minimum (University of Michigan/Centers for Medicare & Medicaid Services): Recommended Endorsement with Reserve Status

Description: Percentage of all patient months for adult patients (>= 18years old) whose average delivered dose of hemodialysis (calculated from the last measurements of the month using the UKM or Daugirdas II formula) was between spKt/V >= 1.2 and spKt/V =< 5.0; **Measure Type**: Intermediate Clinical Outcome; **Level of Analysis**: Facility; **Setting of Care**: Dialysis Facility; **Data Source**: Administrative claims, Electronic Clinical Data

This measure was originally endorsed in 2007 and is specified at the facility level. The measure is currently reported in the Dialysis Facility Compare public program and the ESRD OIP payment program. The Committee agreed there is strong evidence that supports the association between low spKt/V and increased mortality. Upon review of the data provided on performance gap, the Committee agreed there is not much room for improvement and the measure did not pass this sub-criterion. However, the Committee agreed that the measure is a good candidate for endorsement with reserve status. The Committee requested that the upper threshold of spKt/v <= 5.0 be removed as there is a lack of evidence to support this, and the developer agreed to make the change. Upon consideration of the evidence, measure mechanics and testing data, the Committee recommended the measure for reserve status.

0255 Measurement of Serum Phosphorus Concentration (University of Michigan/Centers for Medicare & Medicaid Services): Recommended Endorsement with Reserve Status

Description: Percentage of all peritoneal dialysis and hemodialysis patient months with serum or plasma phosphorus measured at least once within the month; **Measure Type**: Process; **Level of Analysis**: Facility; **Setting of Care**: Dialysis Facility; **Data Source**: Electronic Clinical Data

The measure was originally endorsed in 2007, re-endorsed in 2012 and is specified for use at the facility level. The Committee noted that while this is a process measure focused on monthly assessment of

patient serum or plasma phosphorus, the evidence provided was not in direct alignment. Specifically, the KDIGO guidelines state for CKD, phosphorous levels should be measured every one to three months and the measure states a monthly phosphorous. The Committee rated this measure as moderately satisfying the evidence criteria. The Committee found the testing data supplied by the developer demonstrated adequate reliability, validity and feasibility of the measure. Committee members agreed that there was only slight opportunity for improvement and voted to recommend the measure for endorsement with reserve status.

0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute (Renal Physicians Association): Recommended Endorsement with Reserve Status

Description: Percentage of calendar months within a 12-month period during which patients aged 18 years and older with a diagnosis of End Stage Renal Disease (ESRD) receiving hemodialysis three times a week for >= 90 days have a spKt/V >= 1.2; **Measure Type**: Intermediate Clincal Outcome; **Level of Analysis**: Clinician : Group/Practice, Clinician : Individual, Clinician : Team; **Setting of Care**: Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other; **Data Source**: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry

This intermediate clinical outcome measure was originally endorsed in 2007 and is specified at the clinician level. The measure is currently used in the CMS Physician Compare and PQRS. The measure is also used for quality improvement via the RPA Quality Improvement Registry. The rationale for the measure is that an adequate dialysis dose is strongly associated with better outcomes, including decreased mortality, fewer hospitalizations, decreased length of hospitalizations, and decreased hospital costs. The measure is presented as a clinician level measure in contrast to the CMS facility-level measure (NQF# 0249). Similar to measure NQF #0249, the Committee agreed that the evidence is strong. Upon review of the data provided on performance gap, the Committee agreed that there is little opportunity for improvement and the measure did not pass this sub-criterion. However, upon consideration of the data provided on evidence, reliability, validity and feasibility, the Committee agreed that the measure should be recommended for endorsement with reserve status.

1454 Proportion of patients with hypercalcemia (University of Michigan/Centers for Medicare & Medicaid Services): Recommended Endorsement with Reserve Status~~Not Recommended~~

Description: Percentage of adult dialysis patients with a 3-month rolling average of total uncorrected calcium (serum or plasma) greater than 10.2 mg/dL (hypercalcemia); **Measure Type**: Outcome; **Level of Analysis**: Facility; **Setting of Care**: Dialysis Facility; **Data Source**: Electronic Clinical Data

This measure was originally endorsed in 2011 and is specified at the facility level. The measure is currently used in the CMS Dialysis Facility Compare public reporting program. While the Committee agreed that evidence was largely associative, they allowed the measure to move forward on an evidence exception due to it being considered an important safety measure that fills a gap area in bone and mineral disease. The Committee initially concluded there was very little opportunity for improvement and the 2.1% gap identified by the developer did not warrant a national performance measure. However, based on new data provided by the developer during the post comment call, the Committee agreed to consider the measure for endorsement with reserve status, noting there were no other bone

and mineral measures available in the field. After review of the reliability, validity, feasibility, and usability of the measure, the Committee agreed that the measure should be recommended for endorsement with reserve status.

Not Recommended

1660 ESRD Patients Receiving Dialysis: Hemoglobin Level <9g/dL (Renal Physicians Association): Not Recommended

Description: Percentage of calendar months within a 12-month period during which patients aged 18 years and older with a diagnosis of ESRD who are receiving hemodialysis or peritoneal dialysis have a Hemoglobin level <9g/dL; **Measure Type**: Outcome; **Level of Analysis**: Clinician : Group/Practice, Clinician : Individual, Clinician : Team; **Setting of Care**: Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other; **Data Source**: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records, Electronic Clinical Data : Registry

This is a newly submitted measure for endorsement and is specified at the clinician level. While the Committee agreed there was strong evidence supporting that the hemoglobin target should generally be in the range of 11.0 to 12.0 g/dL, the Committee could not come to consensus in assessing whether the evidence supported <9g/dL as an acceptable cutoff. The Committee agreed it was an important safety measure, however, the Committee eventually concluded that the gap of 5.4 % presented by the developer was not sufficient enough to warrant a national performance measure. As a new measure, this measure could not be considered for inactive endorsement with reserve status. A reconsideration request was submitted by the developer. After some discussion and an additional vote on gap, the Committee decided to stand by their original decision to not recommend this measure.

2699 Anemia of chronic kidney disease: Dialysis facility standardized transfusion ratio (STrR) (University of Michigan/Centers for Medicare & Medicaid Services): Not Recommended

Description: The risk adjusted facility level transfusion ratio "STrR" is specified for all adult dialysis patients. It is a ratio of number of eligible red blood cell transfusion events observed in patients dialyzing at a facility, to the number of eligible transfusions that would be expected under a national norm, after accounting for the patient characteristics within each facility. Eligible transfusions are those that do not have any claims pertaining to the comorbidities identified for exclusion, in the one year look back period prior to each observation window.; **Measure Type**: Outcome; **Level of Analysis**: Facility; **Setting of Care**: Dialysis Facility; **Data Source**: Administrative claims, Electronic Clinical Data

This is a newly submitted measure for endorsement and is specified at the facility level. The measure is currently used in Dialysis Facility Compare, and is finalized to be used in PY 2018 in the End Stage Renal Disease Incentive Program. The measure looks at a dialysis facility's Standardized Transfusion Ratio (STrR). The rationale behind the measure is that there have been regulatory and policy changes affecting erythropoietin-stimulating agent (ESA) use in dialysis that could result in more transfusions. The Committee disagreed whether STrR should be considered an outcome due to ambiguity around how quality of care can be interpreted and improved, thus, were not able to come to consensus on whether the evidence supported a relationship between the measured health outcome and at least one clinical action. While the developer displayed variation in performance between facilities in the 25% to 75%

quartile, many Committee members noted that it is difficult to determine and interpret a gap without a STrR target. The Committee was not able to come to consensus on whether the magnitude of the performance gap is sufficient to warrant a national standard. Due to concerns that the measure reflects transfusion practices and behaviors at the hospital level instead of quality of care at dialysis facilities, and around possible differential treatment of data depending on the source, the Committee concluded this measure was not reliable. A reconsideration request was not submitted by the developer.

2700 Ultrafiltration rate greater than 13 ml/kg/hr (University of Michigan/Centers for Medicare & Medicaid Services): Not Recommended

Description: Percentage of patients months for patients an ultrafiltration rate greater than 13 ml/kg/hr.; **Measure Type**: Intermediate Outcome; **Level of Analysis**: Facility; **Setting of Care**: Dialysis Facility; **Data Source**: Electronic Clinical Data

This is a newly submitted measure for endorsement and is specified at the facility level. The measure is constructed very similarly to #2701, stewarded by KCQA, but with differences in the number of ultrafiltration rate measurements required, as well as lack of timing components. While the evidence and testing of the similar measures should have been consistent, upon review of the evidence, the Committee raised concerns about the strength of the evidence on the ultrafiltration rate alone and thus were unable to reach consensus on the evidence criterion. The discussion continued through performance gap and reliability components. Based on the inter-unit reliability testing conducted, the Committee indicated the measure could be reliably calculated. To demonstrate validity, the developer conducted Poisson regression analysis with two existing measures and the results of those tests raised some concerns from the Committee; as the association was not in the direction expected. The Committee failed the measure at validity and the measure was not recommended for endorsement. A reconsideration request was submitted by the developer. After additional discussion , the Committee did not reach consensus on validity and usability, however, agreed the measure was feasible since it is collected via CROWNWeb. Despite the reconsideration, the Committee ultimately voted to not recommend the measure for endorsement.

2702 Post-Dialysis Weight Above or Below Target Weight (Kidney Care Quality Alliance): ~~Consensus Not Reached~~ Not Recommended

Description: Percentage of patients with an average post-dialysis weight >/= 1 kg above or below the prescribed target weight; **Measure Type**: Intermediate Clinical Outcome; **Level of Analysis**: Facility; **Setting of Care**: Other; **Data Source**: Electronic Clinical Data

This is a newly submitted measure for endorsement and is specified at the facility level. The developer emphasized that this measure complements and serves as a check and balance to measure #2701. Grade A KDOQI Guideline was provided which states that patients should be ultrafiltered to a target optimal dry weight. In addition, the developers utilized an expert consensus panel to review and advise the developer on the measure construct based on 14 studies that assessed issues related to the use of technology in weight management. These studies focused on electronic tools used to define target weight, the intradialytic weight gain including various populations and what happens when one tries to achieve target weight and various adverse events. Upon consideration of the evidence documentation, the Committee summarized that there is evidence for a compelling need to have measures for volume.

However, it was also noted that given the arbitrary manner in which clinicians set the dry weight and given lack of data, the evidence is not there yet. The Committee voted to continue evaluation and voted insufficient evidence with exception. Based on continued review of the scientific acceptability evaluation, feasibility and usability of this measure, the Committee did not reach consensus on overall suitability for endorsement. After reviewing the information provided by the developer during the July 30 post-comment call, the Committee was able to reach consensus on this measure and did not recommend it for endorsement.

2703 Minimum Delivered Hemodialysis Dose (University of Michigan/Centers for Medicare & Medicaid Services): Not Recommended

Description: Percentage of all patient months for patients whose average delivered dose of hemodialysis using the UKM or Daugirdas II formula) was between spKt/V >= 1.2 and spKt/V =< 5.0; **Measure Type**: Intermediate Clinical Outcome; **Level of Analysis**: Facility; **Setting of Care**: Dialysis Facility; **Data Source**: Administrative claims, Electronic Clinical Data

This newly submitted intermediate outcome measure is specified at the facility level. The measure includes both the adult and pediatric populations. The Committee noted that as in many pediatric measures, there is not much evidence for the pediatric population. The measure is based on adult data with the assumption that children should be doing at least as well as adults do, and the Committee noted that is a reasonable position to take. The Committee had concerns with dialysis three versus four times per week. Evidence is related to three times per week although a very low percentage of pediatric patients are dialyzed four times per week. The Committee suggested that the developer change the limit to three times a week single pool. The Committee did not reach consensus when voting on the evidence criterion. Data on performance gap presented by the developer demonstrated that there is very little room for improvement. The measure did not pass the performance gap sub-criterion. A reconsideration request was submitted by the developer. After some discussion, the Committee chose to not reconsider this measure and stood by their original decision to not recommend this measure.

2705 Delivered Dose of Dialysis Above Minimum (University of Michigan/Centers for Medicare & Medicaid Services): Not Recommended

Description: Percentage of all patient months for patients whose average delivered dose of dialysis (either hemodialysis or peritoneal dialysis) met the specified threshold during the reporting period; **Measure Type**: Intermediate Clinical Outcome; **Level of Analysis**: Facility; **Setting of Care**: Dialysis Facility; **Data Source**: Administrative claims, Electronic Clinical Data

This newly submitted measure is specified at the facility level of analysis. The measure was developed for use by CMS for its public reporting initiatives. The measure is a combination of the respective pediatric hemodialysis (NQF #1423) and peritoneal dialysis adequacy (NQF# 2706) measures, and the respective adult hemodialysis (NQF #2704) and peritoneal (NQF #2703) measures. The Committee noted that the same issues with evidence that were discussed during review of the pediatric hemodialysis and peritoneal dialysis adequacy measures and the adult hemodialysis and peritoneal measures apply to this measure. The numerator includes hemodialysis patients dialyzing three or four times a week but the evidence cited is for dialysis three times a week using the Daugirdas formula. Committee members noted that the formula cannot be used for varying weekly dialysis frequency and that a standard weekly

Kt/V should be used instead. The Committee also noted the lack of evidence to support to the upper limit (Kt/V<5). Overall, the Committee did not pass this measure on Importance due to concerns with the evidence sub-criterion. A reconsideration request was submitted by the developer. Based on new information provided by the developer, the Committee decided to reconsider this measure. The measure was able to pass the evidence criteria but the Committee did not feel there was enough of a gap to justify a national standard and stood by their original decision to not recommend this measure.

References

[1] U.S. Renal Data System, USRDS 2010 Annual Data Report: Atlas of Chronic Kidney Disease and End-Stage Renal Disease in the United States, National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, 2009. Available at http://www.usrds.org/atlas.htm Last accessed March 2011.
[2]CROWNWeb. What is CROWNWeb? Web site. CROWNWeb: History, Purpose, and Usage [video]. http://mycrownweb.org/help/what_is_crownweb/. Last accessed June 2015.
[3] United States Renal Data System, 2014 Annual Data Report: Epidemiology of Kidney Disease in the United States. National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, 2014.

Appendix A: Details of Measure Evaluation

Measures Recommended

Measures Recommended With Reserve Status

Measures Not Recommended

Measures Withdrawn From Consideration

Measures Recommended

Rating Scale: H=High; M=Moderate; L=Low; I=Insufficient; NA=Not Applicable; Y=Yes; N=No

0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement

Submission | **Specifications**

Description: Percentage of end stage renal disease (ESRD) patients aged 18 years and older receiving hemodialysis during the 12-month reporting period and on dialysis >90 days who:

1. have a functional autogenous AVF (defined as two needles used or a single-needle device) [not one needled used in a two-needle device]} (computed and reported separately);

2. have a functional AV graft (computed and reported separately); or

3. have a catheter but have been seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for a functional autogenous AVF or AV graft at least once during the 12-month reporting period (computed and reported separately). +

Reporting should be stratified by incident versus prevalent patients, as defined by USRDS.

Numerator Statement: Number of patients from the denominator who:

1. have a functional autogenous AVF (defined as two needles used or a single-needle d device) [not one needled used in a two-needle device]} (computed and reported separately);

2. have a functional AV graft (computed and reported separately); or

3. have a catheter but have been seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for a functional autogenous AVF or AV graft at least once during the 12-month reporting period (computed and reported separately). +

Reporting should be stratified by incident versus prevalent patients, as defined by USRDS.

Denominator Statement: All ESRD patients aged 18 years and older receiving hemodialysis during the 12-month

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reporting period and on dialysis for greater than 90 days.

This measure includes both in-center and home hemodialysis patients.

Exclusions: None.

Adjustment/Stratification: No risk adjustment or risk stratification

Level of Analysis: Clinician : Individual

Setting of Care: Ambulatory Care : Clinician Office/Clinic, Dialysis Facility

Type of Measure: Process

Data Source: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records

Measure Steward: Kidney Care Quality Alliance (KCQA)

STANDING COMMITTEE MEETING [05/06/2015-05/07/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **2-H; 14-M; 1-L; 5-I**; 1b. Performance Gap: **3-H; 18-M; 1-L; 0-I**

Rationale:

- The developer cited the following evidence: Kidney Disease Outcomes Quality Initiative (KDOQI) Clinical Practice Guidelines and Clinical Practice Recommendations for 2006 Updates: Hemodialysis Adequacy, Peritoneal Dialysis Adequacy and Vascular Access. All related aspects of the guidelines were graded B (moderately strong evidence). The Committee noted the evidence supported AVF and also noted the evidence did not address all the complex factors that may impact the patient receiving an AVF. They concluded there was evidence to support this measure.
- The developer presented data showing a 93.8% mean performance from a review of 1057 hemodialysis observed patients drawn from a mix of 53 for-profit and not-for-profit dialysis units. The performance for each individual facility in the pilot ranged from 41% to 100%. The Committee agreed that the data presented indicated there is room for improvement.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **2-H; 14-M; 5-L; 1-I**; 2b. Validity: **2-H; 14-M; 5-L; 1-I**

Rationale:

- The Committee expressed many concerns about the specifications of the measure:
  - Some committee members requested the developer clarify if vascular access complications were defined only as complications related to hemodialysis catheters or whether complications related to fistulas and grafts were included in their definition. The developer commented that the measure focuses on assessing the degree of placement instead of following and monitoring complications so a definition was not included in the submission; however, the reference was to catheter-related complications due to the higher degree of complication and infections associated with catheters. The Committee agreed with the developer that treatment of vascular access complication was common practice; however, they alluded to a general need to monitor fistula and graft complications as well.
  - The Committee supported the flexibility of the measure in choosing the best option for the patient, be it an AVF or AV Graft. The developer stated this feature of the measure was based on feedback from the last NQF Renal Steering Committee that requested that two separate measures, one that covered AVF and one that looked at AV Graft, be combined. However, committee members voiced concerns that an evaluation by a vascular surgeon or other qualified surgeon was considered equal to the actual placement of a functional AVF or AV Graft in this measure. The developer stressed that this is for the patient's benefit and that documentation of reasons the patient could not support a permanent access is required. While this feature could be seen as an easy route for meeting the requirement of the measure, the Committee agreed

encouraging shared decision-making and incorporating patient-informed choice was a positive aspect of the measure.

- The developer provided 2008 – 2009 critical data element testing that assessed data integrity and inter-rater reliability (IUR) from a sample of 53 dialysis facilities and four nephrology offices.
- At the facility level, IUR had a kappa of 0.8880 with a 95% confidence interval of 0.7484 – 1.00. The physician office testing resulted in a kappa of 0.9152 with a 95% confidence interval of 08349-0.9964. Overall, the Committee agreed the measure was reliable.
- Validity was also assessed at the critical data element level. Following data collection, on-site data audits were performed at 11 of the 53 participating field-test sites/facilities.
- Chart validation results showed high validity for sensitivity at 99.38%, specificity at 85.29%, positive predictive value at 96.99%, and negative predictive value at 96.67%.
- There was a meaningful difference that was defined as a significant spread of greater than 20% between minimum and maximum scores. The performance across facilities in the pilot ranged from 41 to 100%, with a mean of 93.8% in those 53 facilities. Based on this data, the Committee agreed that the meaningful differences between reporting entities supported measure validity.

3. Feasibility: 6-H; 15-M; 1-L; 0-I

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The developer stated the measure would be monitored through Current Procedural Terminology (CPT) codes, End Stage Renal Disease diagnosis codes (International Classification of Diseases (ICD)-9 and 10) and G-codes for hemodialysis. The Committee inquired into the possible use of CROWNWeb in this measure. The developer stated the measure is specified and tested in a way in which it could be used by CROWNWeb. While they are not certain there is currently a field that would capture the vascular surgeon evaluation aspect of the measure, a field can be added into CROWNWeb if it is deemed appropriate. Committee members supported this conclusion.
- The developer pointed out an additional change incorporated into the measure since endorsement was the inclusion of G-codes to help capture the evaluation component more clearly. Several committee members noted that they had not encountered G-codes during their work and thus had concerns about its use in this measure. The developer clarified that G-codes were just one of many ways the data could be collected; CPT and ICD 9 and 10 codes can also be used. Overall, the Committee agreed the measure was feasible.

4. Use and Usability: 4-H; 16-M; 0-L; 2-I

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)

Rationale:

- This measure has been endorsed since 2007 and although it is currently not in use, the developer stated there are plans for it to be used in public reporting and payment programs, and also plans for its use in quality improvement with external benchmarking to multiple organizations.

5. Related and Competing Measures

- This measure was identified as potentially related or competing with:
  - NQF #0256 Minimizing Use of Catheters as Chronic Dialysis Access: Percentage of patient months on maintenance hemodialysis during the last hemodialysis treatment of month with a chronic catheter continuously for 90 days or longer prior to the last hemodialysis session.
  - NQF #0257 Maximizing Placement of Arterial Venous Fistula (AVF): Percentage of patient months for patients on maintenance hemodialysis during the last HD treatment of month using an autogenous AV fistula with two needles.
  - NQF #2594 Optimal End Stage Renal Disease (ESRD) Starts: Optimal End Stage Renal Disease (ESRD) Starts is the percentage of new ESRD patients during the measurement period who

0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
experience a planned start of renal replacement therapy by receiving a preemptive kidney transplant, by initiating home dialysis, or by initiating outpatient in-center hemodialysis via arteriovenous fistula or arteriovenous graft. • During the In-Person meeting, the Committee assessed the measures based on the NQF decision logic to identify related and competing measures and determined that 2594 was not related to or competing with 0251, 0256, and 0257. The Committee did determine 0251, 0256 and 0257 were competing measures, however, did not encourage further harmonization at this time. The Committee noted the measures were not incompatible with one another and emphasized the need to not lose some of the value of the individual measures by harmonizing.
Standing Committee Recommendation for Endorsement: 19-Y; 2-N
6. Public and Member Comment • Five commenters were generally in support of this measure.
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

840

0256 Minimizing Use of Catheters as Chronic Dialysis Access
Submission | **Specifications**
Description: Percentage of patient months on maintenance hemodialysis during the last HD treatment of month with a chronic catheter continuously for 90 days or longer prior to the last hemodialysis session. **Numerator Statement**: Number of patient months in the denominator who were continuously using a chronic catheter as hemodialysis access for 90 days or longer prior to the last hemodialysis session during the month. **Denominator Statement**: Adult hemodialysis patients who have had End Stage Renal Disease (ESRD) for greater than 90 days as of the first day of the reporting month. **Exclusions**: Exclusions that are implicit in the denominator definition include pediatric patients (<18 years old), and acute hemodialysis patients (hemodialysis patients who have had ESRD for less than 91 days). There are no additional exclusions for this measure. **Adjustment/Stratification**: No risk adjustment or risk stratification **Level of Analysis:** Facility **Setting of Care:** Dialysis Facility **Type of Measure**: Outcome **Data Source**: Administrative claims, Electronic Clinical Data **Measure Steward**: Centers for Medicare & Medicaid Services (CMS)
STANDING COMMITTEE MEETING [05/06/2015-05/07/2015] **1. Importance to Measure and Report: The measure meets the Importance criteria** *(1a. Evidence, 1b. Performance Gap)* 1a. Evidence: **21-Y; 0-N**; 1b. Performance Gap: **5-H; 17-M; 0-L; 0-I** Rationale: • The developers updated the Committee on continued review of the two paired dialysis access measures, 0256 and 0257. The University of Michigan, on behalf of Center for Medicare and Medicaid Services (CMS), convened a Vascular Access Technical Expert Panel (TEP) that met in late April 2015, shortly before the NQF Renal In-Person meeting, in order to recommend potential revisions to these two measures that would address concerns in the community about unintended consequences of promoting fistula and graft use over catheter use, especially around possible circumstances where facilities should not be penalized for prolonged catheter use. While the general consensus among the TEP members was that chronic

catheter use should continue to be discouraged, the developer was not able to share more details since the deliberations report and recommendations were not finalized at the time of the meeting. The developer does not expect the results to be available to share by the post-meeting call.

- The developer provided data that includes a Kidney Disease Outcomes Quality Initiative (KDOQI) Clinical Practice Guidelines and Clinical Practice Recommendations 2006 Updates and a 2006 TEP review. All related aspects of the guidelines were graded B (moderately strong evidence) except for 2 sections which were graded A (strong evidence). The 2006 TEP was in support of the measure and the Committee agreed there was sufficient evidence to support this measure.
- The developer provided January 2013-December 2013 CROWNWeb performance data indicating that the rate of minimizing catheter use is about 90%.The Committee agreed there is room for improvement.
- Disparities data were provided that imply that there are statistically significant changes in performance scores depending on sex, race, ethnicity, age, and diabetes as primary causes of ESRD. The developer states that in the absence of biological effects explaining these differences, risk adjustment for these factors would potentially mask disparities in care. However, the developer is willing to provide supplementary analyses to allow the Committee to look at variation by socioeconomic status (SES) within the constraints of indicators that are currently available. While the Committee had some concerns about the actual performance and the extent performance could be improved, they concluded there was still room to improve.

2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **4-H; 16-M; 2-L; 0-I**; 2b. Validity: **8-H; 14-M; 0-L; 0-I**

<u>Rationale</u>:

- The developer presented testing at the measure score level using January 2013 – December 2013 CROWNWeb and claims data to calculate the inter-unit reliability (IUR) for the 12 month period to assess the reliability of this measure. The analysis showed an IUR of .078, which is high and suggests 78% of variation in the measure is attributed to between-facility variation.
- The Committee requested clarification on the reliability of comparing claims to CROWNWeb stating the submission provided an absolute difference of three percent. Based on concerns during a workgroup call, the developer re-ran the analysis to compare agreement using Medicare claims and CROWNWeb using more current data. When the data were re-run, the absolute difference went away and produced similar statistically significant kappas.. <u>The developer updated the measure submission to include this updated analysis.</u>
- The Committee noted it was appropriate that pediatric patients were not included in the patient population. The Committee agreed the measure was well-defined and that the testing results suggest this measure is reliable.
- The Committee requested information on how missing data are handled. The developer clarified that patients, for whom data are missing are included in the numerator and would be considered non-compliant.
- Empirical validity testing conducted at the performance measure score level was provided by the developer. The developers utilized Poisson regression models to measure the association between facility level quintiles of performance scores and the standardized mortality ratio (SMR) and standardized hospitalization ratio (SHR) measures. The Committee agreed that with the p-value of less than .0001 for SMR and SHR indicated the measure was valid.

3. Feasibility: 21-H; 1-M; 0-L; 0-I

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

<u>Rationale</u>:

- The measure data is collected from administrative claims and CROWNWeb.
- The Committee inquired as to whether the developer intended to migrate from using both claims and

CROWNWeb to using CROWNWeb solely. They were advised that while CROWNWeb is the preferred data source, it is still fairly new and will need more time in the field before measures can be completely converted to CROWNWeb. At this time, no decision has been confirmed for a migration thus claims are still incorporated into this measure and other similar measures.

- Committee members agreed that the data elements are generated and used by healthcare personnel as part of the care delivery process.

4. Use and Usability: 22-H; 0-M; 0-L; 0-I

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)

Rationale:

- Committee members noted that the measure is publicly reported in Dialysis Facility Compare (DFC) and is used in a payment program, End Stage Renal Disease Quality Incentive Program (ESRD QIP).

5. Related and Competing Measures

- This measure was identified as potentially related or competing with:
  - NQF #0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement: Percentage of end stage renal disease (ESRD) patients aged 18 years and older receiving hemodialysis during the 12-month reporting period and on dialysis >90 days who:

    1. have a functional autogenous AVF (defined as two needles used or a single-needle device [NOT one needle used in a two-needle device]) (computed and reported separately); 2. have a functional AV graft (computed and reported separately); or 3. have a catheter, but have been seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for a functional autogenous AVF or AV graft at least once during the 12-month reporting period (computed and reported separately). + Reporting should be stratified by incident versus prevalent patients, as defined by USRDS.
  - NQF #0257 Maximizing Placement of Arterial Venous Fistula (AVF): Percentage of patient months for patients on maintenance hemodialysis during the last HD treatment of month using an autogenous AV fistula with two needles.
  - NQF #2594 Optimal End Stage Renal Disease (ESRD) Starts: Optimal End Stage Renal Disease (ESRD) Starts is the percentage of new ESRD patients during the measurement period who experience a planned start of renal replacement therapy by receiving a preemptive kidney transplant, by initiating home dialysis or by initiating outpatient in-center hemodialysis via arteriovenous fistula or arteriovenous graft.
- During the In-Person meeting, the Committee assessed the measures based on the NQF Decision Logic to Identify Related and Competing Measures and determined that 2594 was not related to or competing with 0251, 0256, and 0257. The Committee did determine 0251, 0256 and 0257 were competing measures, however, did not encourage further harmonization at this time. The Committee noted the measures were not incompatible with one another and emphasized the need to not lose some of the value of the individual measures by harmonizing.

Standing Committee Recommendation for Endorsement: 22-Y; 0-N

6. Public and Member Comment

- Three commenters were generally in support of the measure.
- One commenter raised concerns around the premise that catheters are clinically appropriate in some populations, and there may be the opportunity to exclude patients in hospice or with short life expectancy from receiving an AVF.
  - Developer Response: Ongoing measure development includes the consideration of refinements to this measure that may mitigate the unintended consequences regarding special populations with limited life expectancy. The current NQF-endorsed vascular access quality measures supported by CMS are linked measures, incentivizing AV fistula use as a positive outcome and

0256 Minimizing Use of Catheters as Chronic Dialysis Access
o prolonged use of tunneled catheter as a negative outcome. These linked measures incorporate the clinical equipoise regarding these access types, effectively creating three categories of outcomes (AV fistula=positive; AV graft= neutral; prolonged use of tunneled catheter= negative). Committee Response: Improving quality measures to accurately identify the clinically appropriate populations for inclusion and exclusion is evolving. There was significant discussion about potential measure revisions from a recently convened vascular access technical panel which may further clarify these efforts. The Committee was charged with evaluating the measures as submitted and while measure revisions may be forthcoming based on the Technical Expert Panel recommendations, the NQF criteria are met with the information provided.
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

841

0257 Maximizing Placement of Arterial Venous Fistula (AVF)
Submission | **Specifications**
Description: Percentage of patient months for patients on maintenance hemodialysis during the last hemodialysis (HD) treatment of month using an autogenous AV fistula with two needles. **Numerator Statement**: Number of patient months in the denominator who were using an autogenous AV fistula with two needles at the last HD treatment of month **Denominator Statement**: For both CROWNWeb and Claims data, the denominator will include all hemodialysis patients who are at least 18 years old and have had End Stage Renal Disease (ESRD) for greater than 90 days as of the first day of the reporting month. **Exclusions**: Exclusions that are implicit in the denominator definition include pediatric patients (<18 years old) and acute hemodialysis patients (hemodialysis patients who have had ESRDS for less than 91 days). There are no additional exclusions for this measure. **Adjustment/Stratification**: No risk adjustment or risk stratification **Level of Analysis:** Facility **Setting of Care:** Dialysis Facility **Type of Measure**: Outcome **Data Source**: Administrative claims, Electronic Clinical Data **Measure Steward**: Centers for Medicare & Medicaid Services (CMS)
STANDING COMMITTEE MEETING [05/06/2015-05/07/2015] **1. Importance to Measure and Report: The measure meets the Importance criteria** *(1a. Evidence, 1b. Performance Gap)* 1a. Evidence: **2-H; 19-M; 0-L; 0-I**; 1b. Performance Gap: **5-H; 17-M; 0-L; 0-I** Rationale: • The developers updated the Committee on continued review of the two paired dialysis access measures, 0256 and 0257. The University of Michigan, on behalf of CMS, convened a Vascular Access Technical Expert Panel (TEP) that met prior to the NQF Renal In-Person meeting in late April 2015 to recommend potential revisions to these two measures. These revisions would address concerns about unintended consequences of promoting fistula and graft use over catheter use, especially around possible circumstances where facilities should not be penalized for prolonged catheter use. While the general consensus among the TEP members was that chronic catheter use should continue to be discouraged, the developer was not able to share more details since the deliberations report and recommendations were not finalized. • The developer provided evidence that includes a Kidney Disease Outcomes Quality Initiative (KDOQI)

Clinical Practice Guidelines and Clinical Practice Recommendations 2006 Updates and a 2006 TEP review. All related aspects of the guidelines were graded B (moderately strong evidence) except for 2 sections which were graded A (strong evidence). The 2006 TEP was in support of the measure and the Committee agreed there was sufficient evidence to support this measure. Updates to the evidence form were made by the developer based on Committee discussion.

- Upon review of the evidence submitted, the Committee noted that the measure is an intermediate outcome measure, which correlates AV fistula use to impact on mortality. The evidence, grade B from KDOCI, supports that AV fistula is the primary choice. The evidence does not explicitly address the complexity of the issue of decision-making related to fistula versus graft as it related to minimizing the pain and suffering of the patient over time. But overall, the Committee agreed there was evidence to support this measure.
- Based on the data provided on measure performance, the Committee recognized a disparity in performance gap, although not large. Similar to the other measure in the pair, the Committee felt that it should be listed as a disparity-sensitive gap.
- CROWNWeb data from 2013 was presented to demonstrate opportunity for improvement. The mean percentage of patient months with AV fistula was 67%; i.e., 67 percent of patients are dialyzing with AV fistulas. The first quartile was 60% and the third quartile was 75%. No national goal rate is stated, but it can be inferred from the bottom quartile that there is room for improvement.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **0-H; 17-M; 1-L; 2-I**; 2b. Validity: **2-H; 12-M; 4-L; 4-I**

Rationale:

- The Committee noted the exclusions were consistent with the paired measure, there was no risk adjustment and there seemed to be meaningful difference in terms of quality by looking at fistulas and catheters.
- They further noted that the testing provided indicated inter-unit agreement of 0.76 CROWNWeb versus claims with a kappa of .91 for fistula use. During the In-Person meeting, the UM KECC team indicated they had conducted additional, updated analysis on correlation between claims and CROWNWeb; the Committee asked to see this additional data. The updated data were shared with the Committee and measure submission forms updated to reflect the additional analysis.
- In terms of validity, testing was done at the performance measure level with analysis run to calculate association between facility level quintiles of performance scores with the standardized mortality ratio (SMR) and standardized hospitalization ratio (SHR) measures. Results indicate the percent of patients dialyzing with an AV fistula was significantly associated with both the SMR and SHR.
- As with the catheter measure, the developer was asked if they had done any additional analysis. They confirmed the recalculation of the fistula measure using Medicare claims, calendar year 2013, as well as CROWNWeb data, calendar year 2013. The agreement for the fistula measure in both sources was statistically significant with a kappa of .92 and the correlation between the data sources was .869.
- The developer updated the measure description, numerator statement, numerator details, and calculation algorithm to remove reference to fistula with "two needles" to reflect Committee comments.
- Overall, the Committee agreed the developer provided data indicated the measure was reliable and valid.

3. Feasibility: 14-H; 8-M; 0-L; 0-I

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The measure is routinely generated via CROWNWeb and Medicare forms so the consensus was that there essentially were no concerns with the feasibility of this measure.

4. Use and Usability: 5-H; 10-M; 4-L; 4-I

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b.

0257 Maximizing Placement of Arterial Venous Fistula (AVF)

Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)

Rationale:

- Committee members noted that the measure is publicly reported in Dialysis Facility Compare (DFC) and is used in a payment program, End Stage Renal Disease Quality Incentive Program (ESRD QIP).
- The developer reports use of fistula increased from 66.8% in January 2013 to 67.9% in December 2013.
- The Committee discussed the possibility of unintended consequences of only measuring fistula rates, however, concluded that this is a factor to consider during development and is not something that can be resolved by the Committee at this time.

5. Related and Competing Measures

- This measure was identified as potentially related or competing with:
  - NQF #0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement: Percentage of end stage renal disease (ESRD) patients aged 18 years and older receiving hemodialysis during the 12-month reporting period and on dialysis >90 days who 1. have a functional autogenous AVF (defined as two needles used or a single-needle device [NOT one needle used in a two-needle device]) (computed and reported separately); 2. have a functional AV graft (computed and reported separately); or 3. have a catheter, but have been seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for a functional autogenous AVF or AV graft at least once during the 12-month reporting period (computed and reported separately). + Reporting should be stratified by incident versus prevalent patients, as defined by USRDS.
  - NQF #0256 Minimizing Use of Catheters as Chronic Dialysis Access: Percentage of patient months on maintenance hemodialysis during the last hemodialysis (HD) treatment of month with a chronic catheter continuously for 90 days or longer prior to the last hemodialysis session.
  - NQF #2594 Optimal End Stage Renal Disease (ESRD) Starts: Optimal End Stage Renal Disease (ESRD) Starts is the percentage of new ESRD patients during the measurement period who experience a planned start of renal replacement therapy by receiving a preemptive kidney transplant, by initiating home dialysis or by initiating outpatient in-center hemodialysis via arteriovenous fistula or arteriovenous graft.
- During the In-Person meeting, the Committee assessed the measures based on the NQF Decision Logic to Identify Related and Competing Measures and determined that 2594 was not related to or competing with 0251, 0256, and 0257. The Committee did determine 0251, 0256 and 0257 were competing measures, however, did not encourage further harmonization at this time. The Committee noted the measures were not incompatible with one another and emphasized the need to not lose some of the value of the individual measures by harmonizing.

Standing Committee Recommendation for Endorsement: 17-Y; 5-N

Rationale

- The Committee voiced various concerns about this measure and had some level of discomfort in recommending endorsement without the knowledge of future revisions as an outcome of the TEP. However, the decision was to vote on the measure as presented and allow staff to work with the developer to ensure appropriate monitoring of revisions and need to bring a revised measure back in the future.

6. Public and Member Comment

- Four commenters were generally in support of the measure.
- Two commenter raised concerns around the premise that catheters are clinically appropriate in some populations, and there may be the opportunity to exclude patients in hospice or with short life expectancy from receiving an AVF.
  - Developer Response: Ongoing measure development includes the consideration of refinements to this measure that may mitigate the unintended consequences regarding special populations with limited life expectancy. The current NQF-endorsed vascular access quality measures

0257 Maximizing Placement of Arterial Venous Fistula (AVF)
o supported by CMS are linked measures, incentivizing AV fistula use as a positive outcome and prolonged use of tunneled catheter as a negative outcome. These linked measures incorporate the clinical equipoise regarding these access types, effectively creating three categories of outcomes (AV fistula=positive; AV graft= neutral; prolonged use of tunneled catheter= negative). o Committee Response: Improving quality measures to accurately identify the clinically appropriate populations for inclusion and exclusion is evolving. There was significant discussion about potential measure revisions from a recently convened vascular access technical panel which may further clarify these efforts. The Committee was charged with evaluating the measures as submitted and while measure revisions may be forthcoming based on the Technical Expert Panel recommendations, the NQF criteria are met with the information provided.
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

842

0318 Delivered Dose of Peritoneal Dialysis Above Minimum
Submission | **Specifications**
Description: Percentage of all patient months for patients = 18 whose delivered peritoneal dialysis dose was a weekly Kt/Urea of between spKt/V >= 1.7 and spKt/V =< 8.5. (dialytic + residual) **Numerator Statement**: Number of patient months in the denominator whose delivered peritoneal dialysis was a weekly Kt/Urea of between spKt/V >= 1.7 and spKt/V =< 8.5 (dialytic + residual) **Denominator Statement**: To be included in the denominator for a particular month the patient must have had ESRD for greater than 90 days, must be >=18 years old, and must be assigned to that facility for the entire month. **Exclusions**: Exclusions that are implicit in the denominator definition include 1) pediatric patients (<18 years old) 2) all patients who have had End Stage Renal Disease (ESRD) for <91 days, and 3) patients who have not been in the facility for the entire month. There are no additional exclusions for this measure. **Adjustment/Stratification**: No risk adjustment or risk stratification **Level of Analysis:** Facility **Setting of Care:** Dialysis Facility **Type of Measure**: Outcome **Data Source**: Administrative claims, Electronic Clinical Data **Measure Steward**: Centers for Medicare & Medicaid Services (CMS)
STANDING COMMITTEE MEETING [05/06/2015-05/07/2015] **1. Importance to Measure and Report: The measure meets the Importance criteria** *(1a. Evidence, 1b. Performance Gap)* 1a. Evidence: **3-H; 20-M; 0-L; 0-I**; 1b. Performance Gap: **4-H; 16-M; 1-L; 1-I** Rationale: • The developer presented clinical guidelines for peritoneal dialysis adequacy (Kidney Disease Outcomes Quality Initiative (KDOQI) Clinical Practice Guidelines and Clinical Practice Recommendations 2006 Updates). The guidelines were rated as Grade B. Committee members noted that the evidence supports the lower boundary (spKt/V >= 1.7), but no evidence was presented for the upper bound (spKt/V <= 8.5). The developer clarified that the upper bounds were included in the specifications as an administrative means of ensuring that the data integrity was maintained, and to be transparent with how the measure is calculated. The majority of committee members voted evidence as medium or high with the stipulation

that the upper bound be removed.

- The developer indicated that analysis using CROWNWeb and Medicare claims data from January to December 2013 indicate the mean percentage of patients with peritoneal adequacy measurements that achieved the target at least once in four months was 78.6% (SD=17.3%). These results indicate that on average, facilities are meeting the Kt/Vurea guidelines in 79% peritoneal dialysis patients. The sample size included 45,554 peritoneal dialysis patients at 1,528 facilities with at least 11 peritoneal dialysis patients.
- The developer presented data on disparities; the Committee agreed that the test results appear to be statistically significant, but do not appear to be clinically significant.

2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **3-H; 17-M; 1-L; 0-I**; 2b. Validity: **1-H; 17-M; 3-L; 0-I**

<u>Rationale</u>:

- Committee members questioned how a facility would be assessed when patients do not have a spKt/V measured within the four month period. The developer responded that the missing measurement would be counted against the facility; as the intent of the measure is to report and meet a minimum threshold.
- The developer presented January 2013 – December 2013 claims data used to calculate the inter-unit reliability (IUR) for the twelve month period to assess the reliability of this measure; 1528 facilities and 45,554 peritoneal dialysis patients were included in the analysis. The IUR of 0.911 is high and suggests 91% of variation in the measure is attributed to between-facility variation. The confidence interval is (0.905, 0.917). The Committee agreed that the reliability data presented was sufficient.
- Validity was assessed by calculating the Spearman correlation between this measure and the 2013 standardized mortality ratio (SMR) and standardized hospitalization ratio (SHR). The Spearman correlation between this measure and the 2013 standardized mortality ratio as measured by the NQF endorsed SMR (NQF 0369) for the same facility is -0.008 (p-value=0.7744). The Spearman correlation between this measure and the 2013 standardized hospitalization ratio as measured by the 2013 SHR (NQF 1463) is -0.139 (p-value <0.0001).
- The developer reports that the Spearman correlation estimates indicate higher facility level percentages of patients at the facility that achieve the Kt/V target is associated with lower standardized hospitalization, respectively, although the magnitude of the association is low. A very weak association between facility level percentages of patients achieving the Kt/V target and lower standardized mortality was observed and in the expected direction; however, the correlation coefficient was not statistically significant.

3. Feasibility: 14-H; 8-M; 0-L; 0-I

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

<u>Rationale</u>:

- The data source for this measure is CROWNWeb. If a patient's data are missing in CROWNWeb, Medicare claims are used. The Committee agreed that the data are collected and used by healthcare personnel during provision of care and they had no concerns with feasibility.

4. Use and Usability: 16-H; 6-M; 0-L; 0-I

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)

<u>Rationale</u>:

- The developer described two current uses of the measure for public reporting and payment programs. The Committee did not have any concerns with usability and use of this measure.

5. Related and Competing Measures

- This measure was identified as potentially related or competing with:
  - NQF# 0321 Peritoneal Dialysis Adequacy: Solute: Percentage of patients aged 18 years and older with a diagnosis of End Stage Renal Disease ESRD receiving peritoneal dialysis who have a total

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Kt/V >= 1.7 per week measured once every 4 months o NQF #2704 Minimum Delivered Peritoneal Dialysis Dose: Percentage of all patient months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual) o NQF #2706 Pediatric Peritoneal Dialysis Adequacy-Achievement of Target Kt V: Percent of pediatric peritoneal dialysis patient-months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V = 1.8 and spKt/V< 8.5. (dialytic + residual) o NQF#2705 Delivered Dose of Dialysis Above Minimum: Percentage of all patient months for patients whose average delivered dose of dialysis (either hemodialysis or peritoneal dialysis) met the specified threshold during the reporting period. • The Committee was unable to discuss related and competing measures during the in-person meeting and had the opportunity to do so during the post-comment call. NQF #2705 was not recommended by the Committee so that measure was not included in the discussion. The Committee concluded that the remaining measures were related but not competing. The Committee recommended and the developers agreed to work together to harmonize these measures where possible.
Standing Committee Recommendation for Endorsement: 22-Y; 0-N
6. Public and Member Comment • Three commenters were generally in support of the measure. Two of these measures requested confirmation that requested changes by the Committee had been made. o Developer Response: Based on the discussion that took place at the NQF Standing Committee meeting, CMS has made the following revisions to the measure submission: ▪ The upper threshold for spKt/V values has been removed from the specifications ▪ The specifications were edited to provide more clear descriptions of the numerator, denominator, exclusions, and calculation algorithm. These calculation clarifications are not material changes with respect to the documentation that the Committee reviewed in May. ▪ The evidence form was revised to include the abstracts for the pieces of evidence listed in 1a.8.2. o Committee Response: Requested changes have been made and the Standing Committee stands by its original recommendation
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

843

0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute
Submission | **Specifications**
Description: Percentage of patients aged 18 years and older with a diagnosis of End Stage Renal Disease (ESRD) receiving peritoneal dialysis who have a total Kt/V >= 1.7 per week measured once every 4 months **Numerator Statement**: Patients who have a total Kt/V >= 1.7 per week measured once every 4 months **Denominator Statement**: All patients aged 18 years and older with a diagnosis of ESRD receiving peritoneal dialysis **Exclusions**: There are no denominator exceptions for this measure. **Adjustment/Stratification**: No risk adjustment or risk stratification **Level of Analysis:** Clinician : Group/Practice, Clinician : Individual, Clinician : Team **Setting of Care:** Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other (Domiciliary, Rest Home, or Custodial Care Services) **Type of Measure**: Outcome

0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute

Data Source: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry

Measure Steward: Renal Physicians Association (RPA)

STANDING COMMITTEE MEETING [05/06/2015-05/07/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **11-H; 11-M; 0-L; 0-I**; 1b. Performance Gap: **4-H; 16-M; 1-L; 1-I**

Rationale:

- The evidence presented for this intermediate clinical outcome measure is based on the Kidney Disease Outcomes Quality Initiative (KDOQI) Clinical Practice Guidelines and Clinical Practice Recommendations, 2006 Updates: Hemodialysis Adequacy, Peritoneal Dialysis Adequacy and Vascular Access that are rated as Grade B. The guidelines state that for a patient with residual kidney function, the minimal delivered dose of total small solute clearance should be the total peritoneal and kidney Kt/Vurea of at least 1.7 per week. For patients without residual kidney function, the minimal delivered dose of total small solute clearance should be a peritoneal Kt/V urea of at least 1.7 per week measured within the first month after starting dialysis therapy and at least once every four months thereafter. Committee members agreed that there was sufficient evidence presented.
- The developers clarified that per the last United States Renal Data System (USRDS) annual data report, this metric is being met by 87% of patients. Committee members had concerns that this was older data, was not physician or clinician level data, and that more information could be provided. Members questioned if there is room for improvement, however it was noted that there could be a greater gap in care due to the fact that disparities data were not presented. Overall, the Committee agreed there was opportunity for improvement.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **2-H; 16-M; 4-L; 0-I**; 2b. Validity: **5-H; 16-M; 1-L; 0-I**

Rationale:

- Critical data element testing was performed at the individual physician/group practice level. Data abstracted from patient records were used to calculate inter-rater reliability for the measure, and analysis included percent agreement of 99.74% and Kappa statistic of 0.00 with a 95% confidence interval of (-1.93,1.93) to adjust for chance agreement. The Committee agreed that the results presented demonstrate sufficient reliability.
- The Committee recommended that it would be helpful to have clarity on how long the residual kidney function is allowed to carry forward, that perhaps at four months it drops if it hasn't been repeated for the total Kt/V calculation. The developer confirmed residual function is measured every 4 months along with the calculation of Kt/V.
- Members also noted that they would like to see more data on a minimum sample size and whether or not having a minimum number of eleven patients (similar to the facility level measures) could make the measure more meaningful.
- Validity was assessed at the measure score level by expert panel evaluation. Face validity of the measure score as an indicator of quality was consistent. Committee members agreed that the results presented demonstrate sufficient validity.

3. Feasibility: 6-H; 15-M; 1-L; 0-I

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The data for this measure are from administrative claims, clinical database/registry, and abstracted from electronic health record. The required data elements are routinely generated as part of patient care.

0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute
Committee members agreed that collection of this data is feasible.
4. Use and Usability: 15-H; 7-M; 0-L; 0-I *(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)* Rationale: • The developer described three current uses of the measure for public reporting, payment and quality improvement programs (e.g., Physician Quality Reporting System (PQRS), Physician Compare, and Renal Physician Association (RPA) Internal Quality Improvement initiatives). No unintended consequences were identified. The Committee did not have concerns with usability and use of this measure.
5. Related and Competing Measures • This measure was identified as potentially related or competing with: o NQF# 0318 Peritoneal Dialysis Adequacy – Delivered Dose of Peritoneal Dialysis Above Minimum: Percentage of all patient months for patients = 18 whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 and spKt/V =< 8.5. (dialytic + residual) o NQF #2704 Minimum Delivered Peritoneal Dialysis Dose: Percentage of all patient months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual) o NQF #2706 Pediatric Peritoneal Dialysis Adequacy-Achievement of Target Kt V: Percent of pediatric peritoneal dialysis patient-months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V = 1.8 and spKt/V< 8.5. (dialytic + residual) o NQF#2705 Delivered Dose of Dialysis Above Minimum: Percentage of all patient months for patients whose average delivered dose of dialysis (either hemodialysis or peritoneal dialysis) met the specified threshold during the reporting period. • The Committee was unable to discuss related and competing measures during the in-person meeting and had the opportunity to do so during the post-comment call. NQF #2705 was not recommended by the Committee so that measure was not included in the discussion. The Committee concluded that the remaining measures were related but not competing. The Committee recommended and the developers agreed to work together to harmonize these measures where possible.
Standing Committee Recommendation for Endorsement: 21-Y; 1-N
6. Public and Member Comment • Five commenters were generally in support of this measure.
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

844

1423 Minimum spKt/V for Pediatric Hemodialysis Patients
Submission | Specifications
Description: Percentage of patient months for all pediatric (<18 years old) in-center HD patients who have been on hemodialysis for more than 90 days and dialyzing 3 or 4 times weekly whose average delivered dose of hemodialysis using the UKM or Daugirdas II formula) was between spKt/V = 1.2 and spKt/V<5.0. **Numerator Statement**: Number of patient months for patients in the denominator whose delivered dose of hemodialysis (calculated from the last measurement of the month (using the UKM or Daugirdas II formula) was between a spKt/V >= 1.2 and spKt/V =<5.0. **Denominator Statement**: To be included in the denominator for particular month, a patient must have been <18 years old, have had ESRD for greater than 90 days, dialyzing 3 or 4 times weekly, and must be assigned to that facility for the entire month.

1423 Minimum spKt/V for Pediatric Hemodialysis Patients

Exclusions: Exclusions that are implicit in the denominator definition include
1) patients on home hemodialysis,
2) patients on ESRD less than 91 days
3) patients receiving dialysis less than 3x/week or greater than 4x/week and
4) patients who have not been in the facility for the entire reporting month
There are no additional exclusions for this measure.
Adjustment/Stratification: No risk adjustment or risk stratification
Level of Analysis: Facility
Setting of Care: Dialysis Facility
Type of Measure: Outcome
Data Source: Administrative claims, Electronic Clinical Data
Measure Steward: Centers for Medicare & Medicaid Services (CMS)

STANDING COMMITTEE MEETING [05/06/2015-05/07/2015]

1. Importance to Measure and Report: Consensus not reached on the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **0-H; 9-M; 11-L; 3-I**; Insufficient Evidence with Exception: **14-Y; 9-N**; 1b. Performance Gap: **1-H; 17-M; 2-L; 2-I**

Rationale:

- One clinical practice guideline (Clinical Practice Guidelines for Hemodialysis Adequacy: Kidney Disease Outcomes Quality Initiative (KDOQI) Guideline 8. Pediatric Hemodialysis Prescription and Adequacy: 2006) and a systemic review of literature by a technical expert panel (TEP) are referenced. The KDOQI guideline was graded as A (strong evidence).
- The developer clarified that the specifications are for patients dialyzing three or four times a week whose average delivered dose of hemodialysis using urea kinetic modelling (UKM) or Daugirdas II are a single pool Kt/V of 1.2. The rationale is to ensure that children who are dialyzing four times a week would still be evaluated for adequate dialysis.
- The Committee noted that as in many pediatric measures, there is not much evidence for the pediatric population. The measure is based on adult data with the assumption that children should be doing at least as well as adults do, and the Committee noted that is a reasonable position to take. The referenced literature indicates some need for a higher dose of dialysis for children with respect to growth and development. Committee members questioned the evidence for a rationale for an upper limit (spKt/V<5).
- Committee members raised concerns about the measure as constructed and that using a single pool Kt/V in patients dialyzed at different frequencies is the wrong tool. The UKM or Daugirdas formulas are designed for a fixed number of dialysis treatments a week, not "three or four". For a variable number of treatments a method such as weekly standard Kt/V must be used. Committee members noted that when looking at varying frequencies of dialysis, rather than using a single pool Kt/V, the tool that should be used is a continuous tool, like the standard Kt/V. Some Committee members also raised concerns that setting a minimum of 1.2 Kt/V, with whatever frequency, could be a disincentive to put patients on increasing frequency of dialysis because that would not change their Kt/V. The incentive would be to increase time during single sessions instead of more frequent dialysis, and that is not as efficient a treatment as increasing the frequency would be.
- The developer noted that analysis using CROWNWeb and Medicare claims data from January to December 2013 indicate a mean score of 85.6% (13.0. The sample size included 180 hemodialysis patients and 1,195 patient months in facilities with at least 11 eligible pediatric patients.
- The Committee did not reach consensus on the exception to evidence criterion. The major concerns were the evidence supporting three times and not four times per week. Only a small number of patients require dialysis more than three times per week and this is a very important measure for pediatricians.

2. Scientific Acceptability of Measure Properties: Consensus not reached on the Scientific Acceptability criteria

1423 Minimum spKt/V for Pediatric Hemodialysis Patients

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **1-H; 11-M; 7-L; 2-I**; Second vote: **0-H; 11-M; 11-L; 1-I**; 2b. Validity: **0-H; 18-M; 4-L; 1-I**

Rationale:

- The developer used CROWNWeb and Medicare claims data from January 2013 – December 2013 to calculate the inter-unit reliability (IUR) for the 12 month period to assess the reliability of this measure. The IUR is 0.812 with the confidence interval being (0.633, 0.931). This suggests that 81% of variation in the measure is attributed to between facility variance.
- The Committee did not reach consensus while voting on reliability. There were concerns with specifications. Members noted that the distinction in the Daugirdas II method and the UKM are fundamentally different and would yield differing inter-unit and inter-organizational variation. One member noted that the lack of specificity in the blood drawing techniques and the timing within a dialysis week all impact the result of the tests.
- Validity was assessed at the measure score level and was established on the basis of face validity. Clinical technical expert panel members agreed that this measure will improve quality of care for pediatric hemodialysis patients.

3. Feasibility: 14-H; 8-M; 1-L; 0-I

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The primary data source for this measure is administrative claims and electronic clinical data through CROWNWeb. All data elements are in defined fields in a combination of electronic sources. The Committee had no major concerns with feasibility.

4. Use and Usability: 17-H; 6-M; 0-L; 0-I

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)

Rationale:

- The measure is currently publicly reported in Dialysis Facility Compare and the End Stage Renal Disease Quality Incentive Program (ESRD QID) payment program. All Medicare-certified facilities that are eligible for the measure, and have at least 11 patients are considered accountable entities for QIP. The Committee had no major concerns with use and usability.

5. Related and Competing Measures

- This measure was identified as potentially related or competing with:
    - NQF# 0249 Hemodialysis Adequacy Clinical Performance Measure III-Hemodialysis Adequacy--HD Adequacy--Minimum Delivered: Percentage of all adult (>=18 years old) patients in the sample for analysis who have been on hemodialysis for 90 days or more and dialyzing thrice weekly whose average delivered dose of hemodialysis (calculated from the last measurements of the month using the UKM or Daugirdas II formula) was a spKt/V >= 1.2 during the study period.
    - NQF# 0323 Adult Kidney Disease-Hemodialysis Adequacy-Solute: Percentage of calendar months within a 12-month period during which patients aged 18 years or older with a diagnosis of End Stage Renal Disease (ESRD) receiving hemodialysis three times a week for >= 90 days have a spKt/V >= 1.2
    - NQF #2703 Minimum Delivered Hemodialysis Dose: Percentage of all patient months for patients whose average delivered dose of hemodialysis using the UKM or Daugirdas II formula) was between spKt/V >= 1.2 and spKt/V =< 5.0
    - NQF#2705 Delivered Dose of Dialysis Above Minimum: Percentage of all patient months for patients whose average delivered dose of dialysis (either hemodialysis or peritoneal dialysis) met the specified threshold during the reporting period.
- The Committee was unable to discuss related and competing measures during the in-person meeting and had the opportunity to do so during the post-comment call. NQF #2703 and NQF #2705 were not

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recommended by the Committee, so those measures were included in the discussion. The Committee concluded that the remaining measures were related but not competing. The Committee recommended and the developers agreed to work together to harmonize these measures where possible.
Standing Committee Recommendation for Endorsement: In-Person: 10-Y; 13-N; Post-Comment Call: 20-Y; 0-N Based on the updates provided by the developer during the July 30 post-comment call, the Committee was able to reach consensus on this measure and recommended it for endorsement.
6. Public and Member Comment • Two commenters supported the endorsement of this measure with the condition that the upper limit be removed. o Developer Response: The measure has been revised in response to concerns from the NQF Standing Committee regarding the appropriateness of single pool Kt/V for measuring Kt/V in patients who are dialyzing 3 or 4 times per week. The 2010 Technical Expert Panel members that recommended the original measure were contacted and asked to consider a revision to limit the measure to pediatric patients on three times a week dialysis. A majority of the TEP members supported this revision. Further information about the decision to revise the measure is provided in 2b2 (Validity Testing). The upper threshold for spKt/V values has been removed from the specifications. The specifications were edited to provide more clear descriptions of the numerator, denominator, exclusions, and calculation algorithm. These calculation clarifications are not material changes with respect to the documentation that the Committee reviewed in May.
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

845

1424 Monthly Hemoglobin Measurement for Pediatric Patients
Submission | Specifications
Description: Percentage of patient months of pediatric (less than 18 years) in-center hemodialysis, home hemodialysis, and peritoneal dialysis patients who have monthly measures for hemoglobin during the reporting period. **Numerator Statement**: Number of patient months of pediatric (less than 18 years old) in-center hemodialysis, home hemodialysis, and peritoneal dialysis patients with a measurement of hemoglobin during the reporting period. The hemoglobin value reported for the end of each reporting month (end-of-month hemoglobin) is used for the calculation. **Denominator Statement**: All patient months for pediatric (less than 18 years old) in-center hemodialysis, home hemodialysis, and peritoneal dialysis patients under the care of the dialysis facility for the entire reporting month. **Exclusions**: Exclusions that are implicit in the denominator definition include all patients >=18 years and those who have not been in the facility the entire reporting month (transient patients). There are no additional exclusions for this measure. **Adjustment/Stratification**: No risk adjustment or risk stratification **Level of Analysis:** Facility **Setting of Care:** Dialysis Facility **Type of Measure**: Process **Data Source**: Electronic Clinical Data **Measure Steward**: Centers for Medicare & Medicaid Services (CMS)
STANDING COMMITTEE MEETING [05/06/2015-05/07/2015] **1. Importance to Measure and Report: The measure meets the Importance criteria**

1424 Monthly Hemoglobin Measurement for Pediatric Patients

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **3-H; 19-M; 1-L; 0-I**; 1b. Performance Gap: **2-H; 18-M; 1-L; 0-I**

Rationale:

- For this process measure, the developer provided data that includes a Kidney Disease Outcomes Quality Initiative (KDOQI) clinical guideline and a systematic review of literature. The recommendation is defined as "expert opinion", based on TEP consensus thus was not graded. In addition, the Committee noted a systematic review summary that was supportive of the measure.
- The developer provided 2013 CROWNWeb clinical data (January 2013-December 2013). With a mean performance score of 75%, the Committee acknowledged there was a performance gap.
- The developer indicated, and the Committee agreed, that the sample size used to determine performance scores was too small to display useful disparities data.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **0-H; 22-M; 1-L; 0-I**; 2b. Validity: **0-H; 22-M; 1-L; 0-I**

Rationale:

- Reliability was assessed at the performance measure score by calculating facility-level Pearson correlation coefficients between the current performance month and the preceding month for reporting months during January 2013 – December 2013 at 59 facilities. The Pearson correlation coefficients of each pair of the current and the preceding months ranged from 0.78 to 0.98. All were statistically significant with a p-value less than 0.0001.
- While the Committee expressed some concerns over the small sample size for pediatric practices and CROWNweb data transmission issues described in more detail in the overarching issues section of this report, the Committee concluded that overall this measure was reliable.
- The developer used January 2013 – December 2013 CROWNWeb data to calculate facility level monthly and annual performance scores. Fifty-nine facilities that had at least 11 eligible patients were included in the testing and analysis; a total of 1,280 patients were included. They computed the Spearman correlation to assess the association between the annual performance scores and the NQF endorsed (0369) standardized mortality ratio (SMR) using the 2013 SMR.
- Spearman correlation coefficient was -0.20, p=0.13. The developer notes this suggests that facilities with a higher percentage of pediatric patients (calculated as patient months) with hemoglobin measured is associated with a lower risk of mortality relative to facilities with a lower percentage of pediatric patients with hemoglobin measured. The result is however not statistically significant.
- This measure is being maintained on the basis of face validity. The measurement of hemoglobin as a dialysis quality measure was initially developed and approved by a Clinical Technical Expert Panel (TEP), which agreed that this quality measure is important in the assessment of the quality of care for pediatric dialysis patients. The Committee agreed that the results indicate sufficient face validity.

3. Feasibility: 14-H; 7-M; 1-L; 0-I

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The measure data is collected from CROWNWeb. Committee members agreed that the data elements are generated and used by healthcare personnel as part of the care delivery process.

4. Use and Usability: 2-H; 17-M; 1-L; 3-I

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)

Rationale:

- The Committee voiced concern that the measure is currently not in use in a public program despite being endorsed since 2011. The developer clarified that, while the Center for Medicare and Medicaid Services

1424 Monthly Hemoglobin Measurement for Pediatric Patients
(CMS) is not currently using the measure and is still considering possible future use, the measure is available for public use and community healthcare networks among other groups are using the measure to collect data for internal quality improvement purposes. • The Committee agreed the benefits of the measure outweigh any possible unintended consequences.
5. Related and Competing Measures • This measure was identified as potentially related or competing with: o NQF #1667 ESRD Patients Receiving Dialysis: Hemoglobin Level <10g/dL: Percentage of calendar months within a 12-month period during which patients aged 18 years and older with a diagnosis of ESRD who are receiving hemodialysis or peritoneal dialysis have a Hemoglobin level <10g/dL • The Committee concluded the measures were not related or competing and should not be harmonized.
Standing Committee Recommendation for Endorsement: 22-Y; 1-N
6. Public and Member Comment • Three commenters were generally in support of this measure.
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

846

1425 Measurement of nPCR for Pediatric Hemodialysis Patients
Submission | **Specifications**
Description: 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. **Numerator Statement**: Number of patient months in the denominator with monthly nPCR measurements. **Denominator Statement**: Number of all patient months for pediatric (less than 18 years old) in-center hemodialysis patients (irrespective of frequency of dialysis). **Exclusions**: 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. **Adjustment/Stratification**: No risk adjustment or risk stratification **Level of Analysis:** Facility **Setting of Care:** Dialysis Facility **Type of Measure**: Process **Data Source**: Electronic Clinical Data **Measure Steward**: Centers for Medicare & Medicaid Services (CMS)
STANDING COMMITTEE MEETING [05/06/2015-05/07/2015] **1. Importance to Measure and Report: The measure meets the Importance criteria** *(1a. Evidence, 1b. Performance Gap)* 1a. Evidence: **2-H; 16-M; 0-L; 1-I**; 1b. Performance Gap: **2-H; 17-M; 0-L; 0-I** Rationale: • For this process measure, evidence provided by the developer included two Kidney Disease Outcomes Quality Initiative (KDOQI) clinical guidelines and a 2014 literature review. KDOQI Clinical Practice Guidelines and Clinical Practice Recommendations, 2006 Updates: Hemodialysis Adequacy, Peritoneal Dialysis Adequacy and Vascular Access: Guideline 8.2.2 was graded as moderately strong evidence (Grade B) and the 2008 KDOQI Clinical Practice Guideline Update for Nutrition in Children with CKD Guideline 1.1 was graded as strong evidence (Grade A). The literature review was supportive of the measure as well. • While the Committee acknowledged that the evidence and performance gap data were based on the

1425 Measurement of nPCR for Pediatric Hemodialysis Patients
adult population, they concluded the evidence and performance gap could be inferred to support a measure of the pediatric population. • The developer provided 2013 CROWNWeb clinical data (January 2013-December 2013). With a mean performance score of 80.4%, the Committee acknowledged there was a performance gap. • The developer indicated, and the Committee agreed, that the sample size used to determine performance scores was too small to display useful disparities data.
2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u> *(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)* 2a. Reliability: **2-H; 17-M; 0-L; 0-I**; 2b. Validity: **0-H; 19-M; 0-L; 0-I** <u>Rationale</u>: • Inter-unit reliability (IUR) was calculated using January 2013 – December 2013 CROWNWeb data from a sample of 455 Medicare and non-Medicare pediatric, In-Center Hemodialysis (ICH) patients in 225 facilities. The Committee agreed the overall IUR of 0.985, indicating that 98.5% of the variation in the measure can be attributed to the between-facility differences, suggests the measure is reliable. • Validity testing was conducted at the measure score level. Face validity was ascertained through review and input from a technical expert panel (TEP). In addition, the developer proved testing data that demonstrated that facilities with at least 11 eligible pediatric patients with 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. The Committee agreed with the TEP that the measure was statistically significant with a p-value of 0.02.
3. Feasibility: 15-H; 4-M; 0-L; 0-I *(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)* <u>Rationale</u>: • The measure data is collected from CROWNWeb. Committee members agreed that the data elements are generated and used by healthcare personnel as part of the care delivery process.
4. Use and Usability: 4-H; 15-M; 0-L; 0-I *(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)* <u>Rationale</u>: • The Committee voiced concern that the measure is currently not in use in a public program despite receiving time limited endorsement in 2011 and receiving full endorsement in 2014. The developer clarified that, while the Center for Medicaid and Medicare (CMS) is not currently using the measure and is still considering possible future use, the measure is available for public use and community healthcare networks, among other groups, are using the measure to collect data for internal quality improvement purposes. • The Committee agreed the benefits of the measure outweigh any possible unintended consequences.
5. Related and Competing Measures • No related or competing measures noted.
Standing Committee Recommendation for Endorsement: 19-Y; 0-N
6. Public and Member Comment • <u>Four commenters were generally supported the measure.</u>
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

847

1460 Bloodstream Infection in Hemodialysis Outpatients

Submission | Specifications

Description: ~~Adjusted ranking metric (ARM) and~~ Standardized Infection Ratio (SIR) of Bloodstream Infections (BSI) will be calculated among patients receiving hemodialysis at outpatient hemodialysis centers.

Numerator Statement: The number of new positive blood culture events based on blood cultures drawn as an outpatient or within 1 calendar day after a hospital admission. A positive blood culture is considered a new event and counted only if it occurred 21 days or more after a previous positive blood culture in the same patient.

Denominator Statement: Number of maintenance hemodialysis patients treated in the outpatient hemodialysis center on the first 2 working days of the month.

Exclusions: Patients receiving inpatient hemodialysis and home hemodialysis are excluded

Adjustment/Stratification: Statistical risk model

Level of Analysis: Facility, Population : National, Population : Regional, Population : State

Setting of Care: Dialysis Facility

Type of Measure: Outcome

Data Source: Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Imaging/Diagnostic Study, Electronic Clinical Data : Laboratory, Paper Medical Records, Electronic Clinical Data : Pharmacy

Measure Steward: Centers for Disease Control and Prevention (CDC)

STANDING COMMITTEE MEETING [05/06/2015-05/07/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **19-Y; 0-N**; 1b. Performance Gap: **7-H; 14-M; 0-L; 0-I**

Rationale:

- This is a facility-level, endorsed outcome measure that is intended to calculate the ~~n Adjusted Ranking Metric (ARM) and~~ Standardized Infection Ratio (SIR) of bloodstream infections amongst patients who receive hemodialysis in outpatient hemodialysis facilities. The National Health and Safety Network (NHSN) allows facilities to calculate and produce their own reports without separate software.
- The developer provides rationale stating that use of this measure is to assist in identifying outbreaks of bloodstream infections, to stimulate improvements in vascular access care, and to stimulate improvements in other infection control practices that have led to subsequent reductions in bloodstream infections.
- Committee members noted that the evidence provided by the developer states that dialysis-related procedures are the cause of many types of blood stream infections. The Committee also noted that the evidence provided for the SIR is as compelling as it was when the measure was initially endorsed in 2011.
- The developer provided 2006 data for performance gap, however, stated that they are currently looking at data coming out of the End Stage Renal Disease Quality Incentive Program (ESRD QIP). Developers expect to have more information shortly, but could not provide it at the time of the meeting.
- Committee members noted there is still opportunity to improve the SIR component of the measure and there is significant evidence of a gap in care, specifically when looking at the infection rates listed in the Glomerular Filtration Rate (GFR). The Committee also stated that the renal community has not done their job of decreasing blood stream infection rates as hospitals have done, further emphasizing the gap in care.
- Some committee members noted there would be gaps in African-Americans and elderly patients who receive hemodialysis, but questioned the relatively older data and expressed that the developers may have seen changes occur since 2011, when the measure was endorsed. Ultimately, members of the Committee passed the measure on performance gap.

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2. Scientific Acceptability of Measure Properties: The measure does not meet the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **0-H; 4-M; 3-L; 14-I** Reconsideration Reliability: **1-H; 17-M; 0-L; 0-I;** Validity: **2-H; 15-M; 1-L; 0-I**

Rationale:

- Committee members noted the analysis of performance was completed almost a decade ago and that all analyses completed showed a substantial variation in the rates of reported blood stream infections.
- While the SIR component of the measure is well established, and has clear specifications, the ARM portion of the measure was identified as not well specified. Committee members stated it was challenging to evaluate a measure with the level of specificity on methodology provided by the developer and requested updated data.
- Members of the Committee encouraged developers to use a broader standardization methodology rather than using access alone. Overall, committee members did not find the specifications on the methodology proposed for the Adjusted Ranking Metric (ARM) portion of the measure and data provided by the developer to be insufficient and the measure failed at reliability. Based on these comments, the developer removed the ARM aspect of the measure.
- Committee members also expressed concerns about validity being reassessed now that NHSN is available. The developer was encouraged to provide more current data in order to accurate review many aspects of this measure, including reliability and validity.
- During the August 3rd post-comment call, the Committee decided to reconsider this measure and agreed the measure was reliable and valid once the ARM was removed from the measure. It was noted that with this revision, the measure is much more closely aligned to the originally endorsed specification, with the only revision being the addition of SIR.

3. Feasibility: 2-H; 9-M; 7-L; 0-I

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The data for this measure's testing was abstracted from paper records and electronic health records. The ongoing data collection for this measure is reported through the NHSN and available via electronic fields.
- Data are collected or generated and used by healthcare personnel during provision of care.

4. Use and Usability: 5-H; 10-M; 3-L; 0-I

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)

Rationale:

- The Committee noted the measure was currently used for Public Health/Disease Surveillance and public reporting. As of January 2015, approximately 6000 outpatient dialysis facilities are reporting to NHSN.

5. Related and Competing Measures

- No related or competing measures noted.

Standing Committee Recommendation for Endorsement: 18-Y; 1-N

6. Public and Member Comment

- While commenters agreed the tracking of bloodstream infection is extremely important, three commenters expressed concerns about the methodology used especially in regards to the inclusion of the Adjusted Ranking Metric (ARM) and Standardized Infection Ratio (SIR). Three commenters supported the Committee's decision to not endorse this measure. One commenter felt the measure should be endorsed despite methodological concerns.
    - Based on public and Committee comments, the developer removed the adjusted ranking metric (ARM) from the measure. Developer Response: Specifically, mention of the ARM will be removed from "De.3. Brief description of the measure" and description of the ARM calculation will be removed from "S.18. Calculation algorithm/measure logic". The standardized infection ratio (SIR)

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and corresponding calculation of the SIR will remain in the measure. All other elements of the measure and measure specifications will remain unchanged. The sections describing: measure importance, scientific acceptability, usability and use, and related and competing measures will remain unchanged.
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

848

1662 Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy
Submission | **Specifications**
Description: Percentage of patients aged 18 years and older with a diagnosis of CKD (not receiving RRT) and proteinuria who were prescribed ACE inhibitor or ARB therapy within a 12-month period **Numerator Statement**: Patients who were prescribed ACE inhibitor or ARB therapy within a 12-month period *The above list of medications/drug names is based on clinical guidelines and other evidence. The specified drugs were selected based on the strength of evidence for their clinical effectiveness. This list of selected drugs may not be all-inclusive or current. Physicians and other health care professionals should refer to the FDA's web site page entitled "Drug Safety Communications" for up-to-date drug recall and alert information when prescribing medications. Definitions: Prescribed – May include prescription given to the patient for ACE Inhibitor or ARB therapy OR patient already taking ACE Inhibitor or ARB therapy as documented in the current medication list **Denominator Statement**: All patients aged 18 years and older with the diagnosis of CKD (Stages 1-5, not receiving RRT) and proteinuria Definitions: Proteinuria: 1. >300mg of albumin in the urine per 24 hours OR 2. ACR >300 mcg/mg creatinine OR 3. Protein to creatinine ratio > 0.3 mg/mg creatinine RRT (Renal Replacement Therapy)-For the purposes of this measure, RRT includes hemodialysis, peritoneal dialysis, and kidney transplantation **Exclusions**: Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, pregnancy, history of angioedema, cough due to ACE Inhibitor or ARB therapy, allergy to medications, other medical reasons) Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy (patient declined, other patient reasons) **Adjustment/Stratification**: No risk adjustment or risk stratification **Level of Analysis:** Clinician : Group/Practice, Clinician : Individual, Clinician : Team **Setting of Care:** Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other (Domiciliary, Rest Home, or Custodial Care Services) **Type of Measure**: Process **Data Source**: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry, Paper Medical Records**Measure Steward**: Renal Physicians Association (RPA)

1662 Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy

STANDING COMMITTEE MEETING [05/06/2015-05/07/2015]

1. Importance to Measure and Report: <u>The measure meets the Importance criteria</u>

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **1-H; 20-M; 0-L; 0-I**; 1b. Performance Gap: **1-H; 20-M; 0-L; 0-I**

<u>Rationale</u>:

- Developers provided the update of the 2012 Kidney Disease Outcomes Quality Initiative (KDOQI) guidelines as evidence to support the measure in which the developer's Work Group suggests that an angiotensin receptor blocker (ARB) or angiotensin converting enzyme inhibitor (ACE-I) be used in non-diabetic adults with non-dialysis CKD and urine albumin excretion of 30 to 300 mg per 24 hours (or equivalent) in whom treatment with BP-lowering drugs is indicated. This was graded 2D, very low evidence suggested by the Work Group. Also, the Work Group recommends that an ARB or ACE-I be used in non-diabetic adults with CKD ND and urine albumin excretion >300 mg per 24 hours (or equivalent) in whom treatment with BP-lowering drugs is indicated. This was graded 1B, moderate evidence recommended by the Work Group.
- Committee members discussed the adequacy of evidence provided, noting it is applicable to the process of care measured; however, the measure, as specified, is not limited to those with hypertension.
- The developer notes that among CKD patients, the use of ACEIs/ARBs is 56-57%, which is significantly lower than the 71-76% for those identified as having hypertension or diabetes. Among CKD patients with cardiovascular disease, 61% use a lipid lowering agent.
- The developer reports that, based on Center for Medicare and Medicaid Services (CMS) Physician Quality Reporting Initiative (PQRI) (now known as Physician Quality Reporting System (PQRS)) 2008 claims data, there is a gap in care in that 44.9% of patients reported on did not receive the optimal care.
- It is also noted by developers that African-Americans have the highest rate of hypertension-related End Stage Renal Disease (ESRD), exceeding other racial and ethnic groups resulting in hypertension remaining a close second to Diabetes Mellitus (DM) as the leading cause of ESRD in the African-American community.
- It was noted that the majority of patients that would be included in the denominator may not be under a nephrologist's care, thus the gap is perceived to be relatively high.

2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **0-H; 16-M; 4-L; 1-I**; 2b. Validity: **0-H; 20-M; 1-L; 0-I**

<u>Rationale</u>:

- Developers provided data abstracted from patient records in 2008 that were used to calculate an inter-rater reliability of the measure. This analysis included a 93.15% agreement and kappa statistic of 0.8047 with the 95% confidence interval between 0.6395- 0.9699 to adjust for chance agreement.
- Committee members noted the specifications of the measure were well defined and precisely specified. The members of the Committee noted that validity presented was based on input by an expert panel, where that panel rated the measure a mean 4.7 on a 5 point scale (with 10 members giving a rating of four and nine members rating it as a five).
- Data were presented from the CMS PRQI claims option. In 2008, 45% of patients failed to receive optimal care and significant variations in performance were noted in the program.
- Based on the data provided, the Committee deemed the measure as both reliable and valid.

3. Feasibility: 0-H; 18-M; 3-L; 0-I

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

<u>Rationale</u>:

- Data is generated and used by healthcare personnel during the provision of care. Members of the Committee questioned whether or not urine albumin results could be captured when using electronic health records (EHRs). Developers responded by stating that within the Veterans Health Administration

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(VHA) EHR the data could be captured but could not specify with respect to any others. • Committee members noted that having the measure could potentially advance the agenda of making searchable albumin urea results, also making it easier to populate potential patient registries and undertake or advance population management of those with CKD.
4. Use and Usability: 10-H; 8-M; 2-L; 1-I *(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)* Rationale: • The measure is currently in use and is included in the Renal Physicians Association (RPA) Quality Improvement (QI) registry that uses e-specifications and provides for internal QI to specific organizations. Planned usage provided by the developer includes public reporting, professional certification or a recognition program. • Committee members noted that the measure was the right type of measure that should be used when evaluating different health plans and could also be linked to accountability and payment.
5. Related and Competing Measures • This measure was identified as potentially related or competing with: o NQF# 0066 Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%): Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who also have diabetes OR a current or prior Left Ventricular Ejection Fraction (LVEF) < 40% who were prescribed ACE inhibitor or ARB therapy • The Committee was unable to discuss related and competing measures during the in-person meeting and had the opportunity to do so during the post-comment call. The Committee concluded that the remaining measures were related but not competing. The Committee recommended and the developers agreed to work together to harmonize these measures where possible.
Standing Committee Recommendation for Endorsement: 20-Y; 1-N
6. Public and Member Comment • Five commenters were generally in support of this measure. One of these commenters noted the measure could be improved by more specificity regarding many aspects of the measure. o Developer Response: The RPA appreciates ASN's feedback. We agree with the recommendation that the measure should specify a UPCR threshold of 500mg/g or a UACR threshold of 300mg/g.
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

849

1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL
Submission | Specifications
Description: Percentage of calendar months within a 12-month period during which patients aged 17 years and younger with a diagnosis of End Stage Renal Disease (ESRD) receiving hemodialysis or peritoneal dialysis have a hemoglobin level < 10 g/dL **Numerator Statement**: Calendar months during which patients have a hemoglobin level < 10 g/dL **Denominator Statement**: All calendar months during which patients aged 17 years and younger with a diagnosis of ESRD are receiving hemodialysis or peritoneal dialysis **Exclusions**: Documentation of medical reason(s) for patient having a hemoglobin level < 10 g/dL (eg, patients who have non-renal etiologies of anemia [eg, sickle cell anemia or other hemoglobinopathies, hypersplenism, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy, post-operative bleeding,

active bloodstream or peritoneal infection], other medical reasons) Note: PCPI recommends that physicians document specific reasons for exception in patient medical record.

Adjustment/Stratification: No risk adjustment or risk stratification

Level of Analysis: Clinician : Group/Practice, Clinician : Individual, Clinician : Team

Setting of Care: Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other (Domiciliary, Rest Home (eg Assisted Living Facility), or Custodial Care Services)

Type of Measure: Intermediate Outcome

Data Source: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry

Measure Steward: Renal Physicians Association

STANDING COMMITTEE MEETING [05/06/2015-05/07/2015]

1. Importance to Measure and Report: <u>The measure meets the Importance criteria</u>

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **5-H; 13-M; 3-L; 1-I**; 1b. Performance Gap: **10-H; 13-M; 0-L; 0-I**

<u>Rationale</u>:

- For this intermediate outcome measure, the developer provided evidence that includes a Kidney Disease Outcomes Quality Initiative (KDOQI) clinical guideline and a systematic review of literature. Based on the KDOQI evidence the Committee graded this measure as moderately strong.
- The Committee agreed there was strong evidence supporting the measure. Specifically that in dialysis and non-dialysis patients with chronic kidney disease (CKD) receiving erythropoietin-stimulating agent (ESA) therapy, the hemoglobin target should generally be in the range of 11.0 to 12.0 g/dL. This was based on the results of 14 randomized controlled trials (RCTs) in dialysis patients and 15 RCTs in non-dialysis patients. Evidence for setting a Hemoglobin Level less than 10g/dL as the floor was not included in this submission but the Committee noted they were aware of evidence that supported the developer's decision to set the threshold at 10.
- The developer provided data from the 2008 Physician Quality Reporting System (PQRS), which demonstrated a mean of 36.51% of patients did not receive optimal treatment (11 to 12 g/dL). The developers noted disparities in anemia care in the African-American population, which also has a higher prevalence of CKD.
- The Committee concluded there was an opportunity for improvement with 20% of patients with hemoglobin less than 10 gm/dL.

2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **1-H; 8-M; 4L; 10-I;** Second vote: **1-H; 15-M; 1-L; 6-I**; 2b. Validity: **3-H; 18-M; 0-L; 1-I**

<u>Rationale</u>:

- The measure was tested at the critical data element level, using inter-rater reliability for medical record abstraction with a kappa of 0.986 in the adult population. Committee members voiced concern that the measure was not tested in children, the target population of this measure. Additionally, the kappa listed was for a data element that was no longer in the measure so the Committee noted it was not relevant to the review of this measure.
- Initially, the Committee failed the measure at the reliability criterion. After further discussion and clarification from the developer that the reliability testing results would not change if tested in a pediatric population because the process was the same for both populations, the Committee requested to revote and passed the measure on reliability.
- A technical expert panel was used to assess face validity of the measure with a mean rating of 4.37 out of 5. The Committee agreed the measure was valid.

3. Feasibility: 10-H; 13-M; 0-L; 0-I

1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The measure data can be collected from administrative claims, clinical database/registry and abstracted from electronic health record. Committee members agreed that the data elements are generated and used by healthcare personnel as part of the care delivery process.

4. Use and Usability: 14-H; 9-M; 0-L; 0-I

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)

Rationale:

- Committee members noted that the measure is publicly reported and is used in payment and quality improvement programs.
- Data submitted by the developer demonstrates a slight improvement over the past 4 years.
- The Committee agreed the benefits of the measure outweigh any possible unintended consequences.

5. Related and Competing Measures

- This measure was identified as potentially related or competing with:
  - NQF #1660 ESRD Patients Receiving Dialysis: Hemoglobin Level <9g/dL: Percentage of calendar months within a 12-month period during which patients aged 18 years and older with a diagnosis of ESRD who are receiving hemodialysis or peritoneal dialysis have a Hemoglobin level <9g/dL
  - NQF #1424 Monthly Hemoglobin Measurement for Pediatric Patients: Percentage of patient months of pediatric (less than 18 years) in-center hemodialysis, home hemodialysis, and peritoneal dialysis patients who have monthly measures for hemoglobin during the reporting period.
- NQF #1660 was not recommended by the Committee, so the Committee will not discuss the harmonization of these two measures. The Committee concluded there was substantial differences between #1667 and #1424, most specifically that #1424 is a process measure and #1660 an intermediate outcome measure. While they have similar focus areas, they were determined not to be related or competing.

Standing Committee Recommendation for Endorsement: 20-Y; 3-N

6. Public and Member Comment

- Four commenters were generally in support of this measure. One of these commenters expressed concerns regarding the population listed.
  - Developer Response: The RPA appreciates APSN's support and feedback. The RPA is willing to modify the age from 17 years or younger to <18 years. The measure numerator is specified as "Calendar months during which patients have a hemoglobin level < 10 g/dL" and the denominator as "All calendar months during which patients aged 17 years and younger with a diagnosis of ESRD are receiving hemodialysis or peritoneal dialysis".

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X

8. Board of Directors Vote: Y-X; N-X

9. Appeals

850

2594 Optimal End Stage Renal Disease (ESRD) Starts

Submission | Specifications

Description: Optimal End Stage Renal Disease (ESRD) Starts is the percentage of new ESRD patients during the measurement period who experience a planned start of renal replacement therapy by receiving a preemptive kidney transplant, by initiating home dialysis, or by initiating outpatient in-center hemodialysis via arteriovenous

fistula or arteriovenous graft.

Numerator Statement: The number of new ESRD patients who initiate renal replacement therapy in the twelve month measurement period with an optimal ESRD therapy (specific optimal ESRD therapies are defined in section S.6).

Denominator Statement: The number of patients who receive a preemptive kidney transplant or initiate long-term dialysis therapy (do not recover kidney function by 90 days) for the first time in the twelve month measurement period

Exclusions: None

Adjustment/Stratification: No risk adjustment or risk stratification

Level of Analysis: Integrated Delivery System, Population : Regional, Clinician : Team

Setting of Care: Ambulatory Care : Clinician Office/Clinic, Dialysis Facility

Type of Measure: Process

Data Source: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry

Measure Steward: The Permanente Federation

STANDING COMMITTEE MEETING [05/06/2015-05/07/2015]

1. Importance to Measure and Report: <u>The measure meets the Importance criteria</u>

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **6-H; 16-M; 0-L; 0-I**; 1b. Performance Gap: **18-H; 4-M; 0-L; 0-I**

<u>Rationale</u>:

- The evidence is based on four clinical practice guidelines including Kidney Disease Outcomes Quality Initiative (KDOQI) Guidelines 2006 Update – Vascular Access; United Kingdom Renal Association Vascular Access for Hemodialysis 5th Edition, Vascular Access Society guidelines and the Canadian Society of Nephrology. In addition, there was systematic review evidence submitted. In its entirety, the Committee agreed the evidence provided supported this multi-component measure.
- Various committee members stated their support for the importance of the measure and its ability to drive improvements in care prior to initiation of dialysis.
- The Committee questioned if formal adaptation of the measure changed care across the Permanente Federation. The developer indicated improvement has been seen across regions and they have also noticed growth in home peritoneal dialysis as well.
- Performance scores across the Kaiser Permanente (KP) Regions for the last three years are shown in a table and graphically in the appendix in the submission. Over six consecutive semi-annual measurement periods, the KP national mean has improved from 47.0% in December 2011 to 57.7% in June 2014. For the most recent measurement period (July 1, 2013 to June 30, 2014) the total number of new ESRD patients was 2681, ranging from 87 to 1147 patients in the six measured Kaiser Permanente regions. The initial regional minimum was 32% and maximum was 64%; most recently the regional minimum was 48% and maximum was 61%.
- The data submitted by the developer indicated a performance gap and supported the value of creating a national performance measure.

2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **10-H; 10-M; 1-L; 0-I**; 2b. Validity: **6-H; 13-M; 2-L; 0-I**

<u>Rationale</u>:

- The developer tested the accuracy of the measure by assessing total element accuracy, denominator and numerator accuracy combined, and comparing the match proportion to the developer's hypothesized value of .9 and a 95% confidence interval. Pediatric patients are currently included in the denominator as confirmed by the developer; however, there was considerable discussion about the appropriateness of their inclusion. A good proportion of pediatric patients should be covered by peritoneal dialysis and there

is a growing number having pre-emptive transplants. The numbers of pediatric patients are very small and it is not practical to put a fistula or graft in most children. One of the pediatric experts explained that for the pediatric patient, the goal should be pre-emptive transplant rather than fistula or graft. The developer expressed willingness to reconsider the pediatric portion of the measure and to bring the results to the post-comment call. At the post-comment call, the developer confirmed the pediatric portion of the measure was removed.

- The Committee discussed accountability and whether individual clinicians have an opportunity provide optimal starts if they practice in a hospital where 50% of their patients present at the emergency department. The developer indicated that the measure suggests a minimum of 50 patients within a year to report the measure and that it is not appropriate for use in units serving less than 50 patients per a year such as small pediatric units and individual practitioners.
- Overall, the testing data indicated accuracy was very good. The positive predictive value was excellent at 0.94 and negative predictive value at 0.79. The developer demonstrated sufficient validity as an indicator of quality.
- In gaining an understanding of the specification, the Committee asked about use of the Center for Medicare and Medicaid Services (CMS) 2728: End Stage Renal Disease Medical Evidence Report Medicare Entitlement And/Or Patient Registration form. The developer had mentioned in opening statements that all information necessary to calculate the measure is included in that form. It was explained that the information was presented to demonstrate how the measure may be utilized outside of the Kaiser system; however, the 2728 was not utilized and has not been validated for calculation of the measure.

3. Feasibility: 4-H; 15-M; 3-L; 0-I

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- Based on the information submitted, there was confusion around the audience for the measure. Specifically clarification was requested on if the measure was intended to assess quality of care provided by integrated delivery systems, hospitals, physicians, or other levels. The developer clarified the measure is currently utilized in an integrated delivery system and re-iterated difficulty in using the measure in any type of unit with less than 50 patients. The developer reports that CMS collects all data required by the measure using Form 2728, thus it could be utilized more broadly by health plans and in Federal programs.

4. Use and Usability: 4-H; 11-M; 6-L; 0-I

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)

Rationale:

- The measure is currently used in six Kaiser regions for quality improvement and accountability. Kaiser plans to submit it to CMS where there is potential for the measure to be used as a Physician Quality Reporting System (PQRS) measure.
- A potential unintended consequence of the measure is that it could drive programs with a lot of urgent starts to doing urgent start peritoneal dialysis, which may or may not be clinically appropriate, and drive clinical behaviors where the result is unknown. The developer indicated this has not been the case in their history of measure use, but it would be something that would require consideration in future adaptations of the measure outside of Kaiser Permanente.

5. Related and Competing Measures

- This measure was identified as potentially related or competing with:
  - NQF #0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement: Percentage of end stage renal disease (ESRD) patients aged 18 years and older receiving hemodialysis during the 12-month reporting period and on dialysis >90 days who 1. have a functional autogenous AVF (defined as two needles used or a single-needle device [NOT one needle used in a two-needle device]) (computed and reported separately); 2. have a functional AV graft (computed and reported separately); or 3. have a catheter, but have been

seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for a functional autogenous AVF or AV graft at least once during the 12-month reporting period (computed and reported separately). + Reporting should be stratified by incident versus prevalent patients, as defined by USRDS.

- NQF #0256 Minimizing Use of Catheters as Chronic Dialysis Access: Percentage of patient months on maintenance hemodialysis during the last HD treatment of month with a chronic catheter continuously for 90 days or longer prior to the last hemodialysis session.
- NQF #0257 Maximizing Placement of Arterial Venous Fistula (AVF): Percentage of patient months for patients on maintenance hemodialysis during the last HD treatment of month using an autogenous AV fistula with two needles.

- During the In-Person meeting, the Committee assessed the measures based on the NQF Decision Logic to Identify Related and Competing Measures and determined that 2594 was not related to or competing with 0251, 0256, and 0257. The Committee did determine 0251, 0256 and 0257 were competing measures, however, did not encourage further harmonization at this time. The Committee noted the measures were not incompatible with one another and emphasized the need to not lose some of the value of the individual measures by harmonizing.

Standing Committee Recommendation for Endorsement: 17-Y; 3-N

Rationale

- The Committee requested the developer assess potential revisions to the measure submission related to inclusion of the pediatric population and also greater clarity of level of analysis. They specifically indicated the measure should not be reported at the individual clinician level.

6. Public and Member Comment

- One commenter supported the measure for endorsement and one did not.
- Three additional commenters supported the concept of the measure but had concerns with the construction of the measure. They expressed the measure was only feasible in fully integrated delivery care systems or large physician groups and could not be applied to dialysis facilities, or even ESRD Seamless Care Organizations (ESCOs), because neither includes CKD patients. Commenters suggested exclusions that address scenarios in which a permanent access may not be appropriately identified and also listed potential unintended consequences of implementing this measure.
  - Developer Response:

    Intended level of analysis (health care entities appropriate to measure): Due to the check box nature of the online application process, it is difficult to describe on the application how this measure can best be used to improve outcomes for patients who are approaching ESRD. As pointed out by both KCP and RPA and also as stated several times in the application, the use is neither appropriate nor intended for dialysis providers who generally do not see patients before ESRD and have little or no opportunity to educate and coordinate care before ESRD. The entities that can impact Optimal ESRD Starts are CMS, commercial health plans, integrated care systems with CKD patients (not ESCOs) and large nephrology practices/nephrology associations with more than 50 new ESRD patients per year.

    Patients not previously managed by nephrologists: The 40% of patients not assigned to a nephrologist until they start dialysis, as noted by KCP and RPA, are the exact patients this measure can help address when applied at the payer level. In America today, with the presence of electronic laboratory data, every patient with advanced chronic kidney disease can be identified, and then educated about dialysis modalities and kidney transplantation, referred to a nephrologist and be prepared before ESRD. In most cases, the abnormal labs (creatinine, urine protein) were paid for by CMS or a health insurance plan and it is in their best interest and is their responsibility to reach out to these patients and bring them into a process leading to an Optimal ESRD Start.

    At the nephrologist level, patients who reach ESRD without seeing a nephrologist may not be attributed to the nephrologist who takes on their care. Pre-ESRD patients under the management of

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a nephrologist and team however, share the responsibility to help patients have an Optimal ESRD Start. And when sufficient numbers of new ESRD patients can be grouped together (50 or more per year), the performance of the nephrologist and their teams may be measured. Additional exclusions: Before discussing individual proposed denominator exclusions, we would like to point out that the Optimal ESRD Starts target could never be 100% for a number of reasons, but that the 2012 35.5% US outcome is far below what can be accomplished. The goal is to have systems in place to identify and support the majority of patients approaching ESRD, and we must keep an eye to the larger mission. Furthermore, every exclusion means more data elements must be collected, as well as tested for reliability and validity. The third exclusion suggested by both KCP and RPA is actually in place, not as an exclusion but defined in the denominator statement: "The population being measured are patients age 18 and over who 1) receive a preemptive kidney transplant (having never received outpatient dialysis), including simultaneous pancreas and kidney transplant, plus 2) patients age 18 and over initiating long-term maintenance dialysis who do not recover kidney function by 90 days." This is 90 days as opposed to the suggested 4 months. Of course the longer the waiting time, the more patients will recover GFR and be able to stop dialysis. However, the calculation of the metric already requires a 90 day waiting period for acute renal failure recovery, and there needs to be a compromise to keep the results more current and meaningful. Since the vast majority of patients who will recover have recovered by 90 days, we feel that is an adequate time period. The first two proposed exclusions from both the KCP and the RPA involve decisions for the frail elderly which is an area of much interest in the renal literature in the last couple years. We agree that Fistula First is not the correct approach for all patients and that the frail elderly probably do need a different pathway to ESRD, including the option to not start dialysis (such patients are not in the denominator), and the use of grafts or even catheters for a trial or for a planned short duration of dialysis. At this time the medical evidence is not clear about an ideal pathway for such patients. Within KP, we are discussing alternative programs for the frail elderly. We expect that if this measure is endorsed, by the time this measure is up for re-endorsement in 3 years there may be sufficient medical evidence and global agreement to provide an exclusion for these patients. We would be happy to work with your organizations on this. In the area of unintended consequences, we agree that these specific situations bear close monitoring. 1) In the case of promoting urgent start PD, we view this as a very good thing and it is included in the numerator definition. We believe in Home Dialysis first unless patients clearly are incapable. It is difficult to imagine urgent start PD being inappropriately used in an unqualified candidate in order to game the system. But even if such a patient quickly failed PD, there is no penalty in the measure for switching to in-center hemodialysis later. 2) Single needle in fistula with second line in catheter – our view is that this is not optimal, exposes the patient to catheter sepsis and is a failure of the system to prepare the patient. We recognize that sometimes the fistula is not quite ready when the patient has to start hemodialysis and recognize that the perfect algorithm for fistula placement may never be discovered. This is one reason why the measure's target will never be 100%, but such failures should be looked at as opportunities to improve the system for future patients. 3) Low socioeconomic status: All patients deserve the chance for an Optimal ESRD Start, regardless of their socioeconomic status. We recognize the reality of current disparities in care but hope that if they do exist in this process and are brought into the light, that there will be an opportunity for better outcomes in the future.
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

851

2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)

Submission | **Specifications**

Description: Percentage of adult in-center hemodialysis patients in the facility whose average ultrafiltration rate (UFR) is >/= 13 ml/kg/hour.

Numerator Statement: Number of patients* from the denominator whose average UFR >13 ml/kg/hour who receive an average of <240 minutes per treatment during the calculation period.**

*To address the fact that patients may contribute varying amounts of time to the annual denominator population, results will be reported using a "patient-month" construction.

** The calculation period is defined as the same week that the monthly Kt/V is drawn.

Denominator Statement: Number of adult in-center hemodialysis patients in an outpatient dialysis facility undergoing chronic maintenance hemodialysis during the calculation period.

Exclusions: The following patients are excluded from the denominator population:

1. Patients <18 years of age (implicit in denominator definition).
2. Home dialysis patients (implicit in denominator definition).
3. Patients in a facility <30 days.
4. Patients with >4 hemodialysis treatments during the calculation period.
5. Patients with <7 hemodialysis treatments in the facility during the reporting month.
6. Patients without a completed CMS Medical Evidence Form (Form CMS-2728) in the reporting month.
7. Kidney transplant recipients with a functioning graft.
8. Facilities treating <XX adult in-center hemodialysis patients during the reporting month. (Number currently being evaluated.)

Adjustment/Stratification: No risk adjustment or risk stratification

Level of Analysis: Facility

Setting of Care: Other– Dialysis facility

Type of Measure: Process

Data Source: Electronic Clinical Data

Measure Steward: Kidney Care Quality Alliance (KCQA)

STANDING COMMITTEE MEETING [05/06/2015-05/07/2015]

1. Importance to Measure and Report: The measure meets the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **0-H; 17-M; 2-L; 1-I**; 1b. Performance Gap: **3-H; 16-M; 1-L; 0-I**

Rationale:

- The measure is based on one Kidney Disease Outcomes Quality Initiative (KDOQI) clinical guideline and a systematic review of the evidence. The KDOQI clinical practice guidelines for hemodialysis adequacy: Achievement of optimal "dry" weight (CPG 5.1) gave the evidence a grade of A (high quality of evidence).
- The developer clarified that the measure requires either having dialyzing patients at an average UFR ≤13 ml/kg/hour and/or dialyzing patients for an average of >240 minutes per session during the reporting period. Upon review of the evidence submitted, the Committee noted that none of the articles reviewed during the systemic review addressed those specific requirements and different cutoffs are listed for both the timeframe and UFR.
- While voicing concerns about evidence, the Committee also noted that many of the dialysis measures focused on renal replacement dose have been recommended for movement into reserve status. In contrast, this measure, focused on a discrete intermediate clinical outcome, begins to breakdown in a more granular way some of the issues that are components of what the original Kt/V intended. The concern is there is not much known about this specific aspect of care because the industry has been concentrating on the more global measure. Upon review of performance gap, the Committee indicated data from 4,252 hemodialysis facilities, with over 412,000 patients, shows that there is significant gap with a median of 10.8%.

2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)

- Overall, the Committee agreed there was evidence to support the measure and there was a need for a national performance standard.

2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **0-H; 19-M; 0-L; 0-I**; 2b. Validity: **2-H; 16-M; 1-L; 0-I**

<u>Rationale</u>:

- The reliability of the measure was assessed using a repeated measures analysis of variance (ANOVA) test. Using data from 4,252 dialysis facilities, the developer provided data that demonstrated an intra-class correlation coefficient between 0.6 and 0.7, indicating a good level of reliability within facilities over the course of the 12 months They also provided ratios of between-to within- facility correlation ranging 1.7 to 2.3; there is more variation between facilities than within facilities.
- Clarification was requested on the exclusions. The measure excludes four or more treatments per month so it would count three maximum submissions for compliance. Overall, the Committee concluded the measure was reliable and differentiates between facilities.
- The validity of the measure was evaluated by correlating facility-specific scores with each facility's 2013 Standardized Hospitalization Ratio for Admissions measure (SHR, NQF #1463) and Standardized Mortality Ratio* measure (SMR, NQF #0369) scores, using Pearson's Correlation Coefficient. The correlations were in the expected direction and statistically significant. The measure was also tested for validity at the level of the measure score by systematic assessment of face validity by a technical expert panel advising the measure developers. *(*SMR specifications are based on a 4-year rolling period.)*

3. Feasibility: 2-H; 15-M; 1-L; 1-I

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

<u>Rationale</u>:

- The data source for this measure is CROWNWeb. The measure was tested using data from three KCQA member dialysis organizations, each with the capacity to provide retrospective analyses from a data warehouse/repository. The Committee expressed concerns that CROWNWeb currently only collect one data point and thus would need to be expanded to the three submissions during the week that the monthly Kt/V is drawn in order to monitor this measure. The developer reassured the Committee that they are in conversation with the Centers for Medicare and Medicaid Services (CMS) about adding the two extra data points so batch submitters could batch them together to form the three needed data points and all other facilities would have to manually enter the additional two in the manner they currently manually enter the one data point.
- Overall, the Committee agreed data is being collected or generated and used by healthcare personnel during provision of care.

4. Use and Usability: 2-H; 15-M; 1-L; 1-I

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)

<u>Rationale</u>:

- While the measure is not currently in use, the Committee agreed it has the potential to be used in public reporting, payment and quality improvement programs.

5. Related and Competing Measures

- This measure was identified as potentially related or competing with:
  - NQF #2700 Ultrafiltration rate greater than 13 ml kg hr: Percentage of patients months for patients an ultrafiltration rate greater than 13 ml/kg/hr
- NQF #2700 was not recommended by the Committee, so the Committee did not discuss the harmonization of these two measures.

Standing Committee Recommendation for Endorsement: 19-Y; 0-N

2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)
6. Public and Member Comment • Five commenters were generally in support of this measure.
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

852

2704 Minimum Delivered Peritoneal Dialysis Dose
Submission | **Specifications**
Description: Percentage of all patient months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual) **Numerator Statement**: Number of patient months in the denominator whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual) **Denominator Statement**: To be included in the denominator for a particular month, the patient must have had ESRD for greater than 90 days, and must be assigned to the facility for the entire month. **Exclusions**: Exclusions that are implicit in the denominator definition include 1) all patients who have had ESRD for <91 days and 2) patients who were not assigned to the facility for the entire month. There are no additional exclusions for this measure. **Adjustment/Stratification**: No risk adjustment or risk stratification **Level of Analysis:** Facility **Setting of Care:** Dialysis Facility **Type of Measure**: Outcome **Data Source**: Administrative claims, Electronic Clinical Data **Measure Steward**: Centers for Medicare and Medicaid Services (CMS)
STANDING COMMITTEE MEETING [05/06/2015-05/07/2015] **1. Importance to Measure and Report: The measure meets the Importance criteria** *(1a. Evidence, 1b. Performance Gap)* 1a. Evidence: **1-H; 18-M; 1-L; 3-I**; 1b. Performance Gap: **5-H; 18-M; 0-L; 0-I** Rationale: • This intermediate clinical outcome measure is supported by Kidney Disease Outcomes Quality Initiative Clinical Practice Guidelines (KDOQI CPG) and clinical practice recommendations, 2006 Updates (hemodialysis adequacy, peritoneal adequacy); and KDOQI 2006 Updates CPG for Peritoneal Dialysis Adequacy for pediatrics. The Committee agreed that the body of evidence shows a strong correlation between total solute clearance for urea and morbidity and mortality. • Committee members noted that the pediatric patient data is based primarily on expert opinion. Members also questioned if there is a difference between the 1.7 Kt/V and 1.8 Kt/V clearance thresholds (in evidence) with pediatric and adults and why there are multiple measures. The developer clarified that they do not report on measures at facilities with fewer than eleven patients; however, many facilities with only a small number of pediatric patients that would not be included in reporting want to report on dialysis adequacy. Committee members questioned why there are minimum case requirements and the developer explained the issue of patient identification where such small samples creates the potential for identity of patients from could be breached and the relevant Center for Medicare and Medicaid Services (CMS) policy. Members expressed concern that the alternative is to have no measurements for pediatric patients. • The developer presented CROWNWeb and Medicare claims data from January to December 2013 that

indicated the mean percentage of patients with peritoneal dialysis adequacy measurements that achieved the target at least once in four months (adult) and six months (pediatric) was 78.1% (SD=17.9%). Committee members agreed that gaps exist.

2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **5-H; 18-M; 0-L; 0-I**; 2b. Validity: **0-H; 18-M; 4-L; 0-I**

<u>Rationale</u>:

- The developer confirmed that the numerator includes the number of adults who achieved the 1.7 Kt/V threshold within four months, and the number of children who achieve the 1.8 Kt/V threshold within six months. Committee members agreed that the data elements are clearly defined. Again, clinics with less than 11 peritoneal dialysis patients are excluded. If the Kt/V is not measured, the case(s) are still included in the denominator.
- The developer presented testing at the measure score level using January 2013 – December 2013 claims data to calculate the inter-unit reliability (IUR) for the 12 month period to assess the reliability of this measure. The analysis showed IUR is 0.914, which is high and suggests 91% of variation in the measure is attributed to between-facility variation. The confidence interval is (0.908, 0.920).The Committee agreed that the testing results suggest this measure is reliable.
- Validity was assessed by calculating the Spearman correlation between this measure and the 2013 standardized mortality ratio (SMR) and standardized hospitalization ratio (SHR). This measure is also established on the basis of face validity. The measure is a combination of the individual adult and pediatric peritoneal dialysis (PD) Kt/V measures that have been reviewed and approved by Clinical TEPs in 2006, and 2013, respectively.
- The Spearman correlation between this measure and the SMR for the same facility is -0.01 (p-value=0.7169). The Spearman correlation between this measure and the SHR is -0.118 (p-value <0.0001).
- The Spearman correlation estimates indicate higher facility level percentages of patients at the facility that achieve the Kt/V target is associated with lower SHR, although the magnitude of the association is low. A very weak association between facility level percentages of patients achieving the PD Kt/V target and lower SMR was observed and in the expected direction, however the correlation coefficient was not statistically significant. The Committee agreed that the validity testing provided was sufficient.

3. Feasibility: 15-H; 8-M; 0-L; 0-I

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

<u>Rationale</u>:

- The Committee noted that the data elements are routinely collected or generated by healthcare personnel during provision of care and are available electronically through CROWNWeb or claims data and they had no major concerns with feasibility.

4. Use and Usability: 8-H; 12-M; 1-L; 1-I

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)

<u>Rationale</u>:

- This measure is a combination of individual adult and pediatric Kt/V measures. The existing NQF endorsed adult PD Kt/V measure (NQF #0318) is currently included in the End Stage Renal Disease Quality Improvement Program (ESRD QIP) beginning with payment year (PY) 2015, and has been reported on Dialysis Facility Compare since January 2013. The Pediatric PD Kt/V (NQF #2705) measure is finalized for ESRD QIP for PY 2018. Both measures were recommended for endorsement by the Committee.
- While the measure is not currently in use, the Committee agreed it has the potential to be used in public reporting, payment and quality improvement programs.

5. Related and Competing Measures

- This measure was identified as potentially related or competing with:

2704 Minimum Delivered Peritoneal Dialysis Dose
- NQF# 0318 Peritoneal Dialysis Adequacy – Delivered Dose of Peritoneal Dialysis Above Minimum: Percentage of all patient months for patients = 18 whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 and spKt/V =< 8.5. (dialytic + residual)   - NQF# 0321 Peritoneal Dialysis Adequacy: Solute: Percentage of patients aged 18 years and older with a diagnosis of End Stage Renal Disease receiving peritoneal dialysis who have a total Kt/V >= 1.7 per week measured once every 4 months   - NQF #2706 Pediatric Peritoneal Dialysis Adequacy-Achievement of Target Kt V: Percent of pediatric peritoneal dialysis patient-months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V = 1.8 and spKt/V< 8.5. (dialytic + residual)   - NQF#2705 Delivered Dose of Dialysis Above Minimum: Percentage of all patient months for patients whose average delivered dose of dialysis (either hemodialysis or peritoneal dialysis) met the specified threshold during the reporting period.   - The Committee was unable to discuss related and competing measures during the in-person meeting and had the opportunity to do so during the post-comment call. NQF #2705 was not recommended by the Committee so that measure was not included in the discussion. The Committee concluded that the remaining measures were related but not competing. The Committee recommended and the developers agreed to work together to harmonize these measures where possible.
Standing Committee Recommendation for Endorsement: 21-Y; 1-N
6. Public and Member Comment   - Three commenters were generally in support of this measure. Two of these commenters requested information on stipulations made by the Standing Committee during the In-Person.   - Developer Response: The specifications have been revised to use the term "weekly Kt/Vurea" instead of "spKt/V", and we have clarified the measurement period for pediatric patients (within the past 6 months). Allowing facilities to exclude those patients for which RRF cannot be measured could potentially encourage gaming of this measure. This is consistent with the way missing data are treated in this measure (missing Kt/V values are counted against the facility). In addition, our ability to assess whether a facility evaluated RRF is not currently feasible using the data available in CROWNWeb or Medicare Claims.
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

853

2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V
Submission | **Specifications**
Description: Percent of pediatric peritoneal dialysis patient-months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V = 1.8 and spKt/V< 8.5. (dialytic + residual) **Numerator Statement**: Percent of pediatric peritoneal dialysis patient-months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.8 and spKt/V =< 8.5. (dialytic + residual) **Denominator Statement**: To be included in the denominator for a particular month the patient must have had ESRD for greater than 90 days, must be <18 years old, and must be assigned to that facility for the entire month. **Exclusions**: Exclusions that are implicit in the denominator definition include 1) all patients >=18 years old 2) all patients who have had ESRD for <91 days, and 3) patients who have not been in the facility for the entire reporting month There are no additional exclusions for this measure. **Adjustment/Stratification**: No risk adjustment or risk stratification

2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V

Level of Analysis: Facility

Setting of Care: Dialysis Facility

Type of Measure: Outcome

Data Source: Administrative claims, Electronic Clinical Data

Measure Steward: Centers for Medicare and Medicaid Services

STANDING COMMITTEE MEETING [05/06/2015-05/07/2015]

1. Importance to Measure and Report: <u>The measure meets the Importance criteria</u>

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **0-H; 18-M; 2-L; 1-I**; 1b. Performance Gap: **14-H; 8-M; 1-L; 0-I**

<u>Rationale</u>:

- Evidence for this intermediate clinical outcome measure is supported by the Kidney Disease Outcomes Quality Initiative (KDOQI) 2006 Clinical Practice Guidelines for Peritoneal Dialysis Adequacy. This measure is based on studies in adult peritoneal dialysis patients because an equivalent evidence base does not exist for children. Committee members agreed that when no pediatric-specific data exists, performance measures for adults should serve as the minimum of standard.
- Committee members raised a question regarding residual renal function being measured using combined creatinine clearance and urea clearance. The developer responded that the original intention was for the residual renal function assessment to comport with the adult approach, which is measuring urea clearance, and that would be consistent with the clinical performance recommendations for pediatric measures. However, as currently specified, the pediatric measure is not aligned with the adult approach which is measuring urea clearance only. The pediatric specialists on the Committee indicated that when the combined Kt/V is calculated for either children or adults, they are only using urea. The developers were unable to explain the variation in the specifications from the intention and thus agreed to modify the pediatric measure to be consistent with the adult measures (NQF #2704 and #0318) which use urea clearance to measure residual kidney function.
- The Committee noted the evidence is largely based on the inference from adults that adequate measurement of adequate peritoneal dialysis results in better outcomes. Along with the consensus that when no pediatric specific data exists, performance measures for adults should serve as the minimum of standard.
- The developer presented CROWNWeb data from 2013 showing that only about 50 percent of pediatric patients had a measure of peritoneal dialysis adequacy during the six months of data analyzed. The Committee agreed there was a gap in care.

2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u>

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **3-H; 19-M; 0-L; 0-I**; 2b. Validity: **0-H; 23-M; 0-L; 0-I**

<u>Rationale</u>:

- Committee members questioned how often adequacy is supposed to be measured and the developer clarified that it should be within six months to be consistent with the KDOQI Clinical Practice Recommendations (CPRs). The developers agreed to update the specifications and address the interval of measurement and also correct spKt/V >= 1.7 to spKt/V >= 1.8.
- The developer presented testing at the measure score level using January 2013 – December 2013 claims data to calculate the inter-unit reliability (IUR) for the 12 month period to assess the reliability of this measure. The method for calculating the IUR was developed for measures that are approximately normally distributed across facilities. The IUR is 0.961, which is high and suggests 96% of variation in the measure is attributed to between-facility variation. The confidence interval is (0.936, 0.979).The Committee agreed that the testing results suggest this measure is reliable.
- Face validity is used to substantiate the validity of this measure. Committee members noted that the small sample size used for validity testing is due to lower numbers of pediatric patients to include in a study. Members agreed that the validity testing results reflect the quality of care provided, and

adequately distinguishes good and poor quality.

3. Feasibility: 16-H; 6-M; 0-L; 0-I

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The Committee noted that the data elements are routinely collected or generated by healthcare personnel during provision of care and are available electronically through CROWNWEB or claims data and they had no major concerns with feasibility.

4. Use and Usability: 6-H; 15-M; 1-L; 1-I

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)

Rationale:

- This is a new measure that is not currently in use; however the measure has been finalized for use for payment year (PY) 2018 End Stage Renal Disease Quality Incentive Program (ESRD QIP) in the future. The Committee had no major concerns with use and usability.

5. Related and Competing Measures

- This measure was identified as potentially related or competing with:
  - NQF# 0318 Peritoneal Dialysis Adequacy – Delivered Dose of Peritoneal Dialysis Above Minimum: Percentage of all patient months for patients = 18 whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 and spKt/V =< 8.5. (dialytic + residual)
  - NQF# 0321 Peritoneal Dialysis Adequacy: Solute: Percentage of patients aged 18 years and older with a diagnosis of End Stage Renal Disease (ESRD) receiving peritoneal dialysis who have a total Kt/V >= 1.7 per week measured once every 4 months
  - NQF #2704 Minimum Delivered Peritoneal Dialysis Dose: Percentage of all patient months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual)
  - NQF#2705 Delivered Dose of Dialysis Above Minimum: Percentage of all patient months for patients whose average delivered dose of dialysis (either hemodialysis or peritoneal dialysis) met the specified threshold during the reporting period
- The Committee was unable to discuss related and compet006ing measures during the in-person meeting and had the opportunity to do so during the post-comment call. NQF #2705 was not recommended by the Committee so that measure was not included in the discussion. The Committee concluded that the remaining measures were related but not competing. The Committee recommended and the developers agreed to work together to harmonize these measures where possible.

Standing Committee Recommendation for Endorsement: 23-Y; 0-N

Rationale

- The developer has agreed to update the specifications as recommended by the Committee.

6. Public and Member Comment

- Three commenters were generally in support of this measure. Two of these commenters requested information on stipulations made by the Standing Committee during the In-Person.
  - Developer Response: The specifications have been revised to use the term "weekly Kt/Vurea" instead of "spKt/V", and we have clarified the measurement period for pediatric patients (within the past 6 months). Allowing facilities to exclude those patients for which RRF cannot be measured could potentially encourage gaming of this measure. This is consistent with the way missing data are treated in this measure (missing Kt/V values are counted against the facility). In addition, our ability to assess whether a facility evaluated RRF is not currently feasible using the data available in CROWNWeb or Medicare Claims.

7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X

2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V
8. Board of Directors Vote: Y-X; N-X
9. Appeals

Measures Recommended With Reserve Status

0249 Delivered Dose of Hemodialysis Above Minimum
Submission | Specifications
Description: Percentage of all patient months for adult patients (>= 18years old) whose average delivered dose of hemodialysis (calculated from the last measurements of the month using the UKM or Daugirdas II formula) was between spKt/V >= 1.2 and spKt/V =< 5.0. **Numerator Statement**: Number of patient months in denominator whose delivered dose of hemodialysis (calculated from the last measurement of the month (using the UKM or Daugirdas II formula) was between a spKt/V >= 1.2 and spKt/V =<5.0. **Denominator Statement**: To be included in the denominator for a particular month, the patient must be >= 18 years old, must have had ESRD for greater than 90 days, must be dialyzing thrice weekly during the month, and must be assigned to that facility for the entire month. **Exclusions**: Exclusions that are implicit in the denominator definition include 1) pediatric patients (<18 years old) 2) those patients receiving dialysis less than 3 times weekly 3) all patients who have had ESRD for <91 days, and 4) patients at the facility for less than one month. There are no additional exclusions for this measure. **Adjustment/Stratification**: No risk adjustment or risk stratification **Level of Analysis:** Facility **Setting of Care:** Dialysis Facility **Type of Measure**: Outcome **Data Source**: Administrative claims, Electronic Clinical Data **Measure Steward**: Centers for Medicare & Medicaid Services (CMS)
STANDING COMMITTEE MEETING [05/06/2015-05/07/2015] **1. Importance to Measure and Report: The measure meets the Importance criteria** *(1a. Evidence, 1b. Performance Gap)* 1a. Evidence: **6-H; 15-M; 0-L; 0-I;** 1b. Performance Gap: **0-H; 6-M; 16-L; 1-I** Rationale: • The developer presented 2006 Kidney Disease Outcomes Quality Initiative Clinical Practice Guidelines (KDOQI CPG) and Clinical Practice Recommendations (CPRs) that were rated as Grade A for evidence to support this intermediate clinical outcome measure. The Committee noted that the guidelines from 2006 had a grade A but are dated. There are a number of studies showing clearance correlations with outcomes, and there is the hemodialysis study showing that higher clearances are not necessarily helpful, at least overall. • The developer agreed to remove the upper threshold of spKt/v <= 5.0 as there is a lack of evidence to support this. The developer confirmed this change was made during the post-comment call. • The performance data is based on 2013 CROWNWeb and Medicare claims data. Out of about 5,500 facilities, the mean performance score was 93.5 percent, with a standard deviation of seven percent. The Committee questioned whether or not there is opportunity for improvement and voted to consider the measure for endorsement with reserve status.
2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria *(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)* 2a. Reliability: **4-H; 18-M; 0-L; 0-I**; 2b. Validity: **3-H; 19-M; 1-L; 0-I**

0249 Delivered Dose of Hemodialysis Above Minimum

Rationale:

- The data elements were defined based on a treatment file for patients who are on dialysis. Testing was performed using the data from calendar year 2013, CROWNWeb and Medicare claims from over 5,500 facilities that had at least 11 eligible patients. The inter-unit reliability (IUR) for the 12 month period was 0.942, which is considered high.
- Validity testing was performed using the Spearman correlations to measure association between facility level performance scores and the 2013 standardized mortality ratio (SMR) and standardized hospitalization ratio (SHR). The Committee agreed that the coefficients are statistically significant, although the magnitude is relatively small. SMR was -0.085, and the SHR was -0.159.

3. Feasibility: 18-H; 5-M; 0-L; 0-I

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The data source for this measure is CROWNWeb. If a patient's data is missing in CROWNWeb, Medicare claims are used. Data is collected or generated and used by healthcare personnel during provision of care. The Committee had no major concerns with feasibility.

4. Use and Usability: 17-H; 6-M; 0-L; 0-I

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)

Rationale:

- The measure is currently reported in the Dialysis Facility Compare public reporting program and End Stage Renal Disease Quality Incentive Program (ESRD QIP) payment program. All Medicare-certified dialysis facilities that are eligible for this measure, and have at least 11 patients are "accountable entities". The Committee had no major concerns with use and usability.

5. Related and Competing Measures

- This measure was identified as potentially related or competing with:
  - NQF# 0323 Adult Kidney Disease-Hemodialysis Adequacy-Solute: Percentage of calendar months within a 12-month period suring which patients aged 18 years or older with a diagnosis of End Stage Renal Disease (ESRD) receiving hemodialysis three times a week for >= 90 days have a spKt/V >= 1.2
  - NQF# 1423 Minimum spKt V for Pediatric Hemodialysis Patients: Percentage of patient months for all pediatric (<18 years old) in-center HD patients who have been on hemodialysis for more than 90 days and dialyzing 3 or 4 times weekly whose average delivered dose of hemodialysis using the UKM or Daugirdas II formula) was between spKt/V = 1.2 and spKt/V<5.0.
  - NQF #2703 Minimum Delivered Hemodialysis Dose: Percentage of all patient months for patients whose average delivered dose of hemodialysis using the UKM or Daugirdas II formula) was between spKt/V >= 1.2 and spKt/V =< 5.0
  - NQF#2705 Delivered Dose of Dialysis Above Minimum: Percentage of all patient months for patients whose average delivered dose of dialysis (either hemodialysis or peritoneal dialysis) met the specified threshold during the reporting period.
- The Committee was unable to discuss related and competing measures during the in-person meeting and had the opportunity to do so during the post-comment call. NQF #2703 and NQF #2705 were not recommended by the Committee so were not included in the discussion. The Committee concluded that the remaining measures were related but not competing. The Committee recommended and the developers agreed to work together to harmonize these measures where possible.

Standing Committee Recommendation for Endorsement with Potential for Reserve Status: 22-Y; 0-N

6. Public and Member Comment

- Three commenters were generally in support of this measure for reserve status. Two of these commenters requested information on stipulations made by the Standing Committee during the In-

0249 Delivered Dose of Hemodialysis Above Minimum
Person. o Developer Response: The specifications have been revised to use the term "weekly Kt/Vurea" instead of "spKt/V", and we have clarified the measurement period for pediatric patients (within the past 6 months). Allowing facilities to exclude those patients for which RRF cannot be measured could potentially encourage gaming of this measure. This is consistent with the way missing data are treated in this measure (missing Kt/V values are counted against the facility). In addition, our ability to assess whether a facility evaluated RRF is not currently feasible using the data available in CROWNWeb or Medicare Claims. We have revised the evidence form for this measure to remove the reference to pediatric patients.
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

856

0255 Measurement of Serum Phosphorus Concentration
Submission | **Specifications**
Description: Percentage of all peritoneal dialysis and hemodialysis patient months with serum or plasma phosphorus measured at least once within the month. **Numerator Statement**: Number of dialysis patient months in the denominator with serum or plasma phosphorus measured at least once within the reporting month. **Denominator Statement**: Number of patient-months among in-center hemodialysis, home hemodialysis, or peritoneal dialysis patients under the care of the dialysis facility for the entire reporting month **Exclusions**: Exclusions that are implicit in the denominator definition include all patients who have not been in the facility the entire reporting month. There are no additional exclusions for this measure. **Adjustment/Stratification**: No risk adjustment or risk stratification **Level of Analysis:** Facility **Setting of Care:** Dialysis Facility **Type of Measure**: Process **Data Source**: Electronic Clinical Data **Measure Steward**: Centers for Medicare & Medicaid Services (CMS)
STANDING COMMITTEE MEETING [05/06/2015-05/07/2015] **1. Importance to Measure and Report: The measure meets the Importance criteria** *(1a. Evidence, 1b. Performance Gap)* 1a. Evidence: **6-H; 15-M; 0-L; 0-I;** 1b. Performance Gap: **0-H; 6-M; 16-L; 1-I** Rationale: • The developer presents the measure focus as the facility´s process of measuring serum or plasma phosphorus each month for End Stage Renal Disease (ESRD) dialysis patients. They provided the following path as the process leads to the improvement of mortality: Measure serum or plasma phosphorus--> Assess value-->Identify problem-->Identify treatment options-->Administer the appropriate treatment-->Patient experiences improvement in mortality. • Developers also reference The Kidney Disease: Improving Global Outcomes (KDIGO) clinical practice guidelines, and cites additional sources of evidence. Three separate Technical Expert Panels (TEPs) were involved in the development and maintenance of the measure. The TEPs found no randomized control trials providing strong evidence to inform healthcare providers as to the efficacy of phosphorus lowering strategies on improvement in clinical outcomes. • The Committee discussed the measure evidence and found that the KDIGO guidelines provided did not match the measure specifications. KDIGO guidelines state for chronic kidney disease (CKD), phosphorous

0255 Measurement of Serum Phosphorus Concentration
levels should be measured every one to three months and the measure requires a monthly phosphorous. The evidential data provided is largely focused around phosphate levels and not the act of measuring phosphate levels. Despite the discrepancy in the actual process of measuring phosphorous levels, the Committee rated this measure as moderately satisfying the evidence criteria. • Performance gap data provided by the developer noted that consistently monitoring phosphorous levels helps to ensure the regulation of patient morbidity and mortality. Additionally, routine blood tests will assist in the detection and monitoring for abnormal phosphorous balance. • Developers provided information on the performance scores of the more than 6,000 facilities that housed at least a single eligible patient. Using the 2013 CROWNWeb data, the median data were calculated at 92%. • Committee members noted the high percentage of performance at the 50th percentile stating there was not much room for improvement. Questioning whether or not there were factors to be improved upon, members agreed that there was only slight opportunity for improvement and voted to consider the measure for endorsement with reserve status.
2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u> *(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)* 2a. Reliability: **4-H; 18-M; 0-L; 0-I**; 2b. Validity: **3-H; 19-M; 1-L; 0-I** <u>Rationale</u>: • Some members asked for clarification of whether or not the denominator truly excluded patients who had not been in the facility for the entire month. Developers clarified that a patient must be out of the facility for an entire 30 calendar days during the reporting month to be included in the denominator exclusion. • The assessment of reliability was based on facility-level Pearson correlation coefficients between the current performance month and the previous month for 2013 reporting months (January – December 2013). Pearson correlation coefficients of each pair of the current and preceding months ranted from 0.72 – 0.90 and were statistically significant ($p<0.0001$). Monthly IURs ranged from 0.95 – 0.97. • There was confusion among committee members regarding the specifications related to transplant patients with functioning allografts. Additionally, inclusion of pediatric patients was a point of confusion since the evidence provided was only from adult patients. • Once the developer clarified that pediatric and adult patients were included in the denominator and in the testing, committee members concluded the measure was reliable and valid.
3. Feasibility: 18-H; 5-M; 0-L; 0-I *(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)* <u>Rationale</u>: • The data source for this measure is CROWNWeb. If patient data is missing in CROWNWeb, Medicare claims are used. Data is collected or generated and used by healthcare personnel during provision of care. The Committee had no major concerns with feasibility.
4. Use and Usability: 17-H; 6-M; 0-L; 0-I *(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)* <u>Rationale</u>: • The measure is currently in use in the End Stage Renal Disease Quality Improvement Program (ESRD QIP). The current use for quality improvement is internal and specific to the organization via the Renal Physicians Association (RPA) Quality Improvement Registry. • The measure was first publicly reported in the final QIP PY 2014 scores released in December 2013, so performance data over time cannot be assessed at this time. The Committee did not have any major concerns with the use and usability of this measure.
5. Related and Competing Measures

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• No related or competing measures noted.
Standing Committee Recommendation for Endorsement with Potential for Reserve Status: 22-Y; 0-N
6. Public and Member Comment • Three commenters were generally in support of this measure for reserve status.
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

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0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute
Submission | Specifications
Description: Percentage of calendar months within a 12-month period during which patients aged 18 years and older with a diagnosis of End Stage Renal Disease (ESRD) receiving hemodialysis three times a week for >= 90 days have a spKt/V >= 1.2 **Numerator Statement**: Calendar months during which patients have a spKt/V >= 1.2 **Denominator Statement**: All calendar months during which patients aged 18 years and older with a diagnosis of ESRD are receiving hemodialysis three times a week for >= 90 days **Exclusions**: There are no denominator exceptions. **Adjustment/Stratification**: No risk adjustment or risk stratification **Level of Analysis:** Clinician : Group/Practice, Clinician : Individual, Clinician : Team **Setting of Care:** Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other (Domiciliary, Rest Home, or Custodial Care Services) **Type of Measure**: Outcome **Data Source**: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry **Measure Steward**: Renal Physicians Association
STANDING COMMITTEE MEETING [05/06/2015-05/07/2015] **1. Importance to Measure and Report: The measure meets the Importance criteria** *(1a. Evidence, 1b. Performance Gap)* 1a. Evidence: **9-H; 12-M; 0-L; 0-I;** 1b. Performance Gap: **0-H; 4-M; 14-L; 3-I** Rationale: • The developer presented 2006 Kidney Disease Outcomes Quality Initiative (KDOQI) Clinical Practice Guidelines and Clinical Practice Recommendations, rated Grade A, as evidence to support this intermediate clinical outcome measure. The developer offered the rationale that adequate dialysis dose is strongly associated with better outcomes, including decreased mortality, fewer hospitalizations, decreased length of hospitalizations, and decreased hospital costs. The measure is presented as a clinician level measure as contrasted with the Center for Medicare and Medicaid Services (CMS) facility-level measure (NQF# 0249). Similar to measure NQF #0249, the Committee agreed that the evidence is strong. • The developer indicated that United States Renal Data System (USRDS) data has shown that 97% of patients obtaining a single pool Kt/V of greater than or equal to 1.2. Although the Committee noted that there is not much room for improvement, they agreed that the measure would be a good candidate for endorsement with reserve status.
2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria *(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)* 2a. Reliability: **3-H; 17-M; 2-L; 0-I**; 2b. Validity: **0-H; 19-M; 0-L; 2-I**

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Rationale:

- The developer confirmed that residual kidney function is a denominator exclusion and noted there was an inconsistency between the e-specifications and the measure information form. The Committee encouraged developers to correct this inconsistency and include residual kidney function in the measure. There is a small population of patients for whom this would be useful to include. In the interest of having patient focused care, less hemodialysis would be done on patients who have substantial residual kidney function. Tailoring the therapy appropriately when endogenous kidney function can be counted is a patient oriented and patient specific opportunity.
- It was noted that the detailed specifications are not granular enough to account for inter-organizational variability that might occur if one organization chooses an equilibrated Kt/V and they take the single pooled component of that.
- Reliability was tested by examining four different nephrology practices, with hemodialysis/peritoneal dialysis patients, participating in the Physician Quality Reporting Initiative (PQRI) (now known as Physician Quality Reporting System (PQRS)) program with hemodialysis/peritoneal dialysis patients. This included multiple visits at multiple sites across the country. Kappa values were calculated for inter-rater reliability and were exceptionally high, one or nearing one. The Committee had no major concerns with reliability.
- Validity testing was conducted at the measure score level. An expert panel was used to assess face validity of the measure. Face validity of the measure score as an indicator of quality was consistent and the Committee agreed that the results suggested sufficient validity.

3. Feasibility: 11-H; 11-M; 0-L; 0-I

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The data elements required are routinely measured as part of patient care and can be derived from CROWNWeb and electronic health records. The Committee agreed that collection of this data is feasible.

4. Use and Usability: 15-H; 5-M; 2-L; 0-I

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)

Rationale:

- The measure is currently in use in the Physician Quality Reporting Program (PQRS) and reported in Physician Compare. The current use for quality improvement is internal and specific to the organization via the Renal Physicians Association (RPA) Quality Improvement Registry. The Committee did not have any major concerns with use and usability.

5. Related and Competing Measures

- This measure was identified as potentially related or competing with:
    - NQF# 0249 Hemodialysis Adequacy Clinical Performance Measure III-Hemodialysis Adequacy--HD Adequacy--Minimum Delivered: Percentage of all adult (>=18 years old) patients in the sample for analysis who have been on hemodialysis for 90 days or more and dialyzing thrice weekly whose average delivered dose of hemodialysis (calculated from the last measurements of the month using the UKM or Daugirdas II formula) was a spKt/V >= 1.2 during the study period.
    - NQF# 1423 Minimum spKt V for Pediatric Hemodialysis Patients: Percentage of patient months for all pediatric (<18 years old) in-center HD patients who have been on hemodialysis for more than 90 days and dialyzing 3 or 4 times weekly whose average delivered dose of hemodialysis using the UKM or Daugirdas II formula) was between spKt/V = 1.2 and spKt/V<5.0.
    - NQF #2703 Minimum Delivered Hemodialysis Dose: Percentage of all patient months for patients whose average delivered dose of hemodialysis using the UKM or Daugirdas II formula) was between spKt/V >= 1.2 and spKt/V =< 5.0
    - NQF#2705 Delivered Dose of Dialysis Above Minimum: Percentage of all patient months for patients whose average delivered dose of dialysis (either hemodialysis or peritoneal dialysis) met

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the specified threshold during the reporting period. • The Committee was unable to discuss related and competing measures during the in-person meeting and had the opportunity to do so during the post-comment call. NQF #2703 and NQF #2705 were not recommended by the Committee, so those measures were included in the discussion. The Committee concluded that the remaining measures were related but not competing. The Committee recommended and the developers agreed to work together to harmonize these measures where possible.
Standing Committee Recommendation for Endorsement with Potential for Reserve Status: 21-Y; 0-N
6. Public and Member Comment • Four commenters were generally in support of this measure for reserve status.
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

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1454 Proportion of patients with hypercalcemia
Submission | Specifications
Description: Percentage of adult dialysis patients with a 3-month rolling average of total uncorrected calcium (serum or plasma) greater than 10.2 mg/dL (hypercalcemia) **Numerator Statement**: Number of patient-months in the denominator with 3-month rolling average of total uncorrected serum (or plasma) calcium greater than 10.2 mg/dL **Denominator Statement**: Number of patient-months among adult (greater than or equal to 18 years old) in-center hemodialysis, home hemodialysis, or peritoneal dialysis patients under the care of the dialysis facility for the entire reporting month who have had ESRD for greater **Exclusions**: Exclusions that are implicit in the denominator definition include all patients who have not been in the facility the entire reporting month (transient patients), and patients who have had ESRD for <91 days. There are no additional exclusions for this measure. **Adjustment/Stratification**: No risk adjustment or risk stratification **Level of Analysis:** Facility **Setting of Care:** Dialysis Facility **Type of Measure**: Intermediate Clinical Outcome **Data Source**: Electronic Clinical Data **Measure Steward**: Centers for Medicare & Medicaid Services (CMS)
STANDING COMMITTEE MEETING [05/06/2015-05/07/2015] **1. Importance to Measure and Report: The measure does not meet the Importance criteria** *(1a. Evidence, 1b. Performance Gap)* 1a. Evidence: **0-H; 1-M; 22-L; 0-I**; Insufficient Evidence with Exception: **19-Y; 4-N;** 1b. Performance Gap: **0-H; 0-M; 21-L; 2-I** Reconsideration Performance Gap: **0-H; 7-M; 6-L; 5-I** Rationale: • For this intermediate outcome measure, evidence provided by the developer included two clinical guidelines and an April 2013 Technical Expert Panel (TEP) review. The Kidney Disease: Improving Global Outcomes (KDIGO) graded the evidence 2D, very low evidence, and the Kidney Disease Outcomes Quality Initiative (KDOQI) was expert opinion only. The TEP did not recommend any revisions to the measure. • While the Committee acknowledged that this measure was an important safety measure that filled a gap area in bone and mineral disease, members agreed that evidence demonstrating that calcium concentrations less than 10.2 mg/dL place the patient at increased risk of cardiovascular events and all-

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cause mortality was largely associative. The Committee allowed the measure to move forward on an evidence exception. • The developer provided January – December 2013 CROWNWeb clinical data on performance scores generated among 5,973 facilities that had at least one eligible patient that indicate the mean gap of performance is two point one percent. • Disparities data were also provided that imply that there are statistically significant changes in performance scores depending on sex, race, ethnicity, and age; however, the Committee found it was not a clinically meaningful difference. • The Committee concluded there was very little room for improvement and the current gap did not warrant a national performance measure. • The Committee considered the measure for endorsement with reserve status due to the fact that there were no other bone and mineral measures; however, determined that losing endorsement would not affect current performance of the measure. • Some committee members suggested lowering the measure threshold to allow for a greater gap in care, however, the developer stated there was no evidence for a lower threshold and two previous TEPs had supported the current threshold of less than 10.2 mg/dL. • The Committee encouraged the developer to consider alternative bone and mineral measures. The developer reassured the Committee that they have convened multiple TEPs in order to develop additional measures in this area but have not been successful thus far to create another strong, evidence supported measure in this area. • At the post-comment call, the Committee decided to reconsider this measure based on the information provided by the developer. While the measure did not pass the gap criterion, the Committee decided they would like to consider this measure for reserve status.
2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria *(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)* 2a. Reliability: **0-H; 15-M; 2-L; 0-I**; 2b. Validity: **0-H; 17-M; 0-L; 0-I** Rationale: • The developer used CROWNWeb and Medicare claims data from January 2013 – December 2013 to calculate the inter-unit reliability (IUR) for the 12 month period to assess the reliability of this measure. The IUR is 0.86 with the confidence interval being 0.78 - 0.84. This suggests that 86% of variation in the measure is attributed to between facility variance. The Committee agreed that the testing results suggest this measure is reliable • The developer assessed validity using Poisson regression analysis to identify the predictive strength of facility level performance scores for hypercalcemia on mortality, using the 2013 standardized mortality ratio. The results of the Poisson regression suggest that facilities with a higher percentage of patient-months with hypercalcemia experience a higher standardized mortality rate relative to facilities with a lower percentage of patients with hypercalcemia. The Committee agreed that the testing results suggest the measure is valid.
3. Feasibility: 12-H; 5-M; 0-L; 0-I *(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)* Rationale: • The data elements required are routinely measured as part of patient care and can be derived from CROWNWeb and electronic health records. The Committee agreed that collection of this data is feasible.
4. Use and Usability: 6-H; 12-M; 0-L; 0-I *(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)* Rationale:

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• The measure is currently in use in the Dialysis Facility Compare program. The Committee did not have any major concerns with the use and usability of this measure.
5. Related and Competing Measures • No related or competing measures noted.
Standing Committee Recommendation for Endorsement with Potential for Reserve Status: 19-Y; 0-N
6. Public and Member Comment • Two commenters agreed with the Committee's initial recommendation to not endorse this measure citing a poor measure would be more harmful than no measure. o Developer Response: During the recent DFC performance period, 1538 facilities had 0% of patients with hypercalcemia, 1494 facilities had 1% of patients with hypercalcemia, 889 facilities had 2%, 594 had 3%, and 1360 facilities had 4% or more of their patients with hypercalcemia. The distribution demonstrates the success of many facilities in their ability to achieve extremely low rates of hypercalcemia, as over 3000 facilities have 1% or less patients with hypercalcemia. However, when one looks at the average national performance of 2%, they may interpret that statistic as demonstrating the absence of a performance gap for this safety measure. That interpretation ignores the highly skewed distribution of facility performance for this safety measure as shown in the figure. For this safety measure, the performance gap is clearly demonstrated by comparing the 1360 US dialysis facilities (23% of the total reported facilities) with 4% or greater patients with hypercalcemia to the majority of dialysis facilities that achieve extremely low hypercalcemia rates. We maintain that the measure is important for safety monitoring, as nearly one-fourth of US dialysis facilities are relatively poor at preventing hypercalcemia, an intermediate outcome consistently associated with poorer patient survival and clearly influenced by providers' bone and mineral disease management practices.
7. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X; A-X
8. Board of Directors Vote: Y-X; N-X
9. Appeals

Measures Where Consensus Is Not Yet Reached

1423 Minimum spKt/V for Pediatric Hemodialysis Patients

Submission | Specifications

Description: Percentage of patient months for all pediatric (<18 years old) in-center HD patients who have been on hemodialysis for more than 90 days and dialyzing 3 or 4 times weekly whose average delivered dose of hemodialysis using the UKM or Daugirdas II formula) was between spKt/V = 1.2 and spKt/V<5.0.

Numerator Statement: Number of patient months for patients in the denominator whose delivered dose of hemodialysis (calculated from the last measurement of the month (using the UKM or Daugirdas II formula) was between a spKt/V >= 1.2 and spKt/V =<5.0.

Denominator Statement: To be included in the denominator for particular month, a patient must have been <18 years old, have had ESRD for greater than 90 days, dialyzing 3 or 4 times weekly, and must be assigned to that facility for the entire month.

Exclusions: Exclusions that are implicit in the denominator definition include

1) patients on home hemodialysis,

2) patients on ESRD less than 91 days

3) patients receiving dialysis less than 3x/week or greater than 4x/week and

4) patients who have not been in the facility for the entire reporting month

There are no additional exclusions for this measure.

Adjustment/Stratification: No risk adjustment or risk stratification

Level of Analysis: Facility

Setting of Care: Dialysis Facility

Type of Measure: Outcome

Data Source: Administrative claims, Electronic Clinical Data

Measure Steward: Centers for Medicare & Medicaid Services (CMS)

STANDING COMMITTEE MEETING [05/06/2015-05/07/2015]

1. Importance to Measure and Report: Consensus not reached on the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **0-H; 9-M; 11-L; 3-I**; Insufficient Evidence with Exception: **14-Y; 9-N**; 1b. Performance Gap: **1-H; 17-M; 2-L; 2-I**

Rationale:

- One clinical practice guideline (Clinical Practice Guidelines for Hemodialysis Adequacy: Kidney Disease Outcomes Quality Initiative (KDOQI) Guideline 8. Pediatric Hemodialysis Prescription and Adequacy: 2006) and a systemic review of literature by a technical expert panel (TEP) are referenced. The KDOQI guideline was graded as A (strong evidence).
- The developer clarified that the specifications are for patients dialyzing three or four times a week whose average delivered dose of hemodialysis using urea kinetic modelling (UKM) or Daugirdas II are a single pool Kt/V of 1.2. The rationale is to ensure that children who are dialyzing four times a week would still be evaluated for adequate dialysis.
- The Committee noted that as in many pediatric measures, there is not much evidence for the pediatric population. The measure is based on adult data with the assumption that children should be doing at least as well as adults do, and the Committee noted that is a reasonable position to take. The referenced literature indicates some need for a higher dose of dialysis for children with respect to growth and development. Committee members questioned the evidence for a rationale for an upper limit (spKt/V<5).
- Committee members raised concerns about the measure as constructed and that using a single pool Kt/V in patients dialyzed at different frequencies is the wrong tool. The UKM or Daugirdas formulas are

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designed for a fixed number of dialysis treatments a week, not "three or four". For a variable number of treatments a method such as weekly standard Kt/V must be used. Committee members noted that when looking at varying frequencies of dialysis, rather than using a single pool Kt/V, the tool that should be used is a continuous tool, like the standard Kt/V. Some Committee members also raised concerns that setting a minimum of 1.2 Kt/V, with whatever frequency, could be a disincentive to put patients on increasing frequency of dialysis because that would not change their Kt/V. The incentive would be to increase time during single sessions instead of more frequent dialysis, and that is not as efficient a treatment as increasing the frequency would be. • The developer noted that analysis using CROWNWeb and Medicare claims data from January to December 2013 indicate a mean score of 85.6% (13.0. The sample size included 180 hemodialysis patients and 1,195 patient months in facilities with at least 11 eligible pediatric patients. • The Committee did not reach consensus on the exception to evidence criterion. The major concerns were the evidence supporting three times and not four times per week. Only a small number of patients require dialysis more than three times per week and this is a very important measure for pediatricians.
2. Scientific Acceptability of Measure Properties: Consensus not reached on the Scientific Acceptability criteria *(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)* 2a. Reliability: **1-H; 11-M; 7-L; 2-I**; Second vote: **0-H; 11-M; 11-L; 1-I**; 2b. Validity: **0-H; 18-M; 4-L; 1-I** Rationale: • The developer used CROWNWeb and Medicare claims data from January 2013 – December 2013 to calculate the inter-unit reliability (IUR) for the 12 month period to assess the reliability of this measure. The IUR is 0.812 with the confidence interval being (0.633, 0.931). This suggests that 81% of variation in the measure is attributed to between facility variation. • The Committee did not reach consensus while voting on reliability. There were concerns with specifications. Members noted that the distinction in the Daugirdas II method and the UKM are fundamentally different and would yield differing inter-unit and inter-organizational variation. One member noted that the lack of specificity in the blood drawing techniques and the timing within a dialysis week all impact the result of the tests. • Validity was assessed at the measure score level and was established on the basis of face validity. Clinical technical expert panel members agreed that this measure will improve quality of care for pediatric hemodialysis patients.
3. Feasibility: 14-H; 8-M; 1-L; 0-I *(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)* Rationale: • The primary data source for this measure is administrative claims and electronic clinical data through CROWNWeb. All data elements are in defined fields in a combination of electronic sources. The Committee had no major concerns with feasibility.
4. Use and Usability: 17-H; 6-M; 0-L; 0-I *(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)* Rationale: • The measure is currently publicly reported in Dialysis Facility Compare and the End Stage Renal Disease Quality Incentive Program (ESRD QID) payment program. All Medicare-certified facilities that are eligible for the measure, and have at least 11 patients are considered accountable entities for QIP. The Committee had no major concerns with use and usability.
5. Related and Competing Measures • This measure was identified as potentially related or competing with: o NQF# 0249 Hemodialysis Adequacy Clinical Performance Measure III-Hemodialysis Adequacy - HD Adequacy - Minimum Delivered: Percentage of all adult (>=18 years old) patients in the sample

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for analysis who have been on hemodialysis for 90 days or more and dialyzing thrice weekly whose average delivered dose of hemodialysis (calculated from the last measurements of the month using the UKM or Daugirdas II formula) was a spKt/V >= 1.2 during the study period. o NQF# 0323 Adult Kidney Disease Hemodialysis Adequacy Solute: Percentage of calendar months within a 12-month period suring which patients aged 18 years or older with a diagnosis of End Stage Renal Disease (ESRD) receiving hemodialysis three times a week for >= 90 days have a spKt/V >= 1.2 o NQF #2703 Minimum Delivered Hemodialysis Dose: Percentage of all patient months for patients whose average delivered dose of hemodialysis using the UKM or Daugirdas II formula) was between spKt/V >= 1.2 and spKt/V =< 5.0 o NQF#2705 Delivered Dose of Dialysis Above Minimum: Percentage of all patient months for patients whose average delivered dose of dialysis (either hemodialysis or peritoneal dialysis) met the specified threshold during the reporting period. • The Committee was unable to discuss related and competing measures during the in-person meeting and will have the opportunity to do so during the Post-Comment Call. NQF #2703 and NQF #2705 were not recommended by the Committee, so those measures will not be included in the discussion.
Standing Committee Recommendation for Endorsement: 10-Y; 13-N

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2702 Post-Dialysis Weight Above or Below Target Weight
**Submission	Specifications**
Description: Percentage of patients with an average post-dialysis weight >/= 1 kg above or below the prescribed target weight. **Numerator Statement**: Number of patients* from the denominator with an average post-dialysis weight >/= 1 kg above or below the prescribed target weight during the calculation period.** *To address the fact that patients may contribute varying amounts of time to the annual denominator population, results will be reported using a "patient-month" construction. ** The calculation period is defined as the same week that the monthly Kt/V is drawn. **Denominator Statement**: Number of adult in-center hemodialysis patients in an outpatient dialysis facility undergoing chronic maintenance hemodialysis during the calculation period. **Exclusions**: The following patients are excluded from the denominator population: 1. Patients <18 years of age (implicit in denominator definition). 2. Home dialysis patients (implicit in denominator definition). 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) in the reporting month. 6. Kidney transplant recipients with a functioning graft. 7. Facilities treating <XX adult in-center hemodialysis patients during the reporting month. (Number currently being evaluated.) **Adjustment/Stratification**: No risk adjustment or risk stratification **Level of Analysis:** Facility **Setting of Care:** Other (Dialysis facility) **Type of Measure**: Intermediate Clinical Outcome **Data Source**: Electronic Clinical Data **Measure Steward**: Kidney Care Quality Alliance (KCQA)
STANDING COMMITTEE MEETING [05/06/2015-05/07/2015] **1. Importance to Measure and Report: The measure meets the Importance criteria**

2702 Post-Dialysis Weight Above or Below Target Weight

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **0-H; 3-M; 7-L; 9-I**; Insufficient Evidence with Exception: **10-Y; 9-N**; 1b. Performance Gap: **3-H; 14-M; 0-L; 2-I**

Rationale:

- The developer provided data that includes a Kidney Disease Outcomes Quality Initiative (KDOQI) clinical guideline and a systematic review of literature. The (KDOQI) Clinical Practice Guidelines for Hemodialysis Adequacy: Achievement of optimal "dry" weight graded the evidence as level A (high evidence).
- The developer acknowledged the pre-meeting comments and the workgroup call where discussion centered around the identification of the one kilogram weight as the target weight window to be achieved. Evidence suggests that improved volume control can attenuate cardiovascular issues, making a strong case for the diligent avoidance of volume overload.
- Based on the evidence submitted, the Committee summarized that there is a disconnect between the evidence that is presented and the actual guideline.
- A committee member noted that fluid overload hospitalizations are an enormous component of comorbidity in this population and that shining a light on those particular issues through the achievement of assessment and achievement of an appropriate target weight key issues in trying to look at how to prevent fluid overload hospitalizations.
- The Committee noted this measure is a companion to the ultrafiltration measure and it seems to be important in dialysis. In discussion of the performance gap, the Committee reviewed data from over 400,000 hemodialysis treatments across three organizations. The interquartile range was 14% suggesting that there was a potential for some intervention that might improve health; that this measure lends itself to that.

2. Scientific Acceptability of Measure Properties: The measure meets the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **1-H; 13-M; 5-L; 0-I**; 2b. Validity: **1-H; 16-M; 2-L; 0-I**

Rationale:

- Testing was performed at the performance measure score level. The measured entity is the dialysis facility. Testing encompassed 4,252 dialysis facilities. For both the "every session" and the "abbreviated" measure constructs, the intra-class correlation for all organizations is high, indicating a good level of reliability within facilities over time and considerable within-facility stability with respect to performance on this measure over the course of the 12 months. Additionally, the estimated between-facility variation is greater than the within-facility variation across all organizations, which, when considered in light of the high intra-class correlation coefficients, suggests that both the "every session" and "abbreviated" constructs of the measure are reliable and differentiate between facilities.
- Discussion of the specifications centered around the lack of exclusions for more than three treatments during the week; and the fact that there are no adjustments or exclusions for patient preference.
- The testing data, analysis of variance (ANOVA), indicated a moderately high interclass correlation and a high ratio of between to within facility correlations.
- This measure correlates to the standardized ratios that have been discussed and has high face validity by the assessment of the KCQA Committee tasked with developing the measure.

3. Feasibility: 1-H; 14-M; 3-L; 1-I

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The data are collected or generated and used by healthcare personnel during provision of care.
- Feasibility has the same issues that were discussed in #2701; CROWNWeb would have to be modified to accept the data.

4. Use and Usability: 1-H; 12-M; 5-L; 1-I

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b.

2702 Post-Dialysis Weight Above or Below Target Weight

Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)

Rationale:

- This is a new measure and a presumption was made that it could be used in public reporting and for payment purposes. The developer reports it is currently in use by at least one large dialysis organization for internal quality reporting purposes.
- The Committee discussed the unintended consequences of patient preference or belief limiting how to address target weight. Overall, the Committee determined the measure was usable.

5. Related and Competing Measures

- No related or competing measures noted.

Standing Committee Recommendation for Endorsement: 11-Y; 8-N

Measures Not Recommended

1454 Proportion of patients with hypercalcemia

Submission

Description: Percentage of adult dialysis patients with a 3-month rolling average of total uncorrected calcium (serum or plasma) greater than 10.2 mg/dL (hypercalcemia)

Numerator Statement: Number of patient-months in the denominator with 3-month rolling average of total uncorrected serum (or plasma) calcium greater than 10.2 mg/dL

Denominator Statement: Number of patient-months among adult (greater than or equal to 18 years old) in-center hemodialysis, home hemodialysis, or peritoneal dialysis patients under the care of the dialysis facility for the entire reporting month who have had ESRD for greater

Exclusions: Exclusions that are implicit in the denominator definition include all patients who have not been in the facility the entire reporting month (transient patients), and patients who have had ESRD for <91 days. There are no additional exclusions for this measure.

Adjustment/Stratification: No risk adjustment or risk stratification

Level of Analysis: Facility

Setting of Care: Dialysis Facility

Type of Measure: Intermediate Clinical Outcome

Data Source: Electronic Clinical Data

Measure Steward: Centers for Medicare & Medicaid Services (CMS)

STANDING COMMITTEE MEETING [05/06/2015-05/07/2015]

1. Importance to Measure and Report: The measure does not meet the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **0-H; 1-M; 22-L; 0-I**; Insufficient Evidence with Exception: **19-Y; 4-N;** 1b. Performance Gap: **0-H; 0-M; 21-L; 2-I**

Rationale:

- For this intermediate outcome measure, evidence provided by the developer included two clinical guidelines and an April 2013 Technical Expert Panel (TEP) review. The Kidney Disease: Improving Global Outcomes (KDIGO) graded the evidence 2D, very low evidence, and the Kidney Disease Outcomes Quality Initiative (KDOQI) was expert opinion only. The TEP did not recommend any revisions to the measure.
- While the Committee acknowledged that this measure was an important safety measure that filled a gap area in bone and mineral disease, members agreed that evidence demonstrating that calcium concentrations less than 10.2 mg/dL place the patient at increased risk of cardiovascular events and all-cause mortality was largely associative. The Committee allowed the measure to move forward on an evidence exception.

~~1454 Proportion of patients with hypercalcemia~~

- ~~The developer provided January – December 2013 CROWNWeb clinical data on performance scores generated among 5,973 facilities that had at least one eligible patient that indicate the mean gap of performance is two point one percent.~~
- ~~Disparities data was also provided that imply that there are statistically significant changes in performance scores depending on sex, race, ethnicity, and age; however, the Committee found it was not a clinically meaningful difference.~~
- ~~The Committee concluded there was very little room for improvement and the current gap did not warrant a national performance measure.~~
- ~~The Committee considered the measure for endorsement with reserve status due to the fact that there were no other bone and mineral measures; however, determined that losing endorsement would not affect current performance of the measure.~~
- ~~Some committee members suggested lowering the measure threshold to allow for a greater gap in care, however, the developer stated there was no evidence for a lower threshold and two previous TEPs had supported the current threshold of less than 10.2 mg/dL.~~
- ~~The Committee encouraged the developer to consider alternative bone and mineral measures. The developer reassured the Committee that they have convened multiple TEPs in order to develop additional measures in this area but have not been successful thus far to create another strong, evidence supported measure in this area.~~

864

1660 ESRD Patients Receiving Dialysis: Hemoglobin Level <9g/dL

Submission

Description: Percentage of calendar months within a 12-month period during which patients aged 18 years and older with a diagnosis of ESRD who are receiving hemodialysis or peritoneal dialysis have a Hemoglobin level <9g/dL

Numerator Statement: Calendar months during which patients have a Hemoglobin level <9g/dL*

*The hemoglobin values used for this measure should be a most recent (last) hemoglobin value recorded for each calendar month

Denominator Statement: All calendar months during which patients aged 18 years and older with a diagnosis of ESRD are receiving hemodialysis or peritoneal dialysis

Exclusions: Documentation of medical reason(s) for patient having a Hemoglobin level <9g/dL (eg, patients who have non-renal etiologies of anemia [eg, sickle cell anemia or other hemoglobinopathies, multiple myeloma, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy], other medical reasons)

Adjustment/Stratification: No risk adjustment or risk stratification

Level of Analysis: Clinician : Group/Practice, Clinician : Individual, Clinician : Team

Setting of Care: Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other (Domiciliary, Rest Home or Custodial Care Services)

Type of Measure: Intermediate Clinical Outcome

Data Source: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records, Electronic Clinical Data : Registry

Measure Steward: Renal Physicians Association

STANDING COMMITTEE MEETING [05/06/2015-05/07/2015]

1. Importance to Measure and Report: The measure does not meet the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **1-H; 9-M; 6-L; 7-I;** 1b. Performance Gap: **0-H; 5-M; 16-L; 2-I**

Rationale:

- The developer provided evidence that includes a Kidney Disease Outcomes Quality Initiative (KDOQI)

1660 ESRD Patients Receiving Dialysis: Hemoglobin Level <9g/dL

clinical guideline and a systematic review of literature.

- The Committee agreed there was strong evidence supporting the statement that in dialysis and non-dialysis patients with chronic kidney disease (CKD) receiving erythropoietin-stimulating agent (ESA) therapy, the hemoglobin target should generally be in the range of 11.0 to 12.0 g/dL based on the results of 14 randomized controlled trials (RCTs) in dialysis patients and 15 RCTs in non-dialysis patients. The Committee could not come to consensus on less than 9g/dL as an acceptable cutoff. Due to the lack of information to support a specific hemoglobin cutoff value in defining an optimum hemoglobin target, KDOQI graded this measure as CPR (Clinical Practice Recommendation), the lowest of three grades.
- Though the measure sets less than 9g/dL as a floor, many committee members expressed concerns regarding inadvertently creating a target range which is not currently supported by evidence and that might increase the risk of transfusions which may negatively impact candidacy for kidney transplantation.
- The developer agreed ESA therapy should be individualized to the patient in order to maintain a hemoglobin target that allows the patient to have the best quality of life. However, they reassured the Committee that less than 9g/dL was the appropriate cutoff for a majority of patients and that they had actually seen an increase in transfusions due to a lack of a target range.
- While some committee members accepted the developer's explanation, others still had concerns about the lack of evidence supporting a range. As a result, the Committee was not able to come to consensus on the evidence.
- The developer provided data from the 2008 Physician Quality Reporting System (PQRS) which demonstrated a mean of 36.51 percent of patients did not receive optimal treatment to achieve KDOQI set hemoglobin target of 11-12 g/dL. Among all hemodialysis patients in 2012, 5.4 percent had a hemoglobin less than 9g/dL. The developers noted disparities in anemia care in the African-American population, which also has a higher prevalence of CKD.
- While the Committee agreed it was an important safety measure, they eventually concluded that the gap of 5.4% was not sufficient to warrant a national performance measure. Based on information provided by the developer, the Committee decided to reconsider this measure at the post-comment call. However, after further discussion, they stood by their decision that the gap was not sufficient to warrant a national performance measure.

865

2699 Anemia of chronic kidney disease: Dialysis facility standardized transfusion ratio (STrR)

Submission

Description: The risk adjusted facility level transfusion ratio "STrR" is specified for all adult dialysis patients. It is a ratio of number of eligible red blood cell transfusion events observed in patients dialyzing at a facility, to the number of eligible transfusions that would be expected under a national norm, after accounting for the patient characteristics within each facility. Eligible transfusions are those that do not have any claims pertaining to the comorbidities identified for exclusion, in the one year look back period prior to each observation window.

Numerator Statement: Number of eligible observed red blood cell transfusion events. Events are defined as transfer of one or more units of blood or blood products into recipient's blood stream (code set is provided in the numerator details) among patients dialyzing at the facility during the inclusion episodes of the reporting period. Inclusion episodes are those that do not have any claims pertaining to the comorbidities identified for exclusion, in the one year look back period prior to each observation window.

Denominator Statement: Number of eligible red blood cell transfusion events (as defined in the numerator statement) that would be expected among patients at a facility during the reporting period, given the patient mix at the facility. Inclusion episodes are those that do not have any claims pertaining to the comorbidities identified for exclusion, in the one year look back period prior to each observation window.

Exclusions: All transfusions associated with transplant hospitalization are excluded. Patients are excluded if they have a Medicare claim for hemolytic and aplastic anemia, solid organ cancer (breast, prostate, lung, digestive tract and others), lymphoma, carcinoma in situ, coagulation disorders, multiple myeloma, myelodysplastic syndrome and myelofibrosis, leukemia, head and neck cancer, other cancers (connective tissue, skin, and others), metastatic

cancer, and sickle cell anemia within one year of their patient at risk time. Since these comorbidities are associated with higher risk of transfusion and require different anemia management practices that the measure is not intended to address, every patient's risk window is modified to have at least 1 year free of claims that contain diagnoses on the exclusion list.

Adjustment/Stratification: Statistical risk model

Level of Analysis: Facility

Setting of Care: Dialysis Facility

Type of Measure: Outcome

Data Source: Administrative claims, Electronic Clinical Data

Measure Steward: Centers for Medicare and Medicaid Services (CMS)

STANDING COMMITTEE MEETING [05/06/2015-05/07/2015]

1. Importance to Measure and Report: Consensus Not Reached for the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **12-Y; 10-N;** 1b. Performance Gap: **1-H; 10-M; 3-L; 9-I**

Rationale:

- The measure looks at a dialysis facility's Standardized Transfusion Ratio (STrR). The rationale behind the measure is that there have been regulatory and policy changes affecting erythropoiesis stimulating agent (ESA) use in dialysis patients that could result in more transfusions.
- The developer cited three Kidney Disease: Improving Global Outcomes (KDIGO) guidelines and a 2013 Technical Expert Panel (TEP) that reviewed a suite of articles related to transfusions in end stage renal disease (ESRD) patients and advised the developers. Two guidelines related to reducing blood transfusions were graded 1B (moderate evidence that is recommended). The third guideline, which focused on managing chronic anemia without excessive risk of ESAs, was graded 2C (low evidence that is suggested).
- The Committee questioned the merits of the measure as an outcome measure. The Committee disagreed on if STrR should be considered an outcome due to ambiguity around how quality of care can be interpreted and improved. Based on the submission, the Committee decided to move forward voting on the measure as an outcome measure, however, were not able to come to consensus on whether the evidence supported a relationship between the measured health outcome and at least one clinical action.
- While STrR data from 2009-2012 provided by the developer displayed variation in performance between facilities in the 25% to 75% quartile, many committee members noted that it is difficult to determine and interpret a gap without a STrR target.
- STrR data by race, sex and ethnicity indicate relatively little variation and no substantial disparities among these groups. The Committee was not able to come to consensus on whether there was enough of a sufficient performance gap to warrant a national standard.

2. Scientific Acceptability of Measure Properties: The measure does not meet the Scientific Acceptability criteria

(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)

2a. Reliability: **0-H; 7-M; 13-L; 3-I**

Rationale:

- A one-way analysis of variance (ANOVA) was used to assess the reliability of the STrR data among ESRD dialysis patients during 2009-2012. The inter-unit reliability (IURs) for the one-year STrR, across the years 2009, 2010, 2011 and 2012, has a range of 0.49-0.55, which indicates that around half of the variation in the one-year STrR can be attributed to between-facility differences and half to within-facility variation. Larger facilities are expected to have a higher IUR.
- Some committee members noted that the decision to transfuse was at the clinician level and not facility thus it was unclear if this measure was at the appropriate level of analysis.
- The developer emphasized the technical expert panel (TEP) felt strongly about setting the measure at the facility level due to the fact dialysis facilities are held responsible under the Conditions for Coverage (CFC)

2699 Anemia of chronic kidney disease: Dialysis facility standardized transfusion ratio (STrR)
494 regulations for anemia and are the sole source for administration of ESAs in chronic dialysis. • Many committee members expressed concerns about possible differential treatment of data from procedure codes and revenue centers, and recommended empirical testing be conducted by the developer. • Due to concerns that the measure reflects transfusion practices and behaviors at the hospital level instead of quality of care at dialysis facilities, the Committee concluded this measure was not reliable.

866

2700 Ultrafiltration rate greater than 13 ml/kg/hr
Submission
Description: Percentage of patients months for patients with an ultrafiltration rate (UFR) greater than 13 ml/kg/hr. **Numerator Statement**: Number of patient months for adult ESRD patients at a dialysis facility with an ultrafiltration rate greater than 13 ml/kg/hr. **Denominator Statement**: Total number of patient months for adult patients reported at a dialysis facility undergoing hemodialysis (HD). **Exclusions**: Exclusions that are implicit in the denominator definition include 1) pediatric patients 2) PD patients, 3) patients new to ESRD (less than 90 days on chronic dialysis) and 4) patients that have not been with the same facility for the entire reporting month (transient patients). There are no additional exclusions for this measure. **Adjustment/Stratification**: No risk adjustment or risk stratification **Level of Analysis:** Facility **Setting of Care:** Dialysis Facility **Type of Measure**: Outcome **Data Source**: Electronic Clinical Data **Measure Steward**: Centers for Medicare and Medicaid Services (CMS)
STANDING COMMITTEE MEETING [05/06/2015-05/07/2015] **1. Importance to Measure and Report: Consensus not reached on the Importance criteria** *(1a. Evidence, 1b. Performance Gap)* 1a. Evidence: **0-H; 9-M; 6-L; 3-I;** 1b. Performance Gap: **0-H; 17-M; 1-L; 0-I** Rationale: • The developer presented one clinical practice guideline, 2009 United Kingdom Renal Association Guidelines for Hemodialysis. Guideline 8.3 states that "we suggest that the maximum hourly ultrafiltration rate during hemodialysis should not exceed 10ml/kg/hour". The evidence was given a grade of 2C (low evidence). • The developer provides additional evidence on the effect of different ultrafiltration thresholds that is based on several observational studies. A few committee members urged caution while interpreting the data since the evidence was largely associative and not causative data. Overall, the Committee was not able to reach consensus on the quality of the evidence provided. • The developer provided 2013 CROWNWeb data from 400,308 adult End Stage Renal Disease (ESRD) patients on hemodialysis from 5,556 dialysis facilities with a minimum of 11 patients. The facility level mean was 15.9% of patients at a facility with UFR > 13 ml/kg/hr (standard deviation of 7.4 percent). • The developer provided disparity data using observed key facility demographics separated into quintiles, all of which showed differences in performance across quintiles. However, the basis of the difference was not clear to the Committee and they could not reach consensus on performance gap.
2. Scientific Acceptability of Measure Properties: The measure does not meet the Scientific Acceptability criteria *(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)* 2a. Reliability: **0-H; 12-M; 5-L; 1-I**; 2b. Validity: **0-H; 4-M; 8-L; 7-I;** Reconsideration Validity: 3-**H; 7-M; 7-L; 0-I** Rationale:

2700 Ultrafiltration rate greater than 13 ml/kg/hr

- The developer provided January 2013 – December 2013 CROWNWeb data, which was used to calculate the inter-unit reliability (IUR) for the overall 12 months to assess the reliability of this measure.
- The Committee agreed the overall IUR of 0.84 indicates that about 84% of the variation in the UFR>13 can be attributed to the between-facility differences and 16% to within facility variation.
- Using CROWNWeb data for 2013, a Poisson regression analysis was performed. The Committed questioned the findings from the Poisson regression on the standardized hospitalization ratio (SHR) and standardized mortality ratio (SMR) with respect to the highest quintile. Facilities in the highest quintile may have greater proportions of healthier patients in their panel, reducing the current risk of higher UF rates. The Committed indicated that adjustment for this effect would require complex analyses beyond the scope of what is possible during this meeting.
- The measure was also tested for validity at the level of the measure score by systematic assessment of face validity by a technical expert panel advising the measure developers. Of the eight voting members of the technical expert panel (TEP), five voted to recommend development of a facility-level measure for reporting the percent of patients at dialysis facilities with an ultrafiltration rate greater than 13 ml/kg/hr.
- The Committee concluded the measure was not valid and suggested the developer should review their data and maybe rethink alternative hypotheses and explanations.
- During the public comment period, the measure steward and multiple Committee members requested an opportunity to reconsider the Committee recommendation. It was felt that the validity information supplied may have been misinterpreted.
- After consideration of public comments and clarification from the developer on the types of validity testing conducted and the results; the Committee indicated greater comfort with the direction of the validity results. They did note that while the direction was consistent with expectations, statistical significance was not reached for all quintiles of data.
- The Committee also noted that while the measure was very similar to measure #2701, also focused on ultrafiltration rates, there were important differences, specifically the lack of inclusion of time on dialysis in 2700 and using one day of data which may impact reliability.

3. Feasibility: 6-H; 9-M; 2-L;0-I

(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)

Rationale:

- The data elements required are routinely measured as part of patient care and can be derived from CROWNWeb and electronic health records. The Committee agreed that collection of this data is feasible.

4. Use and Usability: 1-H; 5-M; 10-L; 0-I

(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)

Rationale:

- This is a new measure proposed for use at the Facility level.

5. Related and Competing Measures

- This measure was identified as potentially related or competing with:
  - NQF #2700 Ultrafiltration rate greater than 13 ml kg hr: Percentage of patients months for patients an ultrafiltration rate greater than 13 ml/kg/hr
- NQF #2700 was not recommended by the Committee, so the Committee did not discuss the harmonization of these two measures.

Standing Committee Recommendation for Endorsement: 5-Y; 12-N

6. Public and Member Comment

- Three commenters supported the Committee's recommendation to not endorse this measure.

867

2702 Post-Dialysis Weight Above or Below Target Weight

Submission | Specifications

Description: Percentage of patients with an average post-dialysis weight >/= 1 kg above or below the prescribed target weight.

Numerator Statement: Number of patients* from the denominator with an average post-dialysis weight >/= 1 kg above or below the prescribed target weight during the calculation period.**

*To address the fact that patients may contribute varying amounts of time to the annual denominator population, results will be reported using a "patient-month" construction.

** The calculation period is defined as the same week that the monthly Kt/V is drawn.

Denominator Statement: Number of adult in-center hemodialysis patients in an outpatient dialysis facility undergoing chronic maintenance hemodialysis during the calculation period.

Exclusions: The following patients are excluded from the denominator population:

1. Patients <18 years of age (implicit in denominator definition).
2. Home dialysis patients (implicit in denominator definition).
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) in the reporting month.
6. Kidney transplant recipients with a functioning graft.
7. Facilities treating <XX adult in-center hemodialysis patients during the reporting month. (Number currently being evaluated.)

Adjustment/Stratification: No risk adjustment or risk stratification

Level of Analysis: Facility

Setting of Care: Other (Dialysis facility)

Type of Measure: Intermediate Clinical Outcome

Data Source: Electronic Clinical Data

Measure Steward: Kidney Care Quality Alliance (KCQA)

STANDING COMMITTEE MEETING [05/06/2015-05/07/2015]

1. Importance to Measure and Report: <u>The measure meets the Importance criteria</u>

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **0-H; 3-M; 7-L; 9-I**; Insufficient Evidence with Exception: **10-Y; 9-N**; 1b. Performance Gap: **3-H; 14-M; 0-L; 2-I**

<u>Rationale</u>:

- The developer provided data that includes a Kidney Disease Outcomes Quality Initiative (KDOQI) clinical guideline and a systematic review of literature. The (KDOQI) Clinical Practice Guidelines for Hemodialysis Adequacy: Achievement of optimal "dry" weight graded the evidence as level A (high evidence).
- The developer acknowledged the pre-meeting comments and the workgroup call where discussion centered around the identification of the one kilogram weight as the target weight window to be achieved. Evidence suggests that improved volume control can attenuate cardiovascular issues, making a strong case for the diligent avoidance of volume overload.
- Based on the evidence submitted, the Committee summarized that there is a disconnect between the evidence that is presented and the actual guideline.
- A committee member noted that fluid overload hospitalizations are an enormous component of comorbidity in this population and that shining a light on those particular issues through the achievement of assessment and achievement of an appropriate target weight key issues in trying to look at how to prevent fluid overload hospitalizations.
- The Committee noted this measure is a companion to the ultrafiltration measure and it seems to be important in dialysis. In discussion of the performance gap, the Committee reviewed data from over 400,000 hemodialysis treatments across three organizations. The interquartile range was 14% suggesting

2702 Post-Dialysis Weight Above or Below Target Weight
that there was a potential for some intervention that might improve health; that this measure lends itself to that.
2. Scientific Acceptability of Measure Properties: <u>The measure meets the Scientific Acceptability criteria</u> *(2a. Reliability - precise specifications, testing; 2b. Validity - testing, threats to validity)* 2a. Reliability: **1-H; 13-M; 5-L; 0-I**; 2b. Validity: **1-H; 16-M; 2-L; 0-I** <u>Rationale</u>: • Testing was performed at the performance measure score level. The measured entity is the dialysis facility. Testing encompassed 4,252 dialysis facilities. For both the "every session" and the "abbreviated" measure constructs, the intra-class correlation for all organizations is high, indicating a good level of reliability within facilities over time and considerable within-facility stability with respect to performance on this measure over the course of the 12 months. Additionally, the estimated between-facility variation is greater than the within-facility variation across all organizations, which, when considered in light of the high intra-class correlation coefficients, suggests that both the "every session" and "abbreviated" constructs of the measure are reliable and differentiate between facilities. • Discussion of the specifications centered around the lack of exclusions for more than three treatments during the week; and the fact that there are no adjustments or exclusions for patient preference. • The testing data, analysis of variance (ANOVA}, indicated a moderately high interclass correlation and a high ratio of between to within facility correlations. • This measure correlates to the standardized ratios that have been discussed and has high face validity by the assessment of the KCQA Committee tasked with developing the measure.
3. Feasibility: 1-H; 14-M; 3-L; 1-I *(3a. Clinical data generated during care delivery; 3b. Electronic sources; 3c.Susceptibility to inaccuracies/ unintended consequences identified 3d. Data collection strategy can be implemented)* <u>Rationale</u>: • The data are collected or generated and used by healthcare personnel during provision of care. • Feasibility has the same issues that were discussed in #2701; CROWNWeb would have to be modified to accept the data.
4. Use and Usability: 1-H; 12-M; 5-L; 1-I *(Meaningful, understandable, and useful to the intended audiences for 4a. Public Reporting/Accountability and 4b. Quality Improvement, 4c. Susceptibility to inaccuracies/unintended consequences identified)* <u>Rationale</u>: • This is a new measure and a presumption was made that it could be used in public reporting and for payment purposes. The developer reports it is currently in use by at least one large dialysis organization for internal quality reporting purposes. • The Committee discussed the unintended consequences of patient preference or belief limiting how to address target weight. Overall, the Committee determined the measure was usable.
5. Related and Competing Measures • No related or competing measures noted.
Standing Committee Recommendation for Endorsement: 11-Y; 8-N <u>Reconsideration Votes: **4-Y; 13-N**</u> • <u>Based on the updates provided by the developer during the July 30 post-comment call, the Committee was able to reach consensus on this measure and decided to not recommend it for endorsement.</u>

868

2703 Minimum Delivered Hemodialysis Dose
<u>Submission</u>
Description: Percentage of all patient months for patients whose average delivered dose of hemodialysis using the UKM or Daugirdas II formula) was between spKt/V >= 1.2 and spKt/V =< 5.0

2703 Minimum Delivered Hemodialysis Dose

Numerator Statement: Number of patient months in denominator whose average delivered dose of hemodialysis using the UKM or Daugirdas II formula) was between spKt/V >= 1.2 and spKt/V =< 5.0

Denominator Statement: To be included in the denominator for a particular month, the patients must have had ESRD for greater than 90 days, must be dialyzing thrice weekly (adults) or dialyzing in-center 3 or 4 times weekly (pediatrics), and must be assigned to the facility for the entire month.

Exclusions: Exclusions that are implicit in the denominator definition include

1) patients receiving dialysis less than 3 times weekly

2) all patients who have had ESRD for <91 days

3) pediatric home hemodialysis patients

4) patients who have not been in the facility the entire reporting month.

There are no additional exclusions for this measure.

Adjustment/Stratification: No risk adjustment or risk stratification

Level of Analysis: Facility

Setting of Care: Dialysis Facility

Type of Measure: Outcome

Data Source: Administrative claims, Electronic Clinical Data

Measure Steward: Centers for Medicare and Medicaid Services (CMS)

STANDING COMMITTEE MEETING [05/06/2015-05/07/2015]

1. Importance to Measure and Report: The measure does not meet the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **0-H; 10-M; 9-L; 4-I;** 1b. Performance Gap: **1-H; 8-M; 11-L; 3-I**

Rationale:

- This intermediate clinical outcome measure is based on the Kidney Disease Outcomes Quality Initiative Clinical Practice Guidelines (KDOQI CPG) and Clinical Practice Recommendations (CPRs) for Hemodialysis Adequacy, Update 2006 and are rated as Grade A (strong evidence).
- The measure includes both the adult and pediatric populations, and the assessment is whether the respective adult and pediatric populations achieved minimum 1.2 Kt/V. The developer stated that the upper threshold of 5.0 would be removed.
- The Committee noted that, as in many pediatric measures, there is not much evidence for the pediatric population. The measure is based on adult data with the assumption that children should be doing at least as well as adults do, and the Committee noted that is a reasonable position to take. The referenced literature indicates some need for a higher dose of dialysis for children with respect to growth and development.
- Similar to measure NQF# 1423, the Committee had concerns with dialysis three versus for times per week. Evidence is related to three times per week although a very low percentage of pediatric patients are dialyzed four times per week. Standard kt/v is considered a valuable tool (as tools are limited). The Committee suggested that the developer limit to three times a week. The Committee did not reach consensus when voting on the evidence criterion.
- Committee members agreed that over 93.5% of patients receiving the minimum delivered hemodialysis of 1.2 Kt/V demonstrates that there is a small performance gap and little room for improvement. The measure did not pass the performance gap sub-criterion.
- The developer updated the measure and requested reconsideration of this measure. The Committee determined the new information did not justify a reconsideration and upheld their original recommendation.

869

2705 Delivered Dose of Dialysis Above Minimum

Submission

Description: Percentage of all patient months for patients whose average delivered dose of dialysis (either hemodialysis or peritoneal dialysis) met the specified threshold during the reporting period.

Numerator Statement: Number of patient months in the denominator for patients whose delivered dose of dialysis met the specified ranges. The ranges are as follows:

Hemodialysis (all ages): spKt/V >= 1.2 and spKt/V =< 5.0 (calculated from the last measurement of the month)

Peritoneal dialysis (pediatric <18 years): spKt/V >= 1.8 and spKt/V =< 8.5 (dialytic + residual, measured within the past 6 months)

Peritoneal dialysis (adult >= 18 years): spKt/V >= 1.7 and spKt/V =<8.5 (dialytic + residual, measured within the past 4 months)

Denominator Statement: To be included in the denominator for a particular month, patients need to meet the following requirements that month:

1) Hemodialysis patients: Adult (>= 18 years old) patients who have had ESRD for greater than 90 days and dialyzing thrice weekly; pediatric (<18 years old) HD patients who have had ESRD greater than 90 days and dialyzing in-center thrice or four times weekly;

2) Peritoneal dialysis patients: All peritoneal dialysis patients who have had ESRD for greater than 90 days.

In addition, patients must be assigned to the facility for the entire month.

Exclusions: Exclusions that are implicit in the denominator definition include

1) for adult HD patients, those receiving dialysis less than 3 or greater than 4 times weekly

2) for pediatric HD patients, those receiving dialysis less than 3 or greater than 4 times weekly or who are on home hemodialysis

3) all patients who have had ESRD for <91 days

4) patients who were not assigned to the facility for the entire month

Adjustment/Stratification: No risk adjustment or risk stratification

Level of Analysis: Facility

Setting of Care: Dialysis Facility

Type of Measure: Outcome

Data Source: Administrative claims, Electronic Clinical Data

Measure Steward: Centers for Medicare and Medicaid Services

STANDING COMMITTEE MEETING [05/06/2015-05/07/2015]

1. Importance to Measure and Report: The measure does not meet the Importance criteria

(1a. Evidence, 1b. Performance Gap)

1a. Evidence: **0-H; 4-M; 12-L; 6-I**; Reconsideration Evidence: 1-**H; 12-M; 7-L; 0-I;** Gap: 0-**H; 3-M; 17-L; 0-I**

Rationale:

- The developer presented 2006 Kidney Disease Outcomes Quality Initiative Clinical Practice Guidelines (KDOQI CPG) and Clinical Practice Recommendations (CPRs) for Hemodialysis Adequacy as evidence to support this intermediate clinical outcome measure. The adult and pediatric hemodialysis guidelines were graded A (strong evidence). The guidelines for adult peritoneal dialysis patients were graded B (moderate evidence). The pediatric peritoneal dialysis guidelines were graded CPR and are based on expert opinion.
- The measure is a combination of the respective pediatric hemodialysis and peritoneal dialysis adequacy measures, and the respective adult hemodialysis and peritoneal measures. The Committee noted that the same issues with evidence that were previously discussed during review of the pediatric hemodialysis and peritoneal dialysis adequacy measures and the adult hemodialysis and peritoneal measures apply to this measure. The numerator includes hemodialysis patients dialyzing three or four times a week but the evidence cited is for dialysis three times a week using the Daugirdas formula. Committee members noted that the formula cannot be used for varying weekly dialysis frequency. Instead, a measure such as standard weekly Kt/V must be used. There is evidence in adults for a lower limit to urea kinetic

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measurement (UMK) (Kt/V 1.2) and its relation to outcomes but the evidence is lacking support for the upper limit (Kt/V<5). The developer will consider removing the upper limit. • Committee members noted that the denominator statement says for adult hemodialysis patients receiving dialysis, excluding those who receive dialysis less than three or greater than four times a week. The developer clarified that the denominator does limit it to thrice weekly. • Overall, the Committee did not pass this measure on Importance to Measure and Report due to concerns with the evidence sub-criterion. After review of the information provided by the developer during the post-comment call, the Committee decided to reconsider this measure and agreed there was evidence to support this measure. However, the Committee did not feel the gap was sufficient enough to warrant a national performance measure.

Measures Withdrawn from Consideration

Five measures previously endorsed by NQF have not been re-submitted or are withdrawn from maintenance of endorsement. The following measures are being retired from endorsement:

Measure	Reason for retirement
0370: Monitoring hemoglobin levels below target minimum	Measure Withdrawn from Consideration
1418: Frequency of Adequacy Measurement for Pediatric Hemodialysis Patients	The developer stated this measure is being recommended for retirement. The process of measurement frequency is already captured in measure #1423 (Minimum spKt/V for Pediatric Hemodialysis Patients) which measures achievement of dialysis adequacy (target Kt/V). #1423 measure requires that Kt/V be measured monthly in pediatric HD patients therefore a separate process measure will not be needed to assess frequency of measurement. NQF #1418 is not implemented in a public reporting program.
1421: Method of Adequacy Measurement for Pediatric Hemodialysis Patients	The developer stated this measure is being recommended for retirement. Information on the method of adequacy measurement is captured in #1423 (Minimum spKt/V for Pediatric Hemodialysis Patients) which measures achievement of dialysis adequacy (target Kt/V). #1423 requires that the method of calculating the Kt/V measurement be UKM or Daugirdas II, therefore a separate process measure is not needed to assess appropriate measurement method. NQF #1421 is not implemented in a public reporting program.
1666: Adult Kidney Disease : Patients on Erythropoiesis Stimulating Agent (ESA)--Hemoglobin Level > 12.0 g/Dl	RPA decided not to submit 1666 for maintenance as that measure has been determined to be topped out by CMS and retired from the PQRS program.
1668: Adult Kidney Disease: Laboratory Testing (Lipid Profile)	RPA experts felt that the science (including the latest KDIGO guidelines) no longer supports annual measurement of lipids for patients with diagnosed CKD as indicated in measure 1668.

Appendix B: NQF Renal Portfolio and Related Measures

Hemodialysis Measures

Measure Number	Title	Description	Measure Steward	Topic Area
0249	Hemodialysis Adequacy Clinical Performance Measure III: Hemodialysis Adequacy-- HD Adequacy-- Minimum Delivered Hemodialysis Dose	Percentage of all adult (>=18 years old) patients in the sample for analysis who have been on hemodialysis for 90 days or more and dialyzing thrice weekly whose average delivered dose of hemodialysis (calculated from the last measurements of the month using the UKM or Daugirdas II formula) was a spKt/V >= 1.2 during the study period.	Centers for Medicare & Medicaid Services	Hemodialysis
0323	Adult Kidney Disease: Hemodialysis Adequacy: Solute	Percentage of calendar months within a 12-month period during which patients aged 18 years and older with a diagnosis of End Stage Renal Disease (ESRD) receiving hemodialysis three times a week for >= 90 days have a spKt/V >= 1.2	American Medical Association - Physician Consortium for Performance Improvement (AMA-PCPI)	Hemodialysis
0251	Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement	Percentage of end stage renal disease (ESRD) patients aged 18 years and older receiving hemodialysis during the 12-month reporting period and on dialysis >90 days who: (1) have a functional autogenous AVF (defined as two needles used or a single-needle device [NOT one needle used in a two-needle device]) (computed and reported separately); (2) have a functional AV graft (computed and reported separately); or (3) have a catheter but have been seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for a functional autogenous AVF or AV graft at least once during the 12-month reporting period (computed and reported	Kidney Care Quality Alliance	Hemodialysis Vascular Access

Measure Number	Title	Description	Measure Steward	Topic Area
		separately). Reporting should be stratified by incident versus prevalent patients, as defined by USRDS.		
0256	Hemodialysis Vascular Access-Minimizing use of catheters as Chronic Dialysis Access	Percentage of patients on maintenance hemodialysis during the last HD treatment of study period with a chronic catheter continuously for 90 days or longer prior to the last hemodialysis session.	Centers for Medicare & Medicaid Services	Hemodialysis Vascular Access
0257	Hemodialysis Vascular Access-Maximizing Placement of Arterial Venous Fistula (AVF)	Percentage of patients on maintenance hemodialysis during the last HD treatment of month using an autogenous AV fistula with two needles	Centers for Medicare & Medicaid Services	Hemodialysis Vascular Access
1421	Method of Adequacy Measurement for Pediatric Hemodialysis Patients	Percentage of pediatric (less than 18 years old) in-center hemodialysis patients (irrespective of frequency of dialysis) for whom delivered HD dose was measured by spKt/V as calculated using UKM or Daugirdas II during the reporting period.	Centers for Medicare & Medicaid Services	Pediatric Hemodialysis
1423	Minimum spKt/V for Pediatric Hemodialysis Patients	Percentage of all pediatric (<18 years old) in-center HD patients who have been on hemodialysis for 90 days or more and dialyzing 3 or 4 times weekly whose delivered dose of hemodialysis (calculated from the last measurements of the month using the UKM or Daugirdas II formula) was a spKt/V greater than or equal to 1.2	Centers for Medicare & Medicaid Services	Pediatric Hemodialysis

Peritoneal Dialysis Measures

Measure Number	Title	Description	Measure Steward	Topic Area
0318	Peritoneal Dialysis Adequacy Clinical Performance Measure III - Delivered Dose of Peritoneal Dialysis Above Minimum	Percentage of all adult (>= 18 years old) peritoneal dialysis patients whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of at least 1.7 (dialytic + residual) during the four month study period.	Centers for Medicare & Medicaid Services	Peritoneal Dialysis
0321	Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	Percentage of patients aged 18 years and older with a diagnosis of End Stage Renal Disease (ESRD) receiving peritoneal dialysis who have a total Kt/V >= 1.7 per week measured once every 4 months	American Medical Association - Physician Consortium for Performance Improvement (AMA-PCPI)	Peritoneal Dialysis

Dialysis Monitoring Measures

Measure Number	Title	Description	Measure Steward	Topic Area
0255	Measurement of Serum Phosphorus Concentration	Percentage of all adult (>= 18 years of age) peritoneal dialysis and hemodialysis patients included in the sample for analysis with serum phosphorus measured at least once within month.	Centers for Medicare & Medicaid Services	Dialysis Monitoring
0370	Monitoring hemoglobin levels below target minimum	Percentage of all adult (>=18 years old) hemodialysis patients, peritoneal dialysis, and home hemodialysis patients with ESRD >=3 months and who had Hb values reported for at least 2 of the 3 study months, who have a mean Hb <10.0 g/dL for a 3 month study period, irrespective of ESA use.	Centers for Medicare & Medicaid Services	Dialysis Monitoring

Measure Number	Title	Description	Measure Steward	Topic Area
1425	Measurement of nPCR for Pediatric Hemodialysis Patients	Percentage of pediatric (less than 18 years old) in-center hemodialysis patients (irrespective of frequency of dialysis) with documented monthly nPCR measurements.	Centers for Medicare & Medicaid Services	Dialysis Monitoring
1454	Proportion of patients with hypercalcemia	Proportion of patients with 3-month rolling average of total uncorrected serum calcium greater than 10.2 mg/dL	Centers for Medicare & Medicaid Services	Dialysis Monitoring
1666	Adult Kidney Disease : Patients on Erythropoiesis Stimulating Agent (ESA)--Hemoglobin Level > 12.0 g/dL	Percentage of calendar months within a 12-month period during which a hemoglobin level is measured for patients aged 18 years and older with a diagnosis of advanced chronic kidney disease (CKD) (stage 4 or 5, not receiving Renal Replacement Therapy [RRT]) or End Stage Renal Disease (ESRD) (who are on hemodialysis or peritoneal dialysis) who are also receiving erythropoiesis-stimulating agent (ESA) therapy have a hemoglobin level > 12.0 g/dL	American Medical Association - Physician Consortium for Performance Improvement (AMA-PCPI)	Dialysis Monitoring
1418	Frequency of Adequacy Measurement for Pediatric Hemodialysis Patients	Percentage of all pediatric (less than18 years) patients receiving in-center hemodialysis or home (irrespective of frequency of dialysis) with documented monthly adequacy measurements (spKt/V) or its components in the calendar month.	Centers for Medicare & Medicaid Services	Pediatric Dialysis Monitoring
1424	Monthly Hemoglobin Measurement for Pediatric Patients	Percentage of all pediatric (less than 18 years) in-center hemodialysis, home hemodialysis, and peritoneal dialysis patients who have monthly measures for hemoglobin.	Centers for Medicare & Medicaid Services	Pediatric Dialysis Monitoring
1667	Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL	Percentage of calendar months within a 12-month period during which patients aged 17 years and younger with a diagnosis of End Stage Renal Disease (ESRD) receiving hemodialysis or peritoneal dialysis have a hemoglobin level < 10 g/dL	American Medical Association - Physician Consortium for Performance Improvement (AMA-PCPI)	Pediatric Dialysis Monitoring

Patient Safety Measures

Measure Number	Title	Description	Measure Steward	Topic Area
0369	Dialysis Facility Risk-adjusted Standardized Mortality Ratio	Risk-adjusted standardized mortality ratio for dialysis facility patients.	Centers for Medicare & Medicaid Services	Patient Safety
1460	Bloodstream Infection in Hemodialysis Outpatients	Adjusted ranking metric (ARM) and Standardized Infection Ratio (SIR) of Bloodstream Infections (BSI) will be calculated among patients receiving hemodialysis at outpatient hemodialysis centers.	Centers for Disease Control and Prevention	Patient Safety
1463	Standardized Hospitalization Ratio for Admissions	Risk-adjusted standardized hospitalization ratio for admissions for dialysis facility patients.	Centers for Medicare & Medicaid Services	Patient Safety

Comorbid Conditions/Preventive Care Measures

Measure Number	Title	Description	Measure Steward	Topic Area
1668	Adult Kidney Disease: Laboratory Testing (Lipid Profile)	Percentage of patients aged 18 years and older with a diagnosis of chronic kidney disease (CKD) (stage 3, 4, or 5, not receiving Renal Replacement Therapy [RRT]) who had a fasting lipid profile performed at least once within a 12-month period	American Medical Association - Physician Consortium for Performance Improvement (AMA-PCPI)	Comorbid Conditions/Preventive Care

Additional Renal-Related Measures (Assigned to Other Projects)

Measure Number	Title	Description	Measure Steward	Standing Committee Assignment
0260	Assessment of Health-related Quality of Life (Physical & Mental Functioning)	Percentage of dialysis patients who receive a quality of life assessment using the KDQOL-36 (36-question survey that assesses patients' functioning and well-being) at least once per year.	RAND Corporation	Person- and Family-Centered Care (Last endorsed 2007)
0258	CAHPS In-Center Hemodialysis Survey	Percentage of patient responses to multiple testing tools. Tools include the In-Center Hemomdialysis Composite Score: The proportion of respondents answering each of response options for each of the items summed across the items within a composite to yield the composite measure score. (Nephrologists' Communication and Caring, Quality of Dialysis Center Care and Operations, Providing Information to Patients) Overall Rating: a summation of responses to the rating items grouped into 3 levels	Centers for Medicare & Medicaid Services	Person- and Family-Centered Care (Endorsement renewed 2015)
0062	Comprehensive Diabetes Care: Medical Attention for Nephropathy	The percentage of patients 18-75 years of age with diabetes (type 1 and type 2) who received a nephropathy screening test or had evidence of nephropathy during the measurement year.	National Committee for Quality Assurance	Endocrine (Endorsement renewed 2014)
0274	Diabetes Long-Term Complications Admission Rate (PQI 03)	Admissions for a principal diagnosis of diabetes with long-term complications (renal, eye, neurological, circulatory, or complications not otherwise specified) per 100,000 population, ages 18 years and older. Excludes obstetric admissions and transfers from other institutions.	Agency for Healthcare Research and Quality	Health and Well-Being (Endorsement renewed in 2014)
0226	Influenza Immunization in the ESRD Population (Facility Level)	Percentage of end stage renal disease (ESRD) patients aged 6 months and older receiving hemodialysis or peritoneal dialysis during the time from October 1 (or when the influenza vaccine became available) to March 31 who either received, were offered and declined, or were determined to have a medical contraindication to the influenza vaccine.	Kidney Care Quality Alliance	Health and Well-Being (Endorsed in 2012; Under annual review)

Measure Number	Title	Description	Measure Steward	Standing Committee Assignment
0638	Uncontrolled Diabetes Admission Rate (PQI 14)	Admissions for a principal diagnosis of diabetes without mention of short-term (ketoacidosis, hyperosmolarity, or coma) or long-term (renal, eye, neurological, circulatory, or other unspecified) complications per 100,000 population, ages 18 years and older. Excludes obstetric admissions and transfers from other institutions.	Agency for Healthcare Research and Quality	Health and Well-Being (Endorsement Renewed in 2014)
0281	Urinary Tract Infection Admission Rate (PQI 12)	Admissions with a principal diagnosis of urinary tract infection per 100,000 population, ages 18 years and older. Excludes kidney or urinary tract disorder admissions, other indications of immunocompromised state admissions, obstetric admissions, and transfers from other institutions.	Agency for Healthcare Research and Quality	Health and Well-Being (Endorsement Renewed in 2014)
0114	Risk-Adjusted Postoperative Renal Failure	Percent of patients aged 18 years and older undergoing isolated CABG (without pre-existing renal failure) who develop postoperative renal failure or require dialysis	The Society of Thoracic Surgeons	Surgery (Endorsement Renewed in 2014)
0534	Hospital specific risk-adjusted measure of mortality or one or more major complications within 30 days of a lower extremity bypass (LEB)	Hospital specific risk-adjusted measure of mortality or one or more of the following major complications (cardiac arrest, myocardial infarction, CVA/stroke, on ventilator >48 hours, acute renal failure (requiring dialysis), bleeding/transfusions, graft/prosthesis/flap failure, septic shock, sepsis, and organ space surgical site infection), within 30 days of a lower extremity bypass (LEB) in patients age 16 and older.	American College of Surgeons	Surgery (Under review)
0327	Risk-Adjusted Average Length of Inpatient Hospital Stay	Percentage of inpatient & outpatients with excessive in-hospital days	Premier, Inc	All-Cause Admissions and Readmissions (Under Review)

Measure Number	Title	Description	Measure Steward	Standing Committee Assignment
2393	Pediatric All-Condition Readmission Measure	This measure calculates case-mix-adjusted readmission rates, defined as the percentage of admissions followed by 1 or more readmissions within 30 days, for patients less than 18 years old. The measure covers patients discharged from general acute care hospitals, including children's hospitals.	Center of Excellence for Pediatric Quality Measurement	All-Cause Admissions and Readmissions (Endorsed 2014)
0708	Proportion of Patients Hospitalized with Pneumonia that have a Potentially Avoidable Complication (during the Index Stay or in the 30-day Post-Discharge Period)	Percent of adult population aged 18 – 65 years who were admitted to a hospital with Pneumonia, were followed for one-month after discharge, and had one or more potentially avoidable complications (PACs). PACs may occur during the index stay or during the 30-day post discharge period (Please reference attached document labeled NQF Pneumonia PACs Risk Adjustment 2.16.10.xls, tabs labeled CIP_Index PAC_Stays and CIP_PAC_Readmission). We define PACs during each time period as one of three types: (A) PACs during the Index Stay (Hospitalization): (1) PACs related to the anchor condition: The index stay is regarded as having a PAC if during the index hospitalization the patient develops one or more of the avoidable complications that can result from pneumonia, such as respiratory failure, respiratory insufficiency, pneumothorax, pulmonary collapse, or requires respiratory intubation and mechanical ventilation, incision of pleura, thoracocentesis, chest drainage, tracheostomy etc. (2) PACs due to Comorbidities: The index stay is also regarded as having a PAC if one or more of the patient's controlled comorbid conditions is exacerbated during the hospitalization (i.e., it was not present on admission). Examples of these PACs are diabetic emergency with hypo- or	Bridges To Excellence	Care Coordination (Endorsed in 2011; Undergoing Annual Review)

Measure Number	Title	Description	Measure Steward	Standing Committee Assignment
		hyperglycemia, stroke, coma, gastritis, ulcer, GI hemorrhage, acute renal failure etc. (3) PACs suggesting Patient Safety Failures: The index stay is regarded as having a PAC if there is one or more complication related to patient safety issues. Examples of these PACs are infections, sepsis, phlebitis, deep vein thrombosis, pulmonary embolism or any of the CMS-defined hospital acquired conditions (HACs). (B) PACs during the 30-day post discharge period: (1) PACs related to the anchor condition: Readmissions and emergency room visits during the 30-day post discharge period are considered PACs if they are for potentially avoidable complications of pneumonia such as respiratory failure, respiratory insufficiency, pneumonia, respiratory intubation, mechanical ventilation, etc. (2) PACs due to Comorbidities: Readmissions and emergency room visits during the 30-day post discharge period are also considered PACs if they are due to an exacerbation of one or more of the patient's comorbid conditions, such as a diabetic emergency with hypo- or hyperglycemia, stroke, coma, gastritis, ulcer, GI hemorrhage, acute renal failure etc. (3) PACs suggesting Patient Safety Failures: Readmissions or emergency room visits during the 30-day post discharge period are considered PACs if they are due to sepsis, infections, phlebitis, deep vein thrombosis, or for any of the CMS-defined hospital acquired conditions (HACs). The enclosed workbook labeled NQF Pneumonia PACs Risk Adjustment		

Measure Number	Title	Description	Measure Steward	Standing Committee Assignment
		2.16.10.xls, gives the frequency and costs associated with each of these types of PACs during the index hospitalization (tab labeled CIP_Index PAC_Stays) and for readmissions and emergency room visits during the 30-day post-discharge period (tab labeled CIP_PAC_Readmission). The information is based on a two-year national commercially insured population (CIP) claims database. The database had 4.7 million covered lives and $95 billion in "allowed amounts" for claims costs. The database was an administrative claims database with medical as well as pharmacy claims. The two tabs demonstrate the most common PACs that occurred in patients hospitalized with pneumonia.		
0705	Proportion of Patients Hospitalized with Stroke that have a Potentially Avoidable Complication (during the Index Stay or in the 30-day Post-Discharge Period)	Percent of adult population aged 18 – 65 years who were admitted to a hospital with stroke, were followed for one-month after discharge, and had one or more potentially avoidable complications (PACs). PACs may occur during the index stay or during the 30-day post discharge period (Please reference attached document labeled NQF_Stroke_PACs_Risk_Adjustment_2.16.10.xls, tabs labeled CIP_Index PAC_Stays and CIP_PAC_Readmission). We define PACs during each time period as one of three types: (A) PACs during the Index Stay (Hospitalization): (1) PACs related to the anchor condition: The index stay is regarded as having a PAC if during the index hospitalization for stroke the patient develops one or more complications such as hypertensive encephalopathy, malignant hypertension, coma, anoxic brain damage, or respiratory failure etc. that may result directly from stroke or its management.	Bridges to Excellence	Cardiovascular (Under Review)

Measure Number	Title	Description	Measure Steward	Standing Committee Assignment
		(2) PACs due to Comorbidities: The index stay is also regarded as having a PAC if one or more of the patient's controlled comorbid conditions is exacerbated during the hospitalization (i.e., it was not present on admission). Examples of these PACs are diabetic emergency with hypo- or hyperglycemia, pneumonia, lung complications, acute myocardial infarction, gastritis, ulcer, GI hemorrhage etc. (3) PACs suggesting Patient Safety Failures: The index stay is regarded as having a PAC if there are one or more complications related to patient safety issues. Examples of these PACs are septicemia, meningitis, other infections, phlebitis, deep vein thrombosis, pulmonary embolism or any of the CMS-defined hospital acquired conditions (HACs). (B) PACs during the 30-day post discharge period: (1) PACs related to the anchor condition: Readmissions and emergency room visits during the 30-day post discharge period after a stroke are considered as PACs if they are for hypertensive encephalopathy, malignant hypertension, respiratory failure, coma, anoxic brain damage etc. (2) PACs due to Comorbidities: Readmissions and emergency room visits during the 30-day post discharge period are also considered PACs if they are due to an exacerbation of one or more of the patient's comorbid conditions, such as a diabetic emergency with hypo- or hyperglycemia, pneumonia, lung complications, acute myocardial infarction, acute renal failure etc. (3) PACs suggesting Patient Safety Failures: Readmissions or emergency room visits during the 30-day post discharge period are		

Measure Number	Title	Description	Measure Steward	Standing Committee Assignment
		considered PACs if they are due to sepsis, infections, deep vein thrombosis, pulmonary embolism, or for any of the CMS-defined hospital acquired conditions (HACs). The enclosed workbook labeled NQF_Stroke_PACs_Risk_Adjustment_2.16.10.xls, gives the frequency and costs associated with each of these types of PACs during the index hospitalization (tab labeled CIP_Index PAC_Stays) and for readmissions and emergency room visits during the 30-day post-discharge period (tab labeled CIP_PAC_Readmission). The information is based on a two-year national commercially insured population (CIP) claims database. The database had 4.7 million covered lives and $95 billion in "allowed amounts" for claims costs. The database was an administrative claims database with medical as well as pharmacy claims. The two tabs demonstrate the most common PACs that occurred in patients hospitalized with stroke.		

Appendix C: Renal Portfolio—Use in Federal Programs

NQF #	Title	Federal Programs: Finalized as of June 12, 2015
0249	Hemodialysis Adequacy Clinical Performance Measure III: Hemodialysis Adequacy--HD Adequacy--Minimum Delivered Hemodialysis Dose	Dialysis Facility Compare; End-Stage Renal Disease Quality Incentive Program
0256	Hemodialysis Vascular Access- Minimizing use of catheters as Chronic Dialysis Access	Dialysis Facility Compare; End-Stage Renal Disease Quality Incentive Program
0257	Hemodialysis Vascular Access- Maximizing Placement of Arterial Venous Fistula (AVF)	Dialysis Facility Compare; End-Stage Renal Disease Quality Incentive Program
0318	Peritoneal Dialysis Adequacy Clinical Performance Measure III - Delivered Dose of Peritoneal Dialysis Above Minimum	Dialysis Facility Compare; End-Stage Renal Disease Quality Incentive Program
0321	Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	Physician Feedback; Physician Quality Reporting System (PQRS); Value-Based Payment Modifier Program
0323	Adult Kidney Disease: Hemodialysis Adequacy: Solute	Physician Feedback; Physician Quality Reporting System (PQRS); Value-Based Payment Modifier Program
0369	Dialysis Facility Risk-adjusted Standardized Mortality Ratio	Dialysis Facility Compare
1423	Minimum spKt/V for Pediatric Hemodialysis Patients	Dialysis Facility Compare; End-Stage Renal Disease Quality Incentive Program

NQF #	Title	Federal Programs: Finalized as of June 12, 2015
1454	Proportion of patients with hypercalcemia	Dialysis Facility Compare; End-Stage Renal Disease Quality Incentive Program
1460	Bloodstream Infection in Hemodialysis Outpatients	End-Stage Renal Disease Quality Incentive Program
1463	Standardized Hospitalization Ratio for Admissions	Dialysis Facility Compare
1666	Adult Kidney Disease : Patients on Erythropoiesis Stimulating Agent (ESA)--Hemoglobin Level > 12.0 g/dL	Physician Feedback; Value-Based Payment Modifier Program
1667	Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL	Physician Feedback; Physician Quality Reporting System (PQRS); Value-Based Payment Modifier Program
0258	CAHPS In-Center Hemodialysis Survey	End-Stage Renal Disease Quality Incentive Program
0114	Risk-Adjusted Postoperative Renal Failure	Physician Feedback; Physician Quality Reporting System (PQRS); Value-Based Payment Modifier Program
0281	Urinary Tract Infection Admission Rate (PQI 12)	Physician Feedback

Appendix D: Project Standing Committee and NQF Staff

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Appendix E: Implementation Comments

Comments received as of April 10, 2015.

Topic	Commenter	Comment
0249: Delivered Dose of Hemodialysis Above Minimum	Submitted by Dr. Lisa McGonigal, MD, MPH	Support. KCP supports this measure. We believe the intent of the upper threshold is to include patients on nocturnal dialysis that have been previously excluded as having a spurious spKt/V value. Accordingly, we support the new specifications. We also note that since the specifications now reflect a range, the title should perhaps be modified.
0251: Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement	Submitted by Dr. Lisa McGonigal, MD, MPH	Support. KCP continues to supports this clinician-level measure.
0255: Measurement of Serum Phosphorus Concentration	Submitted by Dr. Lisa McGonigal, MD, MPH	Support. KCP continues to support this measure. We applaud CMS for revising the specifications to include plasma as an acceptable substrate and note that the title of the measure should reflect this as well.
0255: Measurement of Serum Phosphorus Concentration	Submitted by Dr. Ellen Schwalenstocker, PhD, MBA	The Children's Hospital Association is pleased to see that this measure is undergoing maintenance review and notes the removal of the exclusion for patients under the age of 18. We defer to the pediatric specialists on the Standing Committee as well as the professional societies with regard to any specific issues related to scientific validity.
0256: Minimizing Use of Catheters as Chronic Dialysis Access	Submitted by Dr. Lisa McGonigal, MD, MPH	Support, with qualifications. KCP recognizes the importance of minimizing catheters, although as we note in our comments on NQF 0257, catheters are clinically important in some populations. We continue to be concerned, however, about the lack of an AV graft measure in the CMS portfolio.

Topic	Commenter	Comment
0257: Maximizing Placement of Arterial Venous Fistula (AVF)	Submitted by Dr. Lisa McGonigal, MD, MPH	Support, with qualifications. KCP recognizes the importance of AVFs, but continues to be concerned about the lack of an AV graft measure in the CMS portfolio. We also believe the measure should exclude hospice patients and patients with an expected lifespan of <6 months; catheters would be clinically appropriate in these populations. Additionally, we are aware that catheters are becoming an access-to-care issues, whereby it may be difficult for some patients with catheters (appropriately) to receive treatment at some facilities owing to the desire to minimize use of catheters or be penalized by the measure as currently being implemented; excluding patients who appropriately have a catheter would address this issue.
0318: Delivered Dose of Peritoneal Dialysis Above Minimum	Submitted by Dr. Lisa McGonigal, MD, MPH	Support. KCP continues to support this measure. We note that since the specifications now reflect a range, the title should perhaps be modified. We also note that while the submission forms to NQF note the frequency should be at least every four months, the specifications no longer do so; we believe this should be clarified.
0321: Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	Submitted by Dr. Lisa McGonigal, MD, MPH	Support. KCP continues to support this clinician-level measure.
1423: Minimum spKt/V for Pediatric Hemodialysis Patients	Submitted by Dr. Lisa McGonigal, MD, MPH	Support. KCP continues to support this measure. We also note that since the specifications now reflect a range, the title should perhaps be modified.
1423: Minimum spKt/V for Pediatric Hemodialysis Patients	Submitted by Dr. Ellen Schwalenstocker, PhD, MBA	The Children's Hospital Association is pleased to see that this measure is undergoing maintenance review as it reflects an important process. We defer to the pediatric specialists on the Standing Committee as well as the professional societies with regard to any specific questions on scientific validity.
1423: Minimum spKt/V for Pediatric Hemodialysis Patients	Submitted by Ms. Kathryn Schubert	ASPN supports this measure.

Topic	Commenter	Comment
1424: Monthly Hemoglobin Measurement for Pediatric Patients	Submitted by Dr. Lisa McGonigal, MD, MPH	Support. KCP continues to support this measure.
1424: Monthly Hemoglobin Measurement for Pediatric Patients	Submitted by Dr. Ellen Schwalenstocker, PhD, MBA	The Children's Hospital Association is pleased to see that this measure is undergoing maintenance review as it reflects an important concept. We defer to the pediatric specialists on the Standing Committee as well as the professional societies with regard to any specific issues regarding scientific validity.
1424: Monthly Hemoglobin Measurement for Pediatric Patients	Submitted by Ms. Kathryn Schubert	ASPN supports this measure.
1425: Measurement of nPCR for Pediatric Hemodialysis Patients	Submitted by Dr. Lisa McGonigal, MD, MPH	Support. KCP continues to support this measure.
1425: Measurement of nPCR for Pediatric Hemodialysis Patients	Submitted by Dr. Ellen Schwalenstocker, PhD, MBA	The Children's Hospital Association is pleased to see that this measure is undergoing maintenance review as it reflects an important concept. We defer to the pediatric specialists on the Standing Committee as well as the professional societies with regard to any specific issues regarding scientific validity.
1425: Measurement of nPCR for Pediatric Hemodialysis Patients	Submitted by Ms. Kathryn Schubert	ASPN supports this measure.
1454: Proportion of patients with hypercalcemia	Submitted by Dr. Lisa McGonigal, MD, MPH	Oppose. While KCPapplauds CMS for the revision of the specifications to include plasma as an acceptable substrate, KCP continues to oppose this measure. We reiterate that in the absence of metrics for other related mineral disturbances (e.g., phosphorous, PTH), NQF 1454 will not meaningfully impact outcomes or encourage proper bone mineral metabolism management. Moreover, we note that only a very small number of dialysis patients are afflicted with hypercalcemia and that there is not a sufficient gap in this aspect of care to warrant continued endorsement of this measure or its use in the QIP.
1660: ESRD	Submitted by Dr.	Oppose. KCP supported a previous version of this clinician-

Topic	Commenter	Comment
Patients Receiving Dialysis: Hemoglobin Level <9g/dL	Lisa McGonigal, MD, MPH	level measure, wherein the hemoglobin threshold was defined as <10, rather than <9 g/dL. While the <9 measure would establish a lower hemoglobin threshold to complement NQF 1666—ESRD Patients with Hemoglobin Level >12.0 g/dL, KCP has concern that <9 g/dL is too low a value. Contemporary evidence indicates that the longer a patient has a hemoglobin value less than 10, the higher the risk of transfusion. We also note that the corresponding NQF-endorsed pediatric anemia measure (NQF 1667) uses a lower hemoglobin parameter of <10, and that the <9 measure is thus not harmonized in that regard.
1660: ESRD Patients Receiving Dialysis: Hemoglobin Level <9g/dL	Submitted by Joseph Vassalotti	The National Kidney Foundation (NKF) supports this measure as being generally consistent with the KDOQI clinical practice guidelines. NKF notes that the KDOQI anemia commentary on the KDIGO guidelines states concern that the hemoglobin floor of 9 g/dl could have the unintended consequence of increasing blood transfusions. For this reason, NKF considers this measure to be complementary to the Dialysis facility standardized transfusion ratio (STrR) Measure or NQF # 2699. While supportive of this quality measure, NKF also notes that for many patients a hemoglobin of 9 g/dl may not be adequate enough to alleviate the patient's symptoms of anemia and that the KDOQI commentary on the KDIGO guidelines recommends individualized ESA dosing and hemoglobin targets taking in to consideration the risks and benefits for each patient.
1660: ESRD Patients Receiving Dialysis: Hemoglobin Level <9g/dL	Submitted by Ms. Kathryn Schubert	ASPN does NOT support NQF 1660. A hemoglobin less than 9 is too low of a threshold, specifically due to a concern for an increased need for transfusion. ASPN recommends modifying it to a hemoglobin less than 10 to be consistent with measure 1667.
1662: Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy	Submitted by Dr. Lisa McGonigal, MD, MPH	Support. KCP supports this clinician-level measure.
1662: Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy	Submitted by Joseph Vassalotti	The National Kidney Foundation is supportive of this measure as it aligns with the KDIGO guidelines on Chronic Kidney Disease (CKD) Evaluation and Management and the KDOQI commentary on these guidelines. Evidence shows that treatment with an ACEi or ARB can slow progression of kidney disease with albuminuria and hypertension. The

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		importance of albuminuria or proteinuria testing for CKD and hypertension is emphasized. This is an important measure to improve the outcomes for those diagnosed with CKD.
1667: Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL	Submitted by Dr. Lisa McGonigal, MD, MPH	Support. KCP continues to support this clinician-level measure.
1667: Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL	Submitted by Dr. Ellen Schwalenstocker, PhD, MBA	The Children's Hospital Association is pleased to see that this measure is undergoing maintenance review. We note the developer's statement that comparison with adult normative data are not appropriate and suggest that the Standing Committee discuss appropriate display of measure results. We defer to the pediatric specialists on the Committee as well as the professional societies with regard to any specific issues related to scientific validity.
1667: Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL	Submitted by Ms. Kathryn Schubert	ASPN supports 1667. Specific to 1667, we note that there is no evidence in children that high hemoglobin is harmful but that low hemoglobin does affect some pediatric outcomes as noted by the measure developer and steering committee experts.
2699: Anemia of chronic kidney disease: Dialysis facility standardized transfusion ratio (STrR)	Submitted by Dr. Lisa McGonigal, MD, MPH	Oppose. KCP has consistently opposedthis measure because it does not adjust for hospital- or physician-related factors. We reiterate that the literature documents that both hospital and physician factors impact transfusion rates in other areas and that there is no reason to think transfusions related to ESRD patients are any different. We again urge CMS to review its data and document why the risk model should not account for these variables—i.e., the burden is on the developer to conduct the analyses and show that accounting for hospital-level and physician-level factors is not important in this area. Such details are particularly important because facilities do not have access to transfusion data; the developer must therefore provide transparency in this regard. We also are concerned with the approach and assumptions for the predictive model, which posits to reveal an actual versus predicted rate, when the basis for the ratio comes from claims data and not EMR data. The documentation fails to demonstrate it accurately predicts and identifies those who have had transfusions, and additional analytic rigor must be brought to bear for this measure.

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2699: Anemia of chronic kidney disease: Dialysis facility standardized transfusion ratio (STrR)	Submitted by Dr. Ellen Schwalenstocker, PhD, MBA	The measure description states this measure applies to adults, but we do not see a specific age in the numerator, denomoinator or exclusion statements.
2699: Anemia of chronic kidney disease: Dialysis facility standardized transfusion ratio (STrR)	Submitted by Joseph Vassalotti	The National Kidney Foundation (NKF) believes that a transfusion avoidance measure is important to protecting patients from unnecessary transfusions. Risks of red blood cell transfusions in dialysis patients include hyperkalemia, volume overload and antigen sensitization for a potential future kidney transplant. However, a transfusion avoidance measure should be stratified to appropriately capture blood transfusions that could have been prevented by the dialysis facility and exclude other reasons for transfusions. NKF acknowledges tracking blood transfusion data are critical to understanding patient safety hazards. Data collection will be difficult for facilities, since most blood transfusions are provided outside of the dialysis setting. NKF considers this measure to be complementary to the Hemoglobin Level <9g/dL Measure or NQF # 1660.
2700: Ultrafiltration rate greater than 13 ml/kg/hr	Submitted by Dr. Lisa McGonigal, MD, MPH	Oppose. KCP believes fluid management is a critical area to address through performance measurement, but opposes NQF 2700 and supports NQF 2701. NQF 2700 relies on a single data point per month, whereas NQF 2701 relies on an average across the treatments in the week the Kt/V is performed. Relying on a single data point will disadvantage those facilities on a Monday/Tuesday draw, since patients typically have greater fluid at the first treatment of the week; a single data point also is easier to game. The CMS measure also lacks a time component. In contrast, the KCQA measure, NQF 2701, includes patients in the numerator only if they have an average dialysis time of <240 minutes for the calculation period. The inclusion of the time component is critical to avoid an unintended adverse consequence that could result from the cascading effect of extending an individual's treatment time, given the upper rate of fluid removal is limited by the measure. Specifically, if an individual goes beyond his/her stated treatment time such that the following patient must start later, the second patient is likely to expect and want treatment to end at the "usual" time and thus be under-treated. The very real potential for harm to this "third-party" individual due to measurement-related actions for

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		other patients is the basis for the KCQA inclusion of the time component.
2700: Ultrafiltration rate greater than 13 ml/kg/hr	Submitted by Joseph Vassalotti	The National Kidney Foundation has concerns with this measure and believes that the preferable measure of ultrafiltration rate is reflected in the NQF#2701.
2701: Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)	Submitted by Dr. Lisa McGonigal, MD, MPH	Support. KCP believes fluid management is a critical area to address through performance measurement and supports this measure.
2701: Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)	Submitted by Ms. Kathryn Schubert	ASPN supports this measure.
2701: Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)	Submitted by Joseph Vassalotti	The National Kidney Foundation (NKF) notes that fluid management is one of the most important aspects of hemodialysis and including fluid management measure(s) in the End-stage Renal Disease Quality Incentive Program is important. NKF believes this measure is preferable to measure #2700 because it allows for an ultrafiltration rate (UFR) of <13 ml/kg or dialysis time of >4 hours. Increasing time can achieve fluid removal and blood pressure control goals that can be tailored to the individual patient. Including the time of at least 4 hours also protects against the risk of trying to satisfy the measure by meeting the UFR of>13ml/kg in the shortest amount of time, which may increase risks of fluid overload and intra-dialytic hypotension. Also, this measure uses the average of three consecutive sessions whereas measure 2700 is based on a single session. The NKF KDOQI hemodialysis adequacy draft guidelines (publication pending), do not include a target for UFR and instead recommend individualizing UFR targets for the patient. This is because the supporting evidence for a specific target is limited. One study (not cited in the evidence for this measure) suggests an increased risk for individuals with heart failure with a UFR between 10-14 ml/h/kg, but improvements in outcomes for individuals without heart failure with a UFR in that range (1). However, NKF believes the >13 ml/kg target for a quality measure of UFR has the most consensus among experts.

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		Additionally, implementing the measure is not without challenges. Successfully meeting the measure will require patient participation and adherence to the dialysis prescription and fluid restrictions. Accordingly, regulators will need to monitor for inappropriate patient discharges that may result from facilities trying cherry-pick compliant patients. Flythe, Jennifer E., et al. Rapid Fluid Removal During Dialysis is Associated With Cardiovascular Morbidity and Mortality. Kidney Int. 2011;79(2):250-257.
2702: Post-Dialysis Weight Above or Below Target Weight	Submitted by Dr. Lisa McGonigal, MD, MPH	Support. KCP believes fluid management is a critical area to address through performance measurement and supports this measure.
2702: Post-Dialysis Weight Above or Below Target Weight	Submitted by Ms. Kathryn Schubert	ASPN supports this measure only for the over age 18 patient population.
2702: Post-Dialysis Weight Above or Below Target Weight	Submitted by Joseph Vassalotti	The National Kidney Foundation (NKF) has concerns with this measure due to the imprecise ability and lack of evidence on best practices to determine a patient's target dry-weight and the potential that the target could be set above what is optimal in order to meet the measure. In addition the change in one Kg + or - is less significant in an obese patient than an underweight one.There are also concerns that efforts to challenge the dry weight – probing to lower targets to achieve optimal blood pressure and fluid status might be confounded by this measure. For patients who skip or shorten treatments this measure will be problematic to achieve. Dialysis facilities that have patients that frequently miss and skip treatments would be adversely affected. Accordingly, regulators will need to monitor for inappropriate patient discharges that may result from facilities trying cherry-pick compliant patients.
2703: Minimum Delivered Hemodialysis Dose	Submitted by Dr. Lisa McGonigal, MD, MPH	Support. KCP supports this measure. We believe the intent of the upper threshold for both adults and pediatric populations is to include patients on nocturnal dialysis that have been previously excluded as having a spurious spKt/V value. Accordingly, we support the new specifications and the composite. We also note that since the specifications now reflect ranges, the title should perhaps be modified.
2703: Minimum Delivered Hemodialysis Dose	Submitted by Dr. Ellen Schwalenstocker,	The Children's Hospital Association understands the rationale for creating this measure in an effort to acheive adequate volume for comparison across centers. However,

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	PhD, MBA	we are concerned that combining results might mask differences in quality of care provided to adult and pediatric patients. We suggest the Standing Committee consider the merits of providing age-stratified results in addition to the overall result.
2703: Minimum Delivered Hemodialysis Dose	Submitted by Ms. Kathryn Schubert	ASPN supports this measure
2703: Minimum Delivered Hemodialysis Dose	Submitted by Joseph Vassalotti	The updated National Kidney Foundation (NKF) KDOQI draft hemodialysis adequacy guidelines are undergoing review. Currently, this proposed adequacy measure for minimum hemodialysis dose generally harmonizes with the KDOQI draft guidelines as well as the KDOQI hemodialysis adequacy guidelines published in 2006. The exception is both the 2006 and the draft guidelines under consideration have exclusions for patients with residual renal function. In addition, NKF points out that these are minimum standards for achievement and higher targets may be appropriate, particularly for patients who struggle with fluid management.
2704: Minimum Delivered Peritoneal Dialysis Dose	Submitted by Dr. Lisa McGonigal, MD, MPH	Support. KCP supports this measure. We note that since the specifications now reflect ranges, the title should perhaps be modified. We recommend the frequency be clarified in the individual measures, so do so for the composite as well.
2704: Minimum Delivered Peritoneal Dialysis Dose	Submitted by Dr. Ellen Schwalenstocker, PhD, MBA	The Children's Hospital Association understands the rationale for creating this measure in an effort to acheive adequate volume for comparison across centers. However, we are concerned that combining results might mask differences in quality of care provided to adult and pediatric patients. We suggest the Standing Committee consider the merits of providing age-stratified results in addition to the overall result.
2704: Minimum Delivered Peritoneal Dialysis Dose	Submitted by Ms. Kathryn Schubert	ASPN supports this measure.
2704: Minimum Delivered Peritoneal Dialysis Dose	Submitted by Joseph Vassalotti	The 2006 National Kidney Foundation (NKF) KDOQI peritoneal dialysis adequacy guidelines align with this measure. However, we point out that these are minimum standards for achievement and higher targets may be appropriate, particularly for patients who struggle with fluid management.
2705: Delivered Dose of Dialysis	Submitted by Dr. Lisa McGonigal,	Support. KCP supports this measure. We note that since the specifications now reflect ranges, the title should

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Above Minimum	MD, MPH	perhaps be modified. We recommend the frequency be clarified in the individual measures, so do so for the composite as well.
2705: Delivered Dose of Dialysis Above Minimum	Submitted by Dr. Ellen Schwalenstocker, PhD, MBA	The Children's Hospital Association understands the rationale for creating this measure in an effort to acheive adequate volume for comparison across centers. However, we are concerned that combining results might mask differences in quality of care provided to adult and pediatric patients. We suggest the Standing Committee consider the merits of providing age-stratified results in addition to the overall result.
2705: Delivered Dose of Dialysis Above Minimum	Submitted by Ms. Kathryn Schubert	ASPN supports this measure.
2705: Delivered Dose of Dialysis Above Minimum	Submitted by Joseph Vassalotti	The updated National Kidney Foundation (NKF) KDOQI draft hemodialysis adequacy guidelines are undergoing review. Currently, the components of this composite adequacy measure generally align with the draft hemodialysis adequacy guidelines as well as the KDOQI hemodialysis adequacy guidelines published in 2006 The exception is both the 2006 and the draft guidelines under consideration have an exclusion for patients with residual renal function. Similarly, the measure also generally aligns with the 2006 NKF KDOQI peritoneal dialysis adequacy guidelines. However, we point out that these are minimum standards for achievement and higher targets may be appropriate, particularly for patients who struggle with fluid management.
2706: Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	Submitted by Dr. Lisa McGonigal, MD, MPH	Support. KCP continues to support this measure. We note that since the specifications now reflect a range, the title should perhaps be modified. We also recommend the frequency be clarified.
2706: Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	Submitted by Ms. Kathryn Schubert	ASPN supports this measure
General Draft	Submitted by Ms. Kathryn Schubert	Founded in 1969, ASPN is a professional society composed of pediatric nephrologists whose goal is to promote optimal care for children with kidney disease and to disseminate advances in the clinical practice and basic science of pediatric nephrology. The ASPN currently has over 600 members, making it the primary representative of the pediatric nephrology community in North America.

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		The pediatric ESRD population is different and unique from the adult ESRD population. Pediatric nephrologists treat young adult patients over the age of 18; therefore measures assessing adult ESRD patient care are applicable to the pediatric nephrologist and pediatric dialysis units providing care to their young adult population. ASPN offers the following specific comments on relevant quality measures before the NQF Renal Standing Committee: ASPN supports continued endorsement of measures 1667, 1423, 1424 and 1425. Specific to 1667, we note that there is no evidence in children that high hemoglobin is harmful but that low hemoglobin does affect some pediatric outcomes as noted by the measure developer and steering committee experts. ASPN does NOT support NQF 1660. A hemoglobin less than 9 is too low of a threshold, specifically due to a concern for an increased need for transfusion. ASPN recommends modifying it to a hemoglobin less than 10 to be consistent with measure 1667. ASPN notes that measures 2700 and 2701 are similar, but sees some important differences between them. ASPN recommends that NQF move forward with only one of these measures, and supports 2701 for the population over the age of 18. We recognize that pediatric patients may require longer treatment times for improved fluid management and therefore we do not recommend that this is a good candidate for future harmonization with the pediatric population. ASPN supports measure 2702 for patients 18 years and older, as the measure currently specifies. However, it is not a good candidate measure for harmonization in the pediatric population as it may result in over-estimation of target weight due to the lower weights in a pediatric sized patient. ASPN supports NQF endorsement of measures 2703, 2704, 2705 and 2706. Regarding the harmonization of measures, ASPN believes that where appropriate, it is essential to harmonize provider and facility measures and create age analogous measures that can apply broadly across the spectrum to

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		provide best care to patients. There may be cases where measures cannot be harmonized – be it physician or facility or pediatric or adult. We highly recommend that all stakeholders are involved in the conversation and decision-making as pediatric patients are different from adult patients. Pediatric measures in general should not be based on metrics from the adult patient population, and we urge measure developers to obtain pediatric-specific data to ensure that quality measures are appropriate for the pediatric population.

Appendix F: Measure Specifications

	0249 Delivered Dose of Hemodialysis Above Minimum
Steward	Centers for Medicare & Medicaid Services
Description	Percentage of all patient months for adult patients (> = 18years old) whose delivered dose of hemodialysis (calculated from the last measurement of the month using the UKM or Daugirdas II formula) was spKt/V >= 1.2.
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used. No data collection instrument provided URL
Level	Facility
Setting	Dialysis Facility
Numerator Statement	Number of patient months in denominator in which the delivered dose of hemodialysis (calculated from the last measurement of the month using the UKM or Daugirdas II formula) was spKt/V >= 1.2
Numerator Details	Months with spKt/V >=1.2 are counted in the numerator. Eligible spKt/V values are those >=1.2 during the reporting month. The last spKt/V value reported, not including missing, expired, and not performed, is selected when multiple values are reported in the month. Missing, expired, and not performed are not counted as achieving the minimum spKt/V threshold.
Denominator Statement	To be included in the denominator for a particular month, the patient must be on hemodialysis for the entire month, be >= 18 years old at the beginning of the month, must have had ESRD for greater than 90 days at the beginning of the month, must be dialyzing thrice weekly during the month, and must be assigned to that facility for the entire month.
Denominator Details	A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death, and transplant is obtained from CROWNWeb (including the CMS Medical Evidence Form (Form CMS-2728) and the Death Notification Form (Form CMS-2746)) and Medicare claims, as well as the Organ Procurement and Transplant Network (OPTN) and the Social Security Death Master File. To be included in the denominator for a particular month the patient must be on hemodialysis and assigned to that facility for the entire month, have received dialysis 3 times weekly, have had ESRD for greater than 90 days on the first day of the month, and be >=18 years old at the beginning of the month.
Exclusions	Exclusions that are implicit in the denominator definition include 1) peritoneal dialysis patients 2) pediatric patients (<18 years old) 3) those patients not on thrice weekly dialysis 4) all patients who have had ESRD for <91 days, and 5) Patients not assigned to the facility for the entire month. There are no additional exclusions for this measure.
Exclusion details	N/A

	0249 Delivered Dose of Hemodialysis Above Minimum
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion better quality = higher score
Algorithm	Denominator: For the reporting month, patients are included in the denominator if: • Patient modality is indicated as HD during the entire month (in-center or home) • Patient is on thrice weekly dialysis during the month • Patient age as of the beginning of the reporting month is at least 18 years • Patient has had ESRD for greater than 90 days at the beginning of the month • Patient is assigned to the facility for the entire month Numerator: For the reporting month, patients from the denominator are also included in the numerator if they have a spKt/V >=1.2. The last spKt/V value reported, not including missing, expired, and not performed, is selected when multiple values are reported in the month. No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 0323 : Adult Kidney Disease: Hemodialysis Adequacy: Solute 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: During the previous NQF review, the hemodialysis measures (#0249, #0323) were harmonized on the evidence regarding method of measuring adequacy and threshold values. One remaining difference was thought to not pose any substantial impact: the physician measure denominator is patient months rather than patients as in the facility measure. Since then we revised the numerator and denominator for 0249. Missing values are not counted in the numerator, in order to prevent gaming of the measure. 5b.1 If competing, why superior or rationale for additive value: It is anticipated that this proposed measure will allow for assessment of a larger population given the new denominator definition. Missing values are not counted in the numerator, in order to prevent gaming of the measure.

	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
Steward	Kidney Care Quality Alliance (KCQA)
Description	Percentage of end stage renal disease (ESRD) patients aged 18 years and older receiving hemodialysis during the 12-month reporting period and on dialysis >90 days who: 1. have a functional autogenous AVF (defined as two needles used or a single-needle device [NOT one needle used in a two-needle device]) (computed and reported separately); 2. have a functional AV graft (computed and reported separately); or 3. have a catheter, but have been seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for a functional autogenous AVF or AV graft at least once during the 12-month reporting period (computed and reported separately). Reporting should be stratified by incident versus prevalent patients, as defined by USRDS.
Type	Process
Data Source	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records Data elements for the measure can be collected via the CROWNWeb Electronic Data Interchange, available at URL: http://www.projectcrownweb.org/crown/index.php. No data collection instrument provided Attachment KCQA0251_DataDictionary02-26-15.pdf
Level	Clinician : Individual
Setting	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility
Numerator Statement	Number of patients from the denominator who: 1. have a functional autogenous AVF (defined as two needles used or a single-needle device) (computed and reported separately); or 2. have a functional AV graft (computed and reported separately); or 3. have
Numerator Details	Include in the numerator all patients from the denominator who meet the following criteria: 1. Access type = Functional autogenous AVF (defined as 2 needles used or single-needle device) (NOTE: 1 needle used in a 2-needle device is NOT acceptable) OR 2. Access type = • Functional AV graft OR • AVF combined with AV graft OR • Catheter (alone or combined with an AVF or AV graft) AND a. Patient seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for an AVF or AV graft during the 12-month reporting period AND b. Facility medical records contain the following types of documentation of the surgical evaluation: • A note or letter prepared by the primary nephrologist OR • A note or letter prepared by the vascular surgeon, other qualified surgeon, or interventional nephrologist trained in the primary placement of vascular access OR • A note prepared by facility personnel

	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
	AND • Date of the surgical evaluation: (MM/YYYY) AND • If permanent access was not placed, the reason for this decision.
Denominator Statement	All ESRD patients aged 18 years and older receiving hemodialysis during the 12-month reporting period and on dialysis for greater than 90 days. This measure includes both in-center and home hemodialysis patients.
Denominator Details	Include in the denominator all patients for a given nephrologist who meet the following criteria in the most recent month of the 12-month study period and who are not enrolled in hospice: 1. Diagnosis = ESRD AND 2. Primary type of dialysis = hemodialysis or home hemodialysis AND 3. Age = >/= 18 years AND 4. Time on dialysis = >90 days
Exclusions	None.
Exclusion details	Not applicable.
Risk Adjustment	No risk adjustment or risk stratification Not applicable.
Stratification	Not applicable.
Type Score	Rate/proportion better quality = higher score
Algorithm	The measure score is calculated by dividing the total number of patients included in the numerator by the total number of patients included in the denominator. IDENTIFICATION OF DENOMINATOR CASES To identify patients in the denominator, first calculate the following: • Patient age = (Date of first day of most recent month of study period)—(Patient's Date of Birth) • Patient time on dialysis = (Date of first day of most recent month of study period)—(Patient's Date Regular Chronic Dialysis Began) Include in the denominator all patients for a given nephrologist who meet the following criteria in the most recent month of the 12-month study period and who are not enrolled in hospice: 1. Diagnosis = ESRD AND 2. Primary type of dialysis = hemodialysis or home hemodialysis AND 3. Age = >/=18 years AND 4. Time on dialysis = >90 days IDENTIFICATION OF NUMERATOR CASES Include in the numerator all patients from the denominator who meet the following criteria:

	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
	1. Access type = Functional autogenous AVF (defined as 2 needles used or single-needle device) (NOTE: 1 needle used in a 2-needle device is NOT acceptable) OR 1. Access type = Functional AV graft OR 1. Access type = AVF combined with AV graft OR 1. Access type (select one): • AV fistula with a catheter • AV graft combined with a catheter • Catheter • Other/unknown AND 2. Patient referred to a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for an AVF or AV graft during the 12-month reporting period AND 3. Patient seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for an AVF or AV graft during the 12-month reporting period AND 4. Facility medical records contain the following types of documentation of the surgical evaluation: • A note or letter prepared by the primary nephrologist OR • A note or letter prepared by the vascular surgeon, other qualified surgeon, or interventional nephrologist trained in the primary placement of vascular access OR • A note prepared by facility personnel AND • Date of the surgical evaluation: (MM/YYYY) AND • If permanent access was not placed, the reason for this decision MEASURE SCORE CALCULATION Performance Rate = ([Patients with a functional AVF] + [Patients with a functional AV graft] + [Patients with a catheter who have been seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for a functional AVF or AV graft during the 12-month reporting period WITH documentation of the evaluation in the facility medical records]) ÷ ([Total ESRD patients >/=18 years of age receiving HD during the 12-month reporting period and on dialysis >90 days] – Patients enrolled in hospice]) Available in attached appendix at A.1
Copyright / Disclaimer	5.1 Identified measures: 0256 : Minimizing Use of Catheters as Chronic Dialysis Access 0257 : Maximizing Placement of Arterial Venous Fistula (AVF)

	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
	5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: NQF 0256 and 0257 focus on reducing catheter use exclusively in favor of AVF use. This construct ignores and thus disincentivizes use of AV grafts, which are oftentimes the most clinically appropriate access and are selected with and in the best interest of the patient, and may ultimately have a negative clinical impact. 5b.1 If competing, why superior or rationale for additive value: The KCQA measure acknowledges that AV grafts are frequently an appropriate clinical decision while continuing to disincentivize use of central venous catheters. Additionally, the measure is specified for use at the clinician, rather than the facility, level, as the clinical responsibility for vascular access decisionmaking lies primarily with the physician.

	0255 Measurement of Phosphorus Concentration
Steward	Centers for Medicare & Medicaid Services
Description	Percentage of all peritoneal dialysis and hemodialysis patient months with serum or plasma phosphorus measured at least once within the month.
Type	Process
Data Source	Electronic Clinical Data CROWNWeb No data collection instrument provided No data dictionary
Level	Facility
Setting	Dialysis Facility
Numerator Statement	Number of dialysis patient months in the denominator with serum or plasma phosphorus measured at least once within the reporting month.
Numerator Details	The numerator comprises all eligible patient months during the 1-month study period with a non-missing value for serum or plasma phosphorus.
Denominator Statement	Number of patient-months among in-center hemodialysis, home hemodialysis, or peritoneal dialysis patients under the care of the dialysis facility for the entire reporting month
Denominator Details	The denominator comprises all patient months for patients during the 1 month study period, where patients have an "Admit Date" prior or equal to the first day of the month; whose "Discharge Date" is blank or greater than or equal to the last day of the month; whose "Primary Type of Treatment" = ´Hemodialysis,´ ´CAPD´ or ´CCPD´ on the last day of the study period; and whose "Primary Dialysis Setting" = ´Dialysis Facility/Center´ on the last day of the Study Period
Exclusions	Exclusions that are implicit in the denominator definition include all patients who have not been in the facility the entire reporting month. There are no additional exclusions for this measure.
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion better quality = higher score
Algorithm	1. Using CROWNWeb-reported data (data stored as SAS files), identify the number of HD and PD patients under the care of a facility. 2. From this group, remove patients who were not in the facility for the entirety of the month (i.e., transient patients). 4. To form the numerator, remove all denominator-eligible patients who do not have a serum or plasma phosphorus (variable name, "phosphorus") measurement for the study month. 5. Calculate the facility´s rate of phosphorus measurement by dividing the number calculated in Step 3 (the denominator) by the number calculated in Step 4 (the numerator).
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value: N/A

	0256 Minimizing Use of Catheters as Chronic Dialysis Access
Steward	Centers for Medicare & Medicaid Services
Description	Percentage of patient months on maintenance hemodialysis during the last HD treatment of month with a chronic catheter continuously for 90 days or longer prior to the last hemodialysis session.
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data CROWNWeb is the primary data source. However, this measure can be collected through Medicare claims data (since July 2010) and Fistula First Breakthrough Initiative data (though the definition of the measure is slightly different). The measure has been publically reported using claims data since 2013. No data collection instrument provided No data dictionary
Level	Facility
Setting	Dialysis Facility
Numerator Statement	Number of patient months in the denominator who were continuously using a chronic catheter as hemodialysis access for 90 days or longer prior to the last hemodialysis session during the month.
Numerator Details	The numerator will be determined by counting the patient-months in the denominator who were on maintenance hemodialysis with a chronic catheter continuously for 90 days or longer prior to the last hemodialysis session of the month.
Denominator Statement	Adult hemodialysis patients who have had ESRD for greater than 90 days as of of the first day of the reporting month.
Denominator Details	The patient's age will be determined by subtracting the patient's date of birth from the first day of the reporting month. 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' or 'Home' on the last day of the study period, AND "Date Regular Chronic Dialysis Began" is prior to the first day of the study period. For both CROWNWeb and Claims data, the denominator will include all hemodialysis patients who are at least 18 years old and have had ESRD for greater than 90 days as of the first day of the reporting month.
Exclusions	Exclusions that are implicit in the denominator definition include pediatric patients (<18 years old), and acute hemodialysis patients (hemodialysis patients who have had ESRD for less than 91 days). There are no additional exclusions for this measure.
Exclusion details	See above denominator details.
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion better quality = lower score
Algorithm	For this measure calculation, the numerator will be divided by the denominator.Calculation of the numerator and denominator is described below. The denominator will include all patients at least 18 years old who are determined to be maintenance hemodialysis patients. The patient's age will be determined by subtracting the patient's date of birth from the first day of the reporting month.

	0256 Minimizing Use of Catheters as Chronic Dialysis Access
	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' or 'Home' 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 patient months in the denominator who were on maintenance hemodialysis with a chronic catheter continuously for 90 days or longer prior to the last hemodialysis session of the month. For CROWNWeb data, the numerator is defined as "Access_Type_id" in (19,20) while "19" means Catheter only and "20" means Port access only AND "Date Access Type for Dialysis Changed" is blank or, if populated, is more than 90 days prior to the last hemodialysis session of the month. For Claims data, we use data prior to reporting period, a 90 day lookback period (e.g. October – December 2012 for January 2013 reporting period) to determine catheter history AND vascular access type should satisfy (vas_cat='Y' and art_graft=' ' and art_fistula=' ')). No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:

	0257 Maximizing Placement of Arterial Venous Fistula (AVF)
Steward	Centers for Medicare & Medicaid Services
Description	Percentage of patient months for patients on maintenance hemodialysis during the last HD treatment of month using an autogenous AV fistula.
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data This measure is primarily designed for collection in CROWNWeb but can also be calculated from Fistula First and Medicare claims data. The measure has been publically reported using Medicare claims data since 2013. No data collection instrument provided No data dictionary
Level	Facility
Setting	Dialysis Facility
Numerator Statement	Number of patient months in the denominator who were using an autogenous AV fistula at the last HD treatment of month.
Numerator Details	The numerator will be determined by counting the patient months in the denominator who were using an AV fistula as the means of access.
Denominator Statement	For both CROWNWeb and Claims data, the denominator will include all hemodialysis patients who are at least 18 years old and have had ESRD for greater than 90 days as of the first day of the reporting month.
Denominator Details	For both CROWNWeb and Claims data, the denominator will include all hemodialysis patients who are at least 18 years old and have had ESRD for at least 90 days as of the first day of the reporting month.
Exclusions	Exclusions that are implicit in the denominator definition include pediatric patients (<18 years old) and acute hemodialysis patients (hemodialysis patients who have had ESRDS for less than 91 days). There are no additional exclusions for this measure.
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion better quality = higher score
Algorithm	For this measure calculation, the numerator will be divided by the denominator. Calculation of the numerator and denominator is described below. The denominator will include all patients at least 18 years old who are determined to be maintenance hemodialysis patients. The patient's age will be determined by subtracting the patient's date of birth from the first day of the reporting month. 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' or 'Home' 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 denominator will include all patients greater than or equal to 18 years old who are determined to be in-center hemodialysis, or home hemodialysis patients. The numerator will be determined by counting the patient months in the denominator who were on maintenance hemodialysis using an AV fistula as the means of access. In CROWNWeb, a patient is counted in the numerator if "Access_type_id" in (14,16) at the

	0257 Maximizing Placement of Arterial Venous Fistula (AVF)
	last treatment of the month where “14” represents AV fistula only (with 2 needles) and “16” represents AV Fistula combined with a Catheter; while in Medical Claims data, a patient is included if (vas_cat=' ' and art_graft=' ' and art_fistula='Y') OR (vas_cat='Y' and art_graft=' ' and art_fistula='Y') at the last treatment of the month. No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:

	0318 Delivered Dose of Peritoneal Dialysis Above Minimum
Steward	Centers for Medicare & Medicaid Services
Description	Percentage of all patient months for adult patients (>= 18) whose delivered peritoneal dialysis dose was a weekly Kt/Vurea >= 1.7 (dialytic + residual).
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used No data collection instrument provided No data dictionary
Level	Facility
Setting	Dialysis Facility
Numerator Statement	Number of patient months in the denominator whose delivered peritoneal dialysis was a weekly Kt/Vurea >= 1.7 (dialytic + residual, measured in the last 4 months).
Numerator Details	Reporting months with weekly Kt/Vurea >=1.7 (dialytic + residual) are counted in the numerator. If no weekly Kt/Vurea value is reported for a given patient in the reporting month, the most recent peritoneal dialysis weekly Kt/Vurea value in the prior 3 months is applied to the calculation for that month. Missing, expired, and not performed are not counted as achieving the minimum weekly Kt/Vurea threshold.
Denominator Statement	To be included in the denominator for a particular reporting month, the patient must be on peritoneal dialysis for the entire month, be >= 18 years old at the beginning of the month, must have had ESRD for greater than 90 days at the beginning of the month, and must be assigned to that facility for the entire month.
Denominator Details	A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death, and transplant is obtained from CROWNWeb (including the CMS Medical Evidence Form (Form CMS-2728) and the Death Notification Form (Form CMS-2746)) and Medicare claims, as well as the Organ Procurement and Transplant Network (OPTN) and the Social Security Death Master File. To be included in the denominator for a particular reporting month the patient must be on peritoneal dialysis and assigned to that facility for the entire month, have had ESRD for greater than 90 days on the first day of the month, and be >=18 years old at the beginning of the month.
Exclusions	Exclusions that are implicit in the denominator definition include 1) Patients not on peritoneal dialysis for the entire month 2) Pediatric patients (<18 years old) 3) All patients who have had ESRD for <91 days 4) Patients not assigned to the facility for the entire month There are no additional exclusions for this measure.
Exclusion details	None.
Risk Adjustment	No risk adjustment or risk stratification N/A

	0318 Delivered Dose of Peritoneal Dialysis Above Minimum
Stratification	N/A
Type Score	Rate/proportion better quality = higher score
Algorithm	Denominator: For the reporting month, patients are included in the denominator if: Patient modality is indicated as PD during the entire month Patient age as of the beginning of the reporting month is at least 18 years Patient has had ESRD for greater than 90 days at the beginning of the month Patient has been assigned to the facility for the entire month Numerator: For the reporting month, patients from the denominator are also included in the numerator if they have a weekly Kt/Vurea >= 1.7. If no weekly Kt/Vurea value is reported for a given patient in a month, the most recent peritoneal dialysis weekly Kt/Vurea value in the prior 3 months is applied to the calculation for that month. No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 0321 : Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: In the last maintenance cycle in 2011, 0318 was harmonized with 0321. Since then 0318 has been revised. The measure is not harmonized with 0321 missing values are not counted in the numerator, in order to prevent gaming of the measure. 5b.1 If competing, why superior or rationale for additive value: It is anticipated that this proposed measure will allow for assessment of a larger population given the denominator revision. Missing values are not counted in the numerator, in order to prevent gaming of the measure.

	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute
Steward	Renal Physicians Association
Description	Percentage of patients aged 18 years and older with a diagnosis of End Stage Renal Disease (ESRD) receiving peritoneal dialysis who have a total Kt/V >= 1.7 per week measured once every 4 months
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry N/A Attachment AMA-PCPI_AKID-11_PeritonealAdequacy_eSPEC-635289364639799938.pdf
Level	Clinician : Group/Practice, Clinician : Individual, Clinician : Team
Setting	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary, Rest Home, or Custodial Care Services
Numerator Statement	Patients who have a total Kt/V >= 1.7 per week measured once every 4 months
Numerator Details	Numerator Definition: Total Kt/V includes residual kidney function and equals peritoneal dialysate Kt/V plus renal Kt/V During the NQF Maintenance Process, an EHR specification was provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: Report the quality data code designated for this numerator: G8718 - Total Kt/V greater than or equal to 1.7 per week (Total clearance of urea [Kt]/volume [V])
Denominator Statement	All patients aged 18 years and older with a diagnosis of ESRD receiving peritoneal dialysis
Denominator Details	During the NQF Maintenance Process, an EHR specification was provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: Patients aged >= 18 years AND Diagnosis for ESRD (ICD-9-CM) [for use 1/1/2014-9/30/2014]: 585.6 Diagnosis for ESRD (ICD-10-CM) [for use 10/01/2014-12/31/2014]: N18.6 AND Encounter for Dialysis and Dialysis Catheter Care (ICD-9-CM) [for use 1/1/2014-9/30/2014]: V56.2, V56.32, V56.8 Encounter for Dialysis and Dialysis Catheter Care (ICD-10-CM) [for use 10/01/2014-12/31/2014]: Z49.02, Z49.32 AND Patient encounter during the reporting period (CPT): 90945, 90947, 90957, 90958, 90959, 90960, 90961, 90962, 90965, 90966, 90969, 90970
Exclusions	There are no denominator exceptions for this measure.
Exclusion details	N/A
Risk Adjustment	Other No risk adjustment or risk stratification. This measure is not risk adjusted.
Stratification	We encourage the results of this measure to be stratified by race, ethnicity, administrative sex, and primary language.

	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute
Type Score	Rate/proportion better quality = higher score
Algorithm	Calculation algorithm is included in field S.2b. Data Dictionary Code Table.
Copyright / Disclaimer	5.1 Identified measures: 0318 : Delivered Dose of Peritoneal Dialysis Above Minimum 5a.1 Are specs completely harmonized? Yes 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program).

	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute
Steward	Renal Physicians Association
Description	Percentage of calendar months within a 12-month period during which patients aged 18 years and older with a diagnosis of End Stage Renal Disease (ESRD) receiving hemodialysis three times a week for >= 90 days have a spKt/V >= 1.2
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry N/A Attachment AMA-PCPI_AKID-10_HDAdequacy_11.8.2011-635289365199063523.pdf
Level	Clinician : Group/Practice, Clinician : Individual, Clinician : Team
Setting	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary, Rest Home, or Custodial Care Services
Numerator Statement	Calendar months during which patients have a spKt/V >= 1.2
Numerator Details	Note: Urea kinetic modeling (UKM) or the second generation Daugirdas formula (simplified multivariable equation) are the most appropriate ways to calculate spKt/V, and the two accepted methods for calculating spKt/V per the KDOQI guidelines. For more information on these methods, please refer to National Kidney Foundation's 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). For Administrative/Claims, report the quality data code designated for this numerator: G8713 - spKt/V greater than or equal to 1.2 (single-pool clearance of urea [Kt] / volume [V]) During the NQF Maintenance Process, an EHR specification was provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table.
Denominator Statement	All calendar months during which patients aged 18 years and older with a diagnosis of ESRD are receiving hemodialysis three times a week for >= 90 days
Denominator Details	During the NQF Maintenance Process, an EHR specification was provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: Patients aged >= 18 years old AND Diagnosis for ESRD (ICD-9-CM) [for use 1/1/2014-9/30/2014]: 585.6 Diagnosis for ESRD (ICD-10-CM) [for use 10/01/2014-12/31/2014]: N18.6 AND Encounter for Dialysis and Dialysis Catheter Care (ICD-9-CM) [for use 1/1/2014-9/30/2014]: V56.0, V56.1, V56.32 Encounter for Dialysis and Dialysis Catheter Care (ICD-10-CM) [for use 10/01/2014-12/31/2014]: Z49.01, Z49.31, Z49.32 AND Hemodialysis treatment performed exactly three times per week for >= 90 days: G8714 AND Patient encounter during the reporting period (CPT): 90957, 90958, 90959, 90960, 90961, 90962, 90965, 90966, 90969, 90970
Exclusions	There are no denominator exceptions.
Exclusion details	N/A

	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	We encourage the results of this measure to be stratified by race, ethnicity, administrative sex, and primary language.
Type Score	Rate/proportion better quality = higher score
Algorithm	Calculation algorithm is included in S.2b. Data Dictionary Code Table
Copyright / Disclaimer	5.1 Identified measures: 0249 : Delivered Dose of Hemodialysis Above Minimum 5a.1 Are specs completely harmonized? Yes 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program).

	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
Steward	Centers for Medicare & Medicaid Services
Description	Percentage of patient months for all pediatric (<18 years old) in-center hemodialysis patients in which the delivered dose of hemodialysis (calculated from the last measurement of the month using the UKM or Daugirdas II formula) was spKt/V >= 1.2.
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used No data collection instrument provided No data dictionary
Level	Facility
Setting	Dialysis Facility
Numerator Statement	Number of patient months from the denominator in which the delivered dose of hemodialysis (calculated from the last measurement of the month using the UKM or Daugirdas II formula) was spKt/V >= 1.2.
Numerator Details	Months with spKt/V >=1.2 are counted in the numerator. Eligible spKt/V values are those >=1.2 during the reporting month. The last spKt/V value reported, not including missing, expired, and not performed, is selected when multiple values are reported in the month. Missing, expired, and not performed are not counted as achieving the minimum spKt/V threshold.
Denominator Statement	To be included in the denominator for particular month, a patient must be on hemodialysis for the entire month, must be <18 years old at the beginning of the month, must have had ESRD for greater than 90 days at the beginning of the month, must be on thrice weekly in-center hemodialysis during the month, and must be assigned to that facility for the entire month.
Denominator Details	A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death, and transplant is obtained from CROWNWeb (including the CMS Medical Evidence Form (Form CMS-2728) and the Death Notification Form (Form CMS-2746)) and Medicare claims, as well as the Organ Procurement and Transplant Network (OPTN) and the Social Security Death Master File. To be included in the denominator for a particular month the patient must be on hemodialysis and assigned to that facility for the entire month, must be on thrice weekly in-center hemodialysis during the month, have had ESRD for greater than 90 days on the first day of the month, and be <18 years old at the beginning of the month.
Exclusions	Exclusions that are implicit in the denominator definition include 1) Patients on home hemodialysis 2) Patients on peritoneal dialysis 3) Patients on ESRD less than 91 days 4) Patients not on thrice weekly dialysis 5) Patients not assigned to the facility for the entire month There are no additional exclusions for this measure.
Exclusion details	N/A

	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion better quality = higher score
Algorithm	Denominator: For the reporting month, patients are included in the denominator if: Patient modality is indicated as Hemodialysis during the entire month (in-center) Patient is dialyzing thrice weekly during the month Patient age as of the beginning of the reporting month is less than 18 years Patient has had ESRD for greater than 90 days at the beginning of the month Patient is assigned to the facility for the entire month Numerator: For the reporting month, patient months from the denominator are also included in the numerator if they have a spKt/V >=1.2. The last spKt/V value reported, not including missing, expired, and not performed, is selected when multiple values are reported in the month. No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:

	1424 Monthly Hemoglobin Measurement for Pediatric Patients
Steward	Centers for Medicare & Medicaid Services
Description	Percentage of patient months of pediatric (less than 18 years) in-center hemodialysis, home hemodialysis, and peritoneal dialysis patients who have monthly measures for hemoglobin during the reporting period.
Type	Process
Data Source	Electronic Clinical Data CROWNWeb No data collection instrument provided No data dictionary
Level	Facility
Setting	Dialysis Facility
Numerator Statement	Number of patient months of pediatric (less than 18 years old) in-center hemodialysis, home hemodialysis, and peritoneal dialysis patients with a measurement of hemoglobin during the reporting period. The hemoglobin value reported for the end of each repo
Numerator Details	The numerator will be determined by counting all patient months in the denominator that include values for 'Hemoglobin' and 'Hemoglobin Collection Date.' A valid hemoglobin value is defined as between 5-20 g/dL
Denominator Statement	All patient months for pediatric (less than 18 years old) in-center hemodialysis, home hemodialysis, and peritoneal dialysis patients under the care of the dialysis facility for the entire reporting month.
Denominator Details	Patients are included in the facility calculation if "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. The patient's age will be determined by subtracting the patient's date of birth from the first day of the reporting month. All patients under the facility's care for the entire calendar month and are less than 18 years of age will be included in the denominator.
Exclusions	Exclusions that are implicit in the denominator definition include all patients >=18 years and those who have not been in the facility the entire reporting month (transient patients). There are no additional exclusions for this measure.
Exclusion details	None.
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion better quality = higher score
Algorithm	Patients are included in the facility calculation if "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. The patient's age will be determined by subtracting the patient's date of birth from the first day of the reporting month. All in-center HD, home HD, and PD patients under the facility's care for the entire calendar month and are less than 18 years of age will be included in the denominator. The numerator will be determined by counting all patients in the denominator who have values for 'Hemoglobin' and 'Hemoglobin Collection Date.' No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized?

	1424 Monthly Hemoglobin Measurement for Pediatric Patients
	5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:

	1425 Measurement of nPCR for Pediatric Hemodialysis Patients
Steward	Centers for Medicare & Medicaid Services
Description	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.
Type	Process
Data Source	Electronic Clinical Data CROWNWeb No data collection instrument provided
Level	Facility
Setting	Dialysis Facility
Numerator Statement	Number of patient months in the denominator with monthly nPCR measurements.
Numerator Details	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	Number of all patient months for pediatric (less than 18 years old) in-center hemodialysis patients (irrespective of frequency of dialysis).
Denominator Details	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.
Exclusions	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.
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion better quality = higher score
Algorithm	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

	1425 Measurement of nPCR for Pediatric Hemodialysis Patients
	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. No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:

	1454 Proportion of patients with hypercalcemia
Steward	Centers for Medicare & Medicaid Services
Description	Percentage of adult dialysis patients with a 3-month rolling average of total uncorrected calcium (serum or plasma) greater than 10.2 mg/dL (hypercalcemia)
Type	Outcome
Data Source	Electronic Clinical Data CROWNWeb No data collection instrument provided
Level	Facility
Setting	Dialysis Facility
Numerator Statement	Number of patient-months in the denominator with 3-month rolling average of total uncorrected serum (or plasma) calcium greater than 10.2 mg/dL
Numerator Details	If there are multiple calcium measurements during the month, the last value will be used for the calculation. Calcium measurements can be based on either serum or plasma calcium.
Denominator Statement	Number of patient-months among adult (greater than or equal to 18 years old) in-center hemodialysis, home hemodialysis, or peritoneal dialysis patients under the care of the dialysis facility for the entire reporting month who have had ESRD for greater than 90 days.
Denominator Details	N/A
Exclusions	Exclusions that are implicit in the denominator definition include all patients who have not been in the facility the entire reporting month (transient patients), and patients who have had ESRD for <91 days. There are no additional exclusions for this measure.
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion better quality = lower score
Algorithm	Patients are included in the denominator if they are >= 18 years old as of the first day of the three month study period, are ESRD for more than 90 days as of the first day of the most recent month of the study period, and are under the care of the facility for at least 30 days as of the last day of the most recent month of the study period. The patient's age will be determined by subtracting the patient's date of birth from the first day of the most recent month of the study period. The patient's time on dialysis will be determined by subtracting the patient's date regular Chronic Dialysis Began from the first day of the most recent month of the study period. Patients on dialysis are determined as follows: Primary Type of Dialysis is Hemodialysis, Home Hemodialysis, CAPD or CCPD in the most recent month of the study period. Patients under the care of the facility for at least 30 days are determined as follows: if the discharge date from the specified facility is missing/null or is after the last day of the most recent month of the study period, then the patient's time under the care of the facility is calculated from the admit date to the last day of the most recent month of the study period; if the discharge date is prior to the last day of the most recent month of the study period, the patient is excluded from the calculation. The numerator will be determined by counting the patient months in the denominator that meet the following criteria: the average total serum or plasma calcium over the 3-month study period is greater than 10.2 mg/dL. If there is more than one serum or plasma calcium measurement within each month of the study period, the last value for the month shall be used for the calculation of the average. No diagram provided

	1454 Proportion of patients with hypercalcemia
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:

	1460 Bloodstream Infection in Hemodialysis Outpatients
Steward	Centers for Disease Control and Prevention
Description	The Standardized Infection Ratio (SIR) of Bloodstream Infections (BSI) will be calculated among patients receiving hemodialysis at outpatient hemodialysis centers.
Type	Outcome
Data Source	Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Imaging/Diagnostic Study, Electronic Clinical Data : Laboratory, Paper Medical Records, Electronic Clinical Data : Pharmacy 57.503 Denominators for Outpatient Dialysis form 57.502 Dialysis Event URL
Level	Facility, Population : National, Population : Regional, Population : State
Setting	Dialysis Facility
Numerator Statement	The number of new positive blood culture events based on blood cultures drawn as an outpatient or within 1 calendar day after a hospital admission. A positive blood culture is considered a new event and counted only if it occurred 21 days or more after a
Numerator Details	Information required: Number of positive blood culture events and event date Definition: : A positive blood culture is a blood culture that results in growth of 1 or more organisms. A new positive blood culture (not less than 21 days after a previous positive blood culture in the same patient) in a hemodialysis patient identified from blood cultures taken as an outpatient or within 1 calendar day after a hospital admission. Data specifications: Events are counted if the following field: "patient with a positive blood culture" (on Form 57.502 under Event Details) is checked as being present. Additional data collection items/responses: Vascular access types are defined as follows-- Nontunneled central line: a central venous catheter that travels directly from the skin entry site to a vein and terminates close to the heart or one of the great vessels, typically intended for short term use Tunneled central line: a central venous catheter that travels a distance under the skin from the point of insertion before terminating at or close to the heart or one of the great vessels Graft: a surgically created connection between an artery and a vein using implanted material (typically synthetic) to provide vascular access for hemodialysis Fistula: a surgically created direct connection between an artery and a vein to provide vascular access for hemodialysis Other vascular access device: includes hybrid access devices (e.g., HeRO vascular access device), ports, and any other central vascular access devices that do not meet the above definitions
Denominator Statement	Number of maintenance hemodialysis patients treated in the outpatient hemodialysis center on the first 2 working days of the month.
Denominator Details	Target population is all maintenance hemodialysis patients treated on the first 2 working days of a particular month in an outpatient hemodialysis center. Data specification: The numeric value entered into the field labeled "Total patients" (on Form 57.503) is used as the denominator.
Exclusions	Patients receiving inpatient hemodialysis and home hemodialysis are excluded
Exclusion details	The inpatient hemodialysis exclusion is only relevant for facilities that provide both outpatient (maintenance) and inpatient (acute or maintenance) hemodialysis. Patients who receive inpatient hemodialysis in the same facility are excluded. The home dialysis exclusion applies to all patients who are on home dialysis, including but not limited to home dialysis patients who

	1460 Bloodstream Infection in Hemodialysis Outpatients
	are monitored by a dialysis facility.
Risk Adjustment	Statistical risk model Both the numerator and denominator are stratified by vascular access type since vascular access type is the single greatest risk factor for bloodstream infection in this population. The vascular access variables that are collected and included in this ana URL
Stratification	Both the numerator and denominator are stratified by patient vascular access type, where permanent central lines are defined as tunneled central lines (or tunneled central venous catheters) and temporary central lines are defined as nontunneled central li
Type Score	Rate/proportion better quality = lower score
Algorithm	The Standardized Infection Ratio (SIR) is calculated as follows: 1. Identify the number of BSI in each vascular access stratum 2. Total these numbers for an observed number of BSIs 3. Obtain the predicted number of BSIs in the same strata by multiplying the observed patient-months by the corresponding BSI rates in specific strata from a standard population 4. Sum the number of predicted BSIs from all strata in the annual period 5. Divide the total number of observed BSI events (#2 above) by the predicted number of BSIs (#4 above) 6. Result = SIR
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:

	1660 ESRD Patients Receiving Dialysis: Hemoglobin Level <9g/dL
Steward	Renal Physicians Association
Description	Percentage of calendar months within a 12-month period during which patients aged 18 years and older with a diagnosis of ESRD who are receiving hemodialysis or peritoneal dialysis have a Hemoglobin level <9g/dL
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records, Electronic Clinical Data : Registry N/A Attachment ESRD Patients receiving dialysis Hbg less than 9g.pdf
Level	Clinician : Group/Practice, Clinician : Individual, Clinician : Team
Setting	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary, Rest Home, or Custodial Care Services
Numerator Statement	Calendar months during which patients have a Hemoglobin level <9g/dL* *The hemoglobin values used for this measure should be a most recent (last) hemoglobin value recorded for each calendar month
Numerator Details	See attached for EHR specifications. For Claims/Administrative: Report CPT II code 3XXXF: Hemoglobin level < 9 g/dL
Denominator Statement	All calendar months during which patients aged 18 years and older with a diagnosis of ESRD are receiving hemodialysis or peritoneal dialysis
Denominator Details	See attached for EHR Specifications. For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, CPT)
Exclusions	Documentation of medical reason(s) for patient having a Hemoglobin level <9g/dL (eg, patients who have non-renal etiologies of anemia [eg, sickle cell anemia or other hemoglobinopathies, multiple myeloma, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy], other medical reasons)
Exclusion details	Append modifier to CPT II code 3XXXF-1P
Risk Adjustment	Other We account for risk adjustment by inclusion of the exceptions for this measure. Exceptions for this measure are listed above, in section 2a1.8.
Stratification	We encourage the results of this measure to be stratified by race, ethnicity, gender, and primary language, and have included these variables as recommended data elements to be collected.
Type Score	Rate/proportion better quality = lower score
Algorithm	Calculation algorithm is included in data dictionary/code table attachment (2a1.30).
Copyright / Disclaimer	5.1 Identified measures: 1667 : Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: This measure is related to NQF 1667 - a pediatric measure. RPA does not believe that a person's anemia treatment should change once they turn 18 years old. In addition, pediatric nephrologists often continue to see patients until they are 21 years old. However, to reconginze the changing anemia targets, the adult measure has been reduced to <9 g/dL. 2. Based on historical evidence, failure to treat anemia with ESAs results in Hgb levels <8 and is associated

	1660 ESRD Patients Receiving Dialysis: Hemoglobin Level <9g/dL
	with marked worsening of quality of life. 5b.1 If competing, why superior or rationale for additive value: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program).

	1662 Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy
Steward	Renal Physicians Association
Description	Percentage of patients aged 18 years and older with a diagnosis of CKD (not receiving RRT) and proteinuria who were prescribed ACE inhibitor or ARB therapy within a 12-month period
Type	Process
Data Source	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records, Electronic Clinical Data : Registry N/A __Attachment ACE_or_ARB_data_file_-_2015.pdf
Level	Clinician : Group/Practice, Clinician : Individual, Clinician : Team
Setting	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary, Rest Home, or Custodial Care Services
Numerator Statement	Patients who were prescribed ACE inhibitor or ARB therapy within a 12-month period *The above list of medications/drug names is based on clinical guidelines and other evidence. The specified drugs were selected based on the strength of evidence for their
Numerator Details	See attached for EHR specifications. For Claims/Administrative: Report CPT Category II 4009F Angiotensin converting enzyme (ACE) inhibitor or Angiotensin Receptor Blocker (ARB) therapy prescribed
Denominator Statement	All patients aged 18 years and older with the diagnosis of CKD (Stages 1-5, not receiving RRT) and proteinuria Definitions: Proteinuria: 1. >300mg of albumin in the urine per 24 hours OR 2. ACR >300 mcg/mg creatinine OR 3. Protein to creatinine ratio > 0.3 mg/mg creatinine RRT (Renal Replacement Therapy)-For the purposes of this measure, RRT includes hemodialysis, peritoneal dialysis, and kidney transplantation
Denominator Details	See attached for EHR specifications. For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, CPT)
Exclusions	Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, pregnancy, history of angioedema, cough due to ACE Inhibitor or ARB therapy, allergy to medications, other medical reasons) Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy (patient declined, other patient reasons)
Exclusion details	Append modifier to CPT II code 4009F-1P Append modifier to CPT II code 4009F-2P
Risk Adjustment	No risk adjustment or risk stratification As a process measure, no risk adjustment is necessary.
Stratification	We encourage the results of this measure to be stratified by race, ethnicity, primary language, and gender, and have included these variables as recommended data elements to be collected.

	1662 Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy
Type Score	Rate/proportion better quality = higher score
Algorithm	Calculation algorithm is included in data dictionary/code table attachment (2a1.30).
Copyright / Disclaimer	5.1 Identified measures: 0066 : Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%) 0081 : Heart Failure (HF): Angiotensin-Converting Enzyme (AC 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program). The data source for ActiveHealth measures is what they call “level 2 clinically enriched data” (including data from claims & pharmacy). Our measure is specified for use in administrative claims (using CPT II codes) as well as integration into EHRs. The implementation of measures that are specified using clinically enriched data is significantly limiting in that it would only apply to those groups/settings with access to that type of information (ie, pharmacy data). NQF staff have noted that the ActiveHealth measures are in use by health plans – a 3 million patient database system. By comparison, our measures are in CMS’s PQRS program providing an incentive payment to eligible professionals who satisfactorily report data on quality measures for services furnished to 46 million Medicare beneficiaries.

	1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL
Steward	Renal Physicians Association
Description	Percentage of calendar months within a 12-month period during which patients aged 17 years and younger with a diagnosis of End Stage Renal Disease (ESRD) receiving hemodialysis or peritoneal dialysis have a hemoglobin level < 10 g/dL
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry N/A Available at measure-specific web page URL identified in S.1 Attachment AMA-PCPI PKID-3_Hgblessthan10-635289374004906657.pdf
Level	Clinician : Group/Practice, Clinician : Individual, Clinician : Team
Setting	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary, Rest Home (eg, Assisted Living Facility), or Custodial Care Services
Numerator Statement	Calendar months during which patients have a hemoglobin level < 10 g/dL
Numerator Details	Numerator Detail: The hemoglobin values used for this measure should be the most recent (last) hemoglobin value recorded for each calendar month During the NQF Maintenance Process, EHR Specifications were provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Claims/Administrative: G8973: Most recent hemoglobin (Hgb) level < 10 g/dL
Denominator Statement	All calendar months during which patients aged 17 years and younger with a diagnosis of ESRD are receiving hemodialysis or peritoneal dialysis
Denominator Details	During the NQF Maintenance Process, EHR Specifications were provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: Patients aged <= 17 years AND Diagnosis for ESRD (ICD-9-CM) [for use 1/1/2014-9/30/2014]: 585.6 Diagnosis for ESRD (ICD-10-CM) [for use 10/01/2014-12/31/2014]: N18.6 AND Patient encounter during the reporting period (CPT): 90945, 90947, 90951, 90952, 90953, 90954, 90955, 90956, 90957, 90958, 90959, 90963, 90964, 90965, 90967, 90968, 90969
Exclusions	Documentation of medical reason(s) for patient having a hemoglobin level < 10 g/dL (eg, patients who have non-renal etiologies of anemia [eg, sickle cell anemia or other hemoglobinopathies, hypersplenism, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy, post-operative bleeding, active bloodstream or peritoneal infection], other medical reasons)
Exclusion details	The PCPI exception methodology uses three categories of reasons for which a patient may be removed from the denominator of an individual measure. These measure exception categories are not uniformly relevant across all measures; for each measure, there must be a clear rationale to permit an exception for a medical, patient, or system reason. Examples are provided in the measure exception language of instances that may constitute an exception and are intended to serve as a guide to clinicians. For measure 1667, exceptions may include medical reason(s) for patient having a hemoglobin level < 10g/dL (eg, patients who have non-

	1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL
	renal etiologies of anemia [eg, sickle cell anemia or other hemoglobinopathies, hypersplenism, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy, postoperative bleeding, active bloodstream or peritoneal infection], other medical reasons). Where examples of exceptions are included in the measure language, value sets for these examples are developed and included in the eSpecifications. Although this methodology does not require the external reporting of more detailed exception data, the PCPI recommends that physicians document the specific reasons for exception in patients' medical records for purposes of optimal patient management and audit-readiness. The PCPI also advocates the systematic review and analysis of each physician's exceptions data to identify practice patterns and opportunities for quality improvement. Additional details by data source are as follows: During the NQF Maintenance Process, EHR Specifications were provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: G8975: Documentation of medical reason(s) for patient having a hemoglobin level < 10 g/dL (e.g., patients who have non-renal etiologies of anemia (e.g., sickle cell anemia or other hemoglobinopathies, hypersplenism, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy, postoperative bleeding, active bloodstream or peritoneal infection), other medical reasons)
Risk Adjustment	Other We account for risk adjustment by inclusion of the exceptions for this measure. Exceptions for this measure are listed in field S.10. Denominator Exclusions.
Stratification	We encourage the results of this measure to be stratified by race, ethnicity, administrative sex, and primary language.
Type Score	Rate/proportion better quality = lower score
Algorithm	Calculation algorithm is included in the attachment in field S.2b. Data Dictionary Code Table. To calculate performance rates: 1) Find the patients who meet the initial patient population (ie, the general group of patients that a set of performance measures is designed to address). 2) From the patients within the initial patient population criteria, find the patients who qualify for the denominator (ie, the specific group of patients for inclusion in a specific performance measure based on defined criteria). Note: in some cases the initial patient population and denominator are identical. 3) From the patients within the denominator, find the patients who qualify for the Numerator (ie, the group of patients in the denominator for whom a process or outcome of care occurs). Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator 4) From the patients who did not meet the numerator criteria, determine if the physician has documented that the patient meets any criteria for exception when exceptions have been specified [for this measure: medical reason(s) for patient having a hemoglobin level < 10g/dL (eg, patients who have non-renal etiologies of anemia [eg, sickle cell anemia or other hemoglobinopathies, hypersplenism, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy, postoperative bleeding, active bloodstream or peritoneal infection], other medical reasons)]. If the patient meets any exception criteria, they should be removed from the denominator for performance calculation. --Although the exception cases are removed from the denominator population for the performance calculation, the exception rate (ie, percentage with valid exceptions) should be calculated and reported along with performance rates to track variations in care and highlight possible areas of focus for QI.

	1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL
	If the patient does not meet the numerator and a valid exception is not present, this case represents a quality failure.
Copyright / Disclaimer	5.1 Identified measures: 1424 : Monthly Hemoglobin Measurement for Pediatric Patients 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program). 5b.1 If competing, why superior or rationale for additive value: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program).

	2594 Optimal End Stage Renal Disease (ESRD) Starts
Steward	The Permanente Federation
Description	Optimal End Stage Renal Disease (ESRD) Starts is the percentage of new adult ESRD patients during the measurement period who experience a planned start of renal replacement therapy by receiving a preemptive kidney transplant, by initiating home dialysis, or by initiating outpatient in-center hemodialysis via arteriovenous fistula or arteriovenous graft.
Type	Process
Data Source	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry The data collection instrument is in the appendix. It can be completed from records maintained by the renal care team as patients reach ESRD, and submitted to the measure analyst every 6 months. CMS 2728 Form: Within KP we do not have access to this data, but all the essential data elements are available on the CMS 2728 Form which is submitted for every new ESRD patient in the US (whether they have Medicare coverage or not). The only missing data is the date of stopping dialysis if recover from acute renal failure by 90 days, and in most cases, a 2728 Form is not submitted for these patients. Patients who recover kidney function and stop dialysis by 90 days are not included in the denominator or numerator. We anticipate that this will be the source of data for organizations outside of KP in the future. Available in attached appendix at A.1 Attachment NQF_Renal_Measure_2594_Data_Elements.xlsx
Level	Clinician : Group/Practice, Health Plan, Integrated Delivery System, Population : Regional, Clinician : Team
Setting	Ambulatory Care : Clinician Office/Clinic
Numerator Statement	The number of new ESRD patients age 18 and over who initiate renal replacement therapy in the twelve month measurement period with an optimal ESRD therapy (specific optimal ESRD therapies are defined in section S.6).
Numerator Details	The Optimal ESRD Starts numerator is the total number of new patients age 18 and over who initiate renal replacement therapy for the first time and do not come off dialysis by 90 days, with one of the following: • A preemptive kidney transplant or simultaneous pancreas-kidney transplant (SPK). Preemptive means that the patient has never experienced out-patient dialysis, OR • Initial home or self-dialysis modality, including planned and "successful urgent start" peritoneal dialysis (PD) and home hemodialysis (HHD) via an arteriovenous fistula or arteriovenous graft. ”Successful urgent start” peritoneal dialysis means that the patient never experienced outpatient hemodialysis via a hemodialysis catheter before starting outpatient peritoneal dialysis, OR • Initial outpatient hemodialysis (HD), including self-hemodialysis (SHD), via arteriovenous fistula (AVF) prepared surgically without use of artificial materials. The patient may have a hemodialysis catheter in place if it is not used. Do not count patient with a single needle in AVF with blood return via catheter, OR • Initial outpatient hemodialysis (HD), including self-hemodialysis (SHD), via arteriovenous graft (AVG), limited to no more than 10% of all patients starting in-center hemodialysis#. The patient may have a hemodialysis catheter if it is not used. Do not count patient with a single needle in AVG with blood return via catheter. # An arteriovenous fistula (AVF) is highly preferred for hemodialysis over an arteriovenous graft (AVG). AVF are associated with many fewer follow-up encounters with vascular surgery and interventional radiology to remove clots, dilate and replace. CMS has recognized AVF superiority in its Fistula First Quality Initiative, which continues to collect data and promote

	2594 Optimal End Stage Renal Disease (ESRD) Starts
	practice improvement methods. Nevertheless, not every patient is suitable for an AVF, and these patients require an AVG for hemodialysis which is still much better than hemodialysis by catheter. In our 3 year experience measuring Optimal ESRD Starts in Kaiser Permanente less than 5% of new hemodialysis patients start with an AVG as their initial access. The 10% of new hemodialysis patient limit for AVG was determined by an interregional Kaiser Permanente nephrologist work group to be consistent with the CMS Fistula First Initiative and in consideration of potential practice changes in the future.
Denominator Statement	The number of patients age 18 and over who receive a preemptive kidney transplant or initiate long-term dialysis therapy (do not recover kidney function by 90 days) for the first time in the twelve month measurement period
Denominator Details	The population being measured are patients age 18 and over who 1) receive a preemptive kidney transplant (having never received outpatient dialysis), including simultaneous pancreas and kidney transplant, plus 2) patients age 18 and over initiating long-term maintenance dialysis who do not recover kidney function by 90 days. The population includes patients who start renal replacement therapy and then are lost to follow up (lose insurance, move away) and/or die. The denominator is the number of the above patients within the measured entity during the 12-month measurement period. Clarifications based on the above definition (not exclusions): 1. The denominator does not include patients who initiate outpatient dialysis but then recover GFR to the point where they can stop dialysis treatments by 90 days after the first outpatient dialysis. 2. The denominator does not include patients who previously reached ESRD, such as • Patients who previously were on dialysis 90 days or more who then recovered kidney function for a while, but then restarted dialysis • Patients who switch from one dialysis modality to another, for example switching from in-center hemodialysis to home dialysis. • Patients with failing kidney transplants starting or returning to dialysis. 3. The denominator does not include patients who died without experiencing outpatient dialysis or a kidney transplant.
Exclusions	None
Exclusion details	None
Risk Adjustment	No risk adjustment or risk stratification n/a
Stratification	As there is no patient sampling (all patients who reach ESRD are included), there is no stratified sampling. For comparative purposes and tracking within Kaiser Permanente, the metric has been calculated (stratified) by geographic medical regions or are
Type Score	Rate/proportion better quality = higher score
Algorithm	1. The target population is all new ESRD patients as described in S.9. Denominator Details. There are no exclusions. Data is compiled and submitted on standardized spreadsheets. 2. Determine denominator: • Eliminate patients who do not meet denominator definition S.9. Denominator Details a. Eliminate patients who recovered kidney function by day 90

	2594 Optimal End Stage Renal Disease (ESRD) Starts
	b. Eliminate patients who previously were on dialysis 90 days or more who then recovered kidney function then later restarted dialysis c. Eliminate patients starting dialysis after failed transplant d. Eliminate patients changing dialysis modality e. Eliminate patients who died without experiencing outpatient dialysis or a kidney transplant • Eliminate patients with incomplete data if unavailable 3. Count patients in each category. Each denominator patient must be assigned to one and only one of the groups below. Rules are listed in S.6. Numerator Details Group A: Preemptive kidney transplant Group B: Peritoneal Dialysis (Home) Group C: Home Hemodialysis Group D: In-center HD with AVF Group E: In-center HD with AVG Group F: In-center HD with Catheter 4. Note: Denominator = A + B + C + D + E + F 5. Calculate Adjusted AVG (E') = Smaller of [E] or [(C + D + E + F) ÷ 10] 6. Calculate Optimal ESRD Starts = ((A + B + C + D + E'))/Denominator) x 100% 7. Calculate Modality Sub-metrics • Preemptive Kidney Transplant Starts + (A/Denominator) x 100% • Home Dialysis Starts = ((B + C))/Denominator) x 100% • Optimal AVF & AVG Starts = ((D + E'))/Denominator) x 100% • Non-Optimal ESRD Starts = 100% - Optimal ESRD Starts Available in attached appendix at A.1
Copyright / Disclaimer	5.1 Identified measures: 0256 : Minimizing Use of Catheters as Chronic Dialysis Access 0257 : Maximizing Placement of Arterial Venous Fistula (AVF) 1460 : Bloodstream Infection in Hemodialysis Outpatients 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: There are two related measures, 0256 and 0257, but no competing measures. These measures and Optimal ESRD Starts are complementary with different rationale and different data collection methods. Optimal ESRD Starts focuses on patients who need to start renal replacement therapy, including hemodialysis, whereas measures 0256 and 0257 both focus on improving vascular access for patients already on hemodialysis. The Measure 0256 Hemodialysis Vascular Access – Minimizing use of catheters as Chronic Dialysis Access metric is a percentage of patients currently on maintenance hemodialysis with a chronic catheter in place continuously for 90 days or more. As opposed to Optimal ESRD Starts, which is an incidence rate for new ESRD patients, measure 0256 is a prevalence measure of the existing hemodialysis population. Another difference is that even a single first treatment with a catheter is a negative Optimal ESRD Start outcome, whereas measure 0256 requires a catheter to be present for 90 days or longer. While the denominator populations are not harmonized, Optimal ESRD Starts is complimentary as more Optimal ESRD Start without a hemodialysis catheter will lower chronic catheter prevalence. The Measure 0257 Hemodialysis Vascular Access – Maximizing Placement of Arterial Venous Fistula metric is a percentage of patients on maintenance hemodialysis using an autogenous arteriovenous fistula (AVF). Like optimal ESRD Starts, it

	2594 Optimal End Stage Renal Disease (ESRD) Starts
	focuses on increasing the use of arteriovenous fistulas as the best type of vascular access for hemodialysis. As opposed to Optimal ESRD Starts, which is an incidence rate for new ESRD patients, measure 0257 is a prevalence measure of the existing hemodialysis population. While the denominator populations are not harmonized, Optimal ESRD Starts is complimentary. An Optimal ESRD Start with an AVF will result in higher AVF prevalence. In summary, Optimal ESRD starts is quite different in focus (Pre-ESRD patient planning versus managing patients already on hemodialysis), covers home dialysis and transplant as well as inpatient hemodialysis, and is the only metric to impact patients before and as they transition to ESRD. It is an incidence rate at the point of reaching ESRD as opposed to a prevalence rate in patients already on hemodialysis. Optimal ESRD Starts tells how a health care entity is performing in the build up to ESRD to optimize each patient's modality choice, and the other two measures address how an organization is doing after patients reach ESRD, limited only to hemodialysis. 5b.1 If competing, why superior or rationale for additive value:

	2699 Anemia of chronic kidney disease: Dialysis facility standardized transfusion ratio (STrR)
Steward	Centers for Medicare and Medicaid Services
Description	The risk adjusted facility level transfusion ratio "STrR" is specified for all adult dialysis patients. It is a ratio of number of eligible red blood cell transfusion events observed in patients dialyzing at a facility, to the number of eligible transfusions that would be expected under a national norm, after accounting for the patient characteristics within each facility. Eligible transfusions are those that do not have any claims pertaining to the comorbidities identified for exclusion, in the one year look back period prior to each observation window.
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data These data are part of an extensive and comprehensive national ESRD patient database, derived from the Consolidated Renal Operations in a Web-enabled Network (CROWN) data system, Medicare claims, and the Social Security Death Master File. The CROWN data system is made up of the Renal Management Information System (REMIS) and CROWNWeb and is updated regularly using the Medicare Enrollment Database (EDB), ESRD Medical Evidence Report forms (CMS 2728), ESRD Death Notification forms (CMS 2746), and the Organ Procurement and Transplantation Network (OPTN) transplant database. No data collection instrument provided Attachment STrR Code Table-635605475147100397.xlsx
Level	Facility
Setting	Dialysis Facility
Numerator Statement	Number of eligible observed red blood cell transfusion events. Events are defined as transfer of one or more units of blood or blood products into recipient's blood stream (code set is provided in the numerator details) among patients dialyzing at the fac
Numerator Details	Red blood cell transfusions are identified by in-patient records with revenue center codes in (0380, 0381, 0382, 0389, 0390, 0391, 0392, 0399) or value code = 37 or procedure code in (9903, 9904) and with out-patient records with revenue center codes in (0380, 0381, 0382, 0389, 0390, 0391, 0392, 0399) and HCPCS code in (P9010, P9011, P9016, P9021, P9022, P9038, P9039, P9040, P9051, P9054, P9056, P9058, 36430). The numerator is calculated using Medicare Claims data. Transfusion events are identified by using the above mentioned codes and then the patient is attributed to a dialysis facility using the rules discussed in the denominator details (S.9). The numerator is the count of all such eligible transfusion events over the inclusion periods as defined below in section S.11, for a given facility. Our method for counting transfusion events relies on a conservative counting algorithm and, because of the way transfusion information is reported in Medicare claims, we use different rules for counting transfusion events, depending on whether or not the event occurs in the inpatient setting, or an outpatient setting. The most common way events are reported on claims is by reporting a revenue center or value code (inpatient claims) or for outpatient claims, reporting HCPCS codes for a revenue center date. One "transfusion event" is counted per inpatient claim if one or more transfusion-related revenue center or value codes are present. This is the way most inpatient transfusion events are reported on claims (i.e., using revenue center or value codes, not procedure codes). We only count a single transfusion event for an inpatient claim regardless of the number of transfusion revenue center and value codes reported so that the number of discrete events counted is the same whether the claim indicates 1 unit of blood or multiple units of blood. This results in a very conservative estimate of blood transfusions from inpatient claims. A small fraction of inpatient transfusion events are identified using specific procedure codes. For these cases, we are able to identify multiple transfusion events for some hospitalizations

	2699 Anemia of chronic kidney disease: Dialysis facility standardized transfusion ratio (STrR)
	and count a unique "transfusion event" for each transfusion procedure code listed on an inpatient claim. CMS allows the transfusion procedure to be billed only once per day per visit. Transfusion events are not common in outpatient settings, but similar rules apply. Multiple HCPCS codes reported for the same revenue center date are counted as a single transfusion event regardless of the number of units of blood recorded. In other words, 3 pints of blood reported with the same revenue center date would be counted as a single transfusion event. The detailed procedures to determine unique transfusion events at the claim level are presented in a flow chart in the Appendix.
Denominator Statement	Number of eligible red blood cell transfusion events (as defined in the numerator statement) that would be expected among patients at a facility during the reporting period, given the patient mix at the facility. Inclusion episodes are those that do not have any claims pertaining to the comorbidities identified for exclusion, in the one year look back period prior to each observation window.
Denominator Details	Starting with day 91 after onset of ESRD, a patient is attributed to a facility once the patient has been treated there for the past 60 days and for the following 60 days after transfer to another dialysis facility. Based on a risk adjustment model for the overall national transfusion rates, we compute the expected number of red blood cell transfusion events for each patient attributed to a given facility. The sum of all such expectations over patients in a facility yields the overall expected number of transfusions for a given facility given the specific patient mix. This forms the denominator of the measure. This measure is based on Medicare administrative claims and databases and is applied to patients covered by Medicare.
Exclusions	All transfusions associated with transplant hospitalization are excluded. Patients are excluded if they have a Medicare claim for hemolytic and aplastic anemia, solid organ cancer (breast, prostate, lung, digestive tract and others), lymphoma, carcinoma in situ, coagulation disorders, multiple myeloma, myelodysplastic syndrome and myelofibrosis, leukemia, head and neck cancer, other cancers (connective tissue, skin, and others), metastatic cancer, and sickle cell anemia within one year of their patient at risk time. Since these comorbidities are associated with higher risk of transfusion and require different anemia management practices that the measure is not intended to address, every patient's risk window is modified to have at least 1 year free of claims that contain diagnoses on the exclusion list.
Exclusion details	All transfusions associated with transplant hospitalization are excluded. Patients are excluded if they have a Medicare claim for hemolytic and aplastic anemia, solid organ cancer (breast, prostate, lung, digestive tract and others), lymphoma, carcinoma in situ, coagulation disorders, multiple myeloma, myelodysplastic syndrome and myelofibrosis, leukemia, head and neck cancer, other cancers (connective tissue, skin, and others), metastatic cancer, and sickle cell anemia within one year of their patient at risk time. Since these comorbidities are associated with higher risk of transfusion and require different anemia management practices that the measure is not intended to address, every patient's risk window is modified to have at least 1 year free of claims that contain diagnoses on the exclusion list. We performed multivariate logistic regression demonstrating that a 1-year look back period for the above mentioned comorbidities was more predictive of transfusion events compared to longer look back periods.. The figure found in the appendix describes the inclusion and exclusion period of a hypothetical patient. In the figure included in the appendix, a hypothetical patient has patient years at risk at a facility from 1/1/2008 to 12/31/2011. Review of Medicare claims identified presence of one or more exclusion comorbidities (see above and Appendix) in 2007 (Claim1), 2008 (Claim2) and 2010 (Claim3). Each claim is followed by a one year exclusion period. The revised inclusion periods are defined as risk windows with at least a 1 year claim-free period (Inclusion1 and Inclusion2 in Figure1). The

	2699 Anemia of chronic kidney disease: Dialysis facility standardized transfusion ratio (STrR)
	patient has two transfusion events, marked as T1 and T2 in late 2008 and late 2011 respectively. However, since T1 falls in the exclusion period, it will not be counted towards the facility's transfusion count as presence of exclusion comorbidity claims within a year might have increased the risk of transfusion unrelated to dialysis facility anemia management practice. However, T2, which occurs in late 2011 and in Inclusion2 period, will be counted since there is at least a year gap between this transfusion event and the last claim observed.
Risk Adjustment	Statistical risk model The denominator of the "STrR" uses expected transfusions calculated from a Cox model (Cox, 1972) as extended to handle repeated events (Lawless and Nadeau, 1995; Lin et al., 2000; Kalbfleisch and Prentice, 2002). For computational purposes, we adopt a mod Provided in response box S.15a
Stratification	N/A
Type Score	Ratio better quality = lower score
Algorithm	Numerator is the observed number of transfusion events for a facility and denominator for the same facility is the expected number of transfusion events adjusted for patient mix. The measure for a given facility is calculated by dividing the numerator by the denominator. Available in attached appendix at A.1
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:

	2700 Ultrafiltration rate greater than 13 ml/kg/hr
Steward	Centers for Medicare and Medicaid Services
Description	Percentage of patients months for patients an ultrafiltration rate greater than 13 ml/kg/hr.
Type	Outcome
Data Source	Electronic Clinical Data CROWNWeb No data collection instrument provided
Level	Facility
Setting	Dialysis Facility
Numerator Statement	Number of patient months for adult ESRD patients at a dialysis facility with an ultrafiltration rate greater than 13 ml/kg/hr.
Numerator Details	Ultrafiltration rate is calculated for a single session per month (CROWNWeb records data from the last session) using data elements for pre-dialysis weight, post-dialysis weight, and delivered minutes of dialysis. The formula for UFR is: UFR = [(((delta wt kg)*1000)/(delivered time/60))/post wt kg] If the monthly ultrafiltration rate exceeds 13 ml/kg/hr then a patient is counted in the numerator.
Denominator Statement	Total number of patient months for adult patients reported at a dialysis facility undergoing hemodialysis (HD).
Denominator Details	All adult (=18 years old) hemodialysis patients with ESRD >= 3 months and who are assigned to the same provider for at least the full reporting month who have non-missing values for data elements necessary for calculating UFR (pre and post dialysis weight and delivered time per session) during the reporting period.
Exclusions	Exclusions that are implicit in the denominator definition include 1) pediatric patients 2) PD patients, 3) patients new to ESRD (less than 90 days on chronic dialysis) and 4) patients that have not been with the same facility for the entire reporting month (transient patients). There are no additional exclusions for this measure.
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion better quality = lower score
Algorithm	1. Using CROWNWeb-reported data (data stored as SAS files), identify all adult HD patients under the care of a facility during the reporting month. 2. From this group, remove patients who were not in the facility for the entire reporting month and patients who have not been on chronic dialysis for at least 90 days. 3. To form the numerator, remove all denominator-eligible patients who do not have required elements to calculate ultrafiltration rate including pre dialysis weight (kg), post dialysis weight (kg), and delivered time on hemodialysis (mins). 4. Calculate the facility´s rate of UFR>13 by dividing the number calculated in Step 3 (the numerator) by the number calculated in Step 2 (the denominator). No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact:

	2700 Ultrafiltration rate greater than 13 ml/kg/hr
	5b.1 If competing, why superior or rationale for additive value: We are currently discussing the differences between our UFR measures with KCQA. The primary differences identified are the treatment time exclusion criterion, the transient patient exclusion criterion, and the use of an average of 3 treatments/week (compared to the last treatment of the month).

	2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)
Steward	Kidney Care Quality Alliance (KCQA)
Description	Percentage of adult in-center hemodialysis patients in the facility whose average ultrafiltration rate (UFR) is >/= 13 ml/kg/hour.
Type	Process
Data Source	Electronic Clinical Data CROWNWeb Electronic Data Interchange, available at URL: http://www.projectcrownweb.org/crown/index.php. No data dictionary
Level	Facility
Setting	Other Dialysis facility
Numerator Statement	Number of patients* from the denominator whose average UFR >13 ml/kg/hour who receive an average of <240 minutes per treatment during the calculation period.** *To address the fact that patients may contribute varying amounts of time to the annual denomi
Numerator Details	Numerator Data Elements For all patients meeting the denominator criteria in the reporting month, collect the following data elements for all dialysis sessions (including supplemental sessions) falling within the same week that the monthly Kt/V is drawn:* • Pre-Dialysis Weight for Session (CROWNWeb RQMT_1532) • Post-Dialysis Weight for Session (RQMT_1323) • Time Delivered Per Session, in Minutes (RQMT_1358) • Session Date • Sessions Per Week (RQMT_1357) * 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). Numerator Case Identification For each facility, for all dialysis sessions falling within the calculation period for all patients meeting the denominator criteria: 1. Calculate the UFR (in ml/kg/hour) for each dialysis session (including supplemental sessions): Session X UFR = ([{Session X Pre-Dialysis Weight in kg – Session X Post-Dialysis Weight in kg} x 1000 ml/kg] ÷ Session X Post-Dialysis Weight in kg) ÷ (Session X Delivered Treatment Time in minutes) x 60 minutes/hour 2. Calculate each patient's average UFR for all dialysis sessions (including supplemental sessions) during the calculation period: Average UFR = (UFR1 + UFR2 + …. + UFRX) ÷ X Treatments 3. Calculate each patient's average treatment time over all dialysis sessions (including supplemental sessions) during the calculation period: Average Treatment Time (in minutes) = (Time1 + Time 2 + … + TimeX) ÷ X Treatments 4. Identify all patients with <4 dialysis sessions during the calculation period. 5. For each facility, include in the numerator all patients with: • an average UFR during the calculation period (Step 2 value) >/= 13 ml/kg/hour; AND • an average treatment time during the calculation period (Step 3 value) <240 minutes.
Denominator Statement	Number of adult in-center hemodialysis patients in an outpatient dialysis facility undergoing chronic maintenance hemodialysis during the calculation period.

	2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)
Denominator Details	Identify all patients in the dialysis facility during the reporting period whose: • Primary Type Treatment/Modality (CROWNWeb RQMT_1252 and/or _1356) = Hemodialysis. • Primary/Current Dialysis Setting (RQMT_791, _1355, and/or _1414) = In-center. • Date of Birth (RQMT_1310) = >18 years prior to treatment date.
Exclusions	The following patients are excluded from the denominator population: 1. Patients <18 years of age (implicit in denominator definition). 2. Home dialysis patients (implicit in denominator definition). 3. Patients in a facility <30 days. 4. Patients with >4 hemodialysis treatments during the calculation period. 5. Patients with <7 hemodialysis treatments in the facility during the reporting month. 6. Patients without a completed CMS Medical Evidence Form (Form CMS-2728) in the reporting month. 7. Kidney transplant recipients with a functioning graft. 8. Facilities treating </=25 adult in-center hemodialysis patients during the reporting month.
Exclusion details	For all patients meeting the denominator criteria in the reporting month, identify all patients meeting any of the following exclusion criteria during the calculation period and remove from the denominator population: 1. Date of Birth (RQMT_1310) = <18 years prior to treatment date (implicit in denominator definition). 2. Primary Type Treatment/Modality (CROWNWeb RQMT_1252 and/or _1356) = Peritoneal dialysis or home hemodialysis (implicit in denominator definition). 3. Date Patient Started Chronic Dialysis at Current Facility (RQMT_1360) = >30 days prior to treatment date. 4. Sessions Per Week (RQMT_1357) = >4 5. Transient Status (RQMT_356) = Not transient OR patients with <7 hemodialysis treatments in the facility during the reporting month. 6. Patients without a completed CMS Medical Evidence Form (Form CMS-2728) in the reporting month. 7. Kidney transplant recipients with a functioning graft Note: Facilities treating </=25 adult in-center hemodialysis patients during the reporting month are also excluded.
Risk Adjustment	No risk adjustment or risk stratification Not applicable.
Stratification	Not applicable.
Type Score	Rate/proportion better quality = lower score
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

	2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)
	* 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. Sessions Per Week (RQMT_1357) = >4. d. Patients without a completed CMS Medical Evidence Form (Form CMS-2728) in the reporting month. e. 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. Pre-Dialysis Weight for Session (CROWNWeb RQMT_1532) b. Post-Dialysis Weight for Session (RQMT_1323) c. Session Date d. Time Delivered Per Session, in Minutes (RQMT_1358) e. Sessions Per Week (RQMT_1357) 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 UFR (in ml/kg/hour) for each dialysis session (including supplemental sessions): Session X UFR = ([{Session X Pre-Dialysis Weight in kg – Session X Post-Dialysis Weight in kg} x 1000 ml/kg] ÷ Session X Post-Dialysis Weight in kg) ÷ (Session X Delivered Treatment Time in minutes) x 60 minutes/hour b. Calculate each patient's average UFR for all dialysis sessions (including supplemental sessions) during the calculation period: Average UFR = (UFR1 + UFR2 + …. + UFRX) ÷ X Treatments c. Calculate each patient's average treatment time over all dialysis sessions (including supplemental sessions) during the calculation period: Average Treatment Time (in minutes) = (Time1 + Time 2 + … + TimeX) ÷ X Treatments d. For each facility, include in the numerator all patients with: i. an average UFR during the calculation period (4.b. value) >/= 13 ml/kg/hour; AND ii. an average treatment time during the calculation period (4.c. value) <240 minutes. 5. Calculate the facility's Month 1 performance score: Month 1 Performance Score = Month 1 Numerator Population ÷ Month 1 Denominator Population

	2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)
	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 Available in attached appendix at A.1
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: Identified differences between the KCQA and CMS UFR measrues include the following: 1. KCQA defines the UFR parameter as >/= 13, while CMS defines it as > 13. 2. The KCQA measure contains a length of session component, while the CMS measure does not. 3. The KCQA measure takes the average of the UFR over the sessions occurring in the week that the Kt/V is drawn; the CMS measure relies on data from a single dialysis session. 5b.1 If competing, why superior or rationale for additive value: Again, identified differences between the KCQA and CMS UFR measures and the rationale for those differences are summarized below: 1. The KCQA UFR parameter is ">/= 13"; the CMS parameter is "> 13". This is a small issue for which there is no strong clinical data supporting one position over the other. 2. The KCQA measure contains a length of session component; the CMS measure does not. KCQA believes that this is an important component of the measure, the intent of which is to encourage longer dialysis sessions and to not create the unintended consequence of longer sessions impacting subsequent patients on the same treatment day (who may then sign-off early). 3. The KCQA measure averages the UFRs over the course of the Kt/V week; the CMS measure relies on data from a single dialysis session (the session for which data are submitted via CROWNWeb for the Kt/V measure). To avoid potential gaming when a single event is used and to create a more accurate representation of performance, the KCQA measure specifies an average rate for the three sessions—the Kt/V measure data and data from the other two sessions during that week. This three-session average also obviates potential uneven-ness in performance that could arise depending on the particular day of the week any given facility is using for the Kt/V data.

	2702 Post-Dialysis Weight Above or Below Target Weight
Steward	Kidney Care Quality Alliance (KCQA)
Description	Percentage of patients with an average post-dialysis weight >/= 1 kg above or below the prescribed target weight.
Type	Process
Data Source	Electronic Clinical Data CROWNWeb Electronic Data Interchange, available at URL: http://www.projectcrownweb.org/crown/index.php. Available at measure-specific web page URL identified in S.1 No data dictionary
Level	Facility
Setting	Other Dialysis facility
Numerator Statement	Number of patients* from the denominator with an average post-dialysis weight >/= 1 kg above or below the prescribed target weight during the calculation period.** *To address the fact that patients may contribute varying amounts of time to the annual de
Numerator Details	Numerator Data Elements For all patients meeting the denominator criteria in the reporting month, collect the following data elements for all dialysis sessions (including supplemental sessions) falling within the same week that the monthly Kt/V is drawn:* • Post-Dialysis Target Weight for Session (CROWNWeb RQMT 1052) • Post-Dialysis Weight for Session (RQMT 1323) • Session Date * 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). Numerator Case Identification For each facility, for all dialysis sessions falling within the calculation period for all patients meeting the denominator criteria: 1. Calculate the difference between the patient's post-dialysis weight and prescribed target weight for each dialysis session falling within the calculation period (including supplemental sessions): Patient's Post-Dialysis and Prescribed Target Weight Difference for Session X = Session X Post-Dialysis Weight – Session X Prescribed Target Weight 2. Take the sum of the differences calculated in Step 1: Sum of Patient's Post-Dialysis and Prescribed Target Weight Differences = Session 1 Difference + Session 2 Difference +….. + Session Y Difference 3. Divide the value obtained in Step 2 by the patient's number of sessions (including supplemental sessions) in the calculation period to find the patient's average weight difference for the calculation period: Patient's Average Post-Dialysis and Target Weight Difference = Sum of Patient's Post-Dialysis and Prescribed Target Weight Differences in Calculation Period ÷ Number of Patient's Dialysis Sessions in Calculation Period 4. For each facility, include in the numerator all patients whose average dialysis session post-dialysis and target weight difference during the calculation period (Step 3 value) was +/- >/= 1 kg.
Denominator Statement	Number of adult in-center hemodialysis patients in an outpatient dialysis facility undergoing chronic maintenance hemodialysis during the calculation period.

	2702 Post-Dialysis Weight Above or Below Target Weight
Denominator Details	Denominator Data Elements and Case Identification Identify all patients in the dialysis facility during the reporting month who meet all of the following criteria: • Primary Type Treatment/Modality (CROWNWeb RQMT_1252 and/or _1356) = Hemodialysis. • Primary/Current Dialysis Setting (RQMT_791, _1355, and/or _1414) = In-center. • Date of Birth (RQMT_1310) = >/=18 years prior to treatment date.
Exclusions	The following patients are excluded from the denominator population: 1. Patients <18 years of age (implicit in denominator definition). 2. Home dialysis patients (implicit in denominator definition). 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) in the reporting month. 6. Kidney transplant recipients with a functioning graft. 7. Facilities treating </=25 adult in-center hemodialysis patients during the reporting month.
Exclusion details	For all patients meeting the denominator criteria in the reporting month, identify all patients meeting any of the following exclusion criteria during the calculation period and remove from the denominator population: 1. Date of Birth (RQMT_1310) = <18 years prior to treatment date (implicit in denominator definition). 2. Primary Type Treatment/Modality (CROWNWeb RQMT_1252 and/or _1356) = Peritoneal dialysis or home hemodialysis (implicit in denominator definition). 3. Date Patient Started Chronic Dialysis at Current Facility (RQMT_1360) = >30 days prior to treatment date. 4. Transient Status (RQMT_356) = Not transient OR patients with <7 hemodialysis treatments in the facility during the reporting month. 5. Patients without a completed CMS Medical Evidence Form (Form CMS-2728) in the reporting month. 6. Kidney transplant recipients with a functioning graft Note: Facilities treating </=25 adult in-center hemodialysis patients during the reporting month are also excluded.
Risk Adjustment	No risk adjustment or risk stratification Not applicable.
Stratification	Not applicable.
Type Score	Rate/proportion better quality = lower score
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 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.

	2702 Post-Dialysis Weight Above or Below Target Weight
	* 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 calculation period: 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 Available in attached appendix at A.1
Copyright /	5.1 Identified measures:

	2702 Post-Dialysis Weight Above or Below Target Weight
Disclaimer	5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: Not applicable; no currently endorsed NQF measures addressing post-dialysis and target weight discrepancies. 5b.1 If competing, why superior or rationale for additive value: Not applicable; no currently endorsed NQF measures addressing post-dialysis and target weight discrepancies.

	2703 Minimum Delivered Hemodialysis Dose
Steward	Centers for Medicare and Medicaid Services
Description	Percentage of patient months for adult and pediatric patients whose delivered dose of hemodialysis (calculated from the last measurement of the month using the UKM or Daugirdas II formula) was spKt/V >= 1.2.
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used. No data collection instrument provided No data dictionary
Level	Facility
Setting	Dialysis Facility
Numerator Statement	Number of patient months in denominator whose delivered dose of hemodialysis (calculated from the last measurement of the month using the UKM or Daugirdas II formula) was spKt/V >= 1.2.
Numerator Details	Months with spKt/V >=1.2 are counted in the numerator. Eligible spKt/V values are those >=1.2 during the reporting month. The last spKt/V value reported, not including missing, expired, and not performed, is selected when multiple values are reported in the month. Missing, expired, and not performed are not counted as achieving the minimum spKt/V threshold.
Denominator Statement	For all patients, to be included in the denominator for a particular month the patient must be on hemodialysis for the entire month, must have had ESRD for greater than 90 days at the beginning of the month, must be dialyzing thrice weekly, and must be assigned to the facility for the entire month. In addition, pediatric patients must be dialyzing in-center.
Denominator Details	A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death, and transplant is obtained from CROWNWeb (including the CMS Medical Evidence Form (Form CMS-2728) and the Death Notification Form (Form CMS-2746)) and Medicare claims, as well as the Organ Procurement and Transplant Network (OPTN) and the Social Security Death Master File. For all patients, to be included in the denominator for a particular month the patient must be on hemodialysis for the entire month, must have had ESRD for greater than 90 days at the beginning of the month, must be dialyzing thrice weekly, and must be assigned to the facility for the entire month. In addition, pediatric patients must be dialyzing in-center.
Exclusions	Exclusions that are implicit in the denominator definition include 1) Peritoneal dialysis patients 2) Patients not on thrice weekly dialysis 3) Patients who have had ESRD for <91 days 4) Pediatric home hemodialysis patients 5) Patients not assigned to the facility for the entire month There are no additional exclusions for this measure.

	2703 Minimum Delivered Hemodialysis Dose
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion better quality = higher score
Algorithm	Denominator: For the reporting month, patients are included in the denominator if: Patient modality is indicated as hemodialysis during the entire month Patient has had ESRD for greater than 90 days at the beginning of the month Patient is receiving dialysis thrice weekly during the month Patient is treated in-center or home (adult, >=18); Patient is treated in-center (pediatric, <18) Patient has been assigned to the facility for the entire month Numerator: For the reporting month, patients from the denominator are also included in the numerator if they have a spKt/V >= 1.2 (using either Daugirdas II or UKM). The last spKt/V value reported, not including missing, expired, and not performed, is selected when multiple values are reported in the month. No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 0249 : Delivered Dose of Hemodialysis Above Minimum 0323 : Adult Kidney Disease: Hemodialysis Adequacy: Solute 1423 : Minimum spKt/V for Pediatric Hemodialysis Patients 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: This measure is completely harmonized with the individual hemodialysis measures (#0249, #1423). They all have the corresponding targets (numerator) and corresponding denominator populations. The measure is not harmonized with 0323. Missing values are not counted in the numerator, in order to prevent gaming of the measure. 5b.1 If competing, why superior or rationale for additive value:

	2704 Minimum Delivered Peritoneal Dialysis Dose
Steward	Centers for Medicare and Medicaid Services
Description	Percentage of patient months for adult and pediatric patients whose delivered peritoneal dialysis dose was a weekly Kt/Vurea (dialytic + residual) >= 1.7 (adult, >=18) or >= 1.8 (pediatric, <18).
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used. No data collection instrument provided No data dictionary
Level	Facility
Setting	Dialysis Facility
Numerator Statement	Number of patient months in the denominator whose delivered peritoneal dialysis dose was a weekly Kt/Vurea (dialytic + residual) >= 1.7 (adult, >=18, measured in the past 4 months) or >= 1.8 (pediatric, <18, measured in the past 6 months).
Numerator Details	Reporting months with weekly Kt/Vurea (dialytic + residual) >= 1.7 (adult, >=18) or >= 1.8 (pediatric, <18) are counted in the numerator. For adult patients, if no weekly Kt/Vurea value is reported for a given patient in the reporting month, the most recent peritoneal dialysis weekly Kt/Vurea value in the prior 3 months is applied to the calculation for that month. For pediatric patients, if no weekly Kt/Vurea value is reported for a given patient in the reporting month, the most recent peritoneal dialysis weekly Kt/Vurea value in the prior 5 months is applied to the calculation for that month. Missing, expired, and not performed are not counted as achieving the minimum weekly Kt/Vurea threshold.
Denominator Statement	To be included in the denominator for a particular month, the patient must be on peritoneal dialysis for the entire month, have had ESRD for greater than 90 days at the beginning of the month, and must be assigned to the facility for the entire month.
Denominator Details	A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death, and transplant is obtained from CROWNWeb (including the CMS Medical Evidence Form (Form CMS-2728) and the Death Notification Form (Form CMS-2746)) and Medicare claims, as well as the Organ Procurement and Transplant Network (OPTN) and the Social Security Death Master File. To be included in the denominator for a particular reporting month, the patient must be on peritoneal dialysis for the entire month, have had ESRD for greater than 90 days at the beginning of the month, and must be assigned to the facility for the entire month.
Exclusions	Exclusions that are implicit in the denominator definition include 1) Patients not on peritoneal dialysis for the entire month 2) Patients who have had ESRD for <91 days 3) Patients not assigned to the facility for the entire month There are no additional exclusions for this measure.
Exclusion details	N/A

	2704 Minimum Delivered Peritoneal Dialysis Dose
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion better quality = higher score
Algorithm	Denominator: For the reporting month, patients are included in the denominator if: Patient modality is indicated as peritoneal dialysis during the entire month Patient has had ESRD for greater than 90 days at the beginning of the month Patient has been assigned to the facility for the entire month Numerator: For the reporting month, Adult patients (>=18 years) from the denominator are included in the numerator if they have a weekly Kt/Vurea (dialytic + residual) >= 1.7 Pediatric patients (<18 years) from the denominator are also included in the numerator if they have a weekly Kt/Vurea (dialytic + residual) >= 1.8 For adult patients, if no weekly Kt/Vurea value is reported for a given patient in the reporting month, the most recent peritoneal dialysis weekly Kt/Vurea value in the prior 3 months is applied to the calculation for that month. For pediatric patients, if no weekly Kt/Vurea value is reported for a given patient in the reporting month, the most recent peritoneal dialysis weekly Kt/Vurea value in the prior 5 months is applied to the calculation for that month. No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 0321 : Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute 0318 : Delivered Dose of Peritoneal Dialysis Above Minimum 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: Yes, the measure is harmonized with 0318 and the pediatric PD Kt/V measures. They all have the corresponding Kt/V thresholds (numerator) and corresponding denominator populations. In the last maintenance cycle in 2011, 0318 was harmonized with 0321. Since then 0318 has been revised. This measure is not harmonized with 0321, because missing values are not counted in the numerator, in order to prevent gaming of the measure. 5b.1 If competing, why superior or rationale for additive value: It is anticipated that this proposed measure will allow for assessment of a larger population given that it applies to both adult and pediatric PD patients. Missing values are not counted in the numerator, in order to prevent gaming of the measure.

	2705 Delivered Dose of Dialysis Above Minimum
Steward	Centers for Medicare and Medicaid Services
Description	Percentage of patient months for adult (>=18) and pediatric (<18) patients in which the delivered dose of dialysis (either hemodialysis or peritoneal dialysis) met the specified target during the reporting period.
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used No data collection instrument provided
Level	Facility
Setting	Dialysis Facility
Numerator Statement	Number of patient months from the denominator in which the delivered dose of dialysis met the specified target. The targets are as follows: Hemodialysis (adult and pediatric): spKt/V >= 1.2 (calculated from the last measurement of the month using UKM or
Numerator Details	Months where the Kt/V value met the specified target are counted in the numerator. Eligible Kt/V values are: Hemodialysis (adult and pediatric): spKt/V>=1.2 Adult peritoneal dialysis patients: weekly Kt/Vurea >=1.7 (dialytic + residual) Pediatric peritoneal dialysis patients: weekly Kt/Vurea >=1.8 (dialytic + residual) For adult and pediatric hemodialysis patients, the last spKt/V value reported, not including missing, expired, and not performed, is selected when multiple values are reported in the month. For adult peritoneal dialysis patients, if no weekly Kt/Vurea value is reported for a given patient in a reporting month, the most recent peritoneal dialysis weekly Kt/Vurea value in the prior 3 months is applied to the calculation for that reporting month. For pediatric peritoneal dialysis patients, if no weekly Kt/Vurea value is reported for a given patient in a reporting month, the most recent peritoneal dialysis weekly Kt/Vurea value in the prior 5 months is applied to the calculation for that reporting month. Missing, expired, and not performed are not counted as achieving the minimum Kt/V threshold.
Denominator Statement	To be included in the denominator for a particular month, patients need to meet the following requirements: 1) Hemodialysis patients: Patients must be on hemodialysis for the entire month, must have had ESRD for greater than 90 days at the beginning of the month, must be dialyzing thrice weekly, and must be assigned to the facility for the entire month. In addition, pediatric patients must be dialyzing in-center. 2) Peritoneal dialysis patients: Patients must be on peritoneal dialysis for the entire month, and have had ESRD for greater than 90 days at the beginning of the month. In addition, patients must be assigned to the facility for the entire month.
Denominator Details	A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an

	2705 Delivered Dose of Dialysis Above Minimum
	additional source. Information regarding first ESRD service date, death, and transplant is obtained from CROWNWeb (including the CMS Medical Evidence Form (Form CMS-2728) and the Death Notification Form (Form CMS-2746)) and Medicare claims, as well as the Organ Procurement and Transplant Network (OPTN) and the Social Security Death Master File. To be included in the denominator for a particular month, patients need to meet the following requirements: 1) Hemodialysis patients: Patients must be on hemodialysis for the entire month, must have had ESRD for greater than 90 days at the beginning of the month, must be dialyzing thrice weekly, and must be assigned to the facility for the entire month. In addition, pediatric patients must be dialyzing in-center. 2) Peritoneal dialysis patients: Patients must be on peritoneal dialysis for the entire month, and have had ESRD for greater than 90 days at the beginning of the month. In addition, patients must be assigned to the facility for the entire month.
Exclusions	Exclusions that are implicit in the denominator definition include 1) Adult and pediatric hemodialysis patients not on thrice weekly dialysis 2) Pediatric home hemodialysis patients 3) All patients who have had ESRD for <91 days at the beginning of the month 4) All patients who were not assigned to the facility for the entire month There are no other exclusions for this measure.
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion better quality = higher score
Algorithm	Patient months included in the denominator: Adult hemodialysis: • Patient modality is indicated as hemodialysis during the entire month (in-center or home) • Patient is on thrice weekly dialysis during the month • Patient age as of the beginning of the reporting month is at least 18 years • Patient has had ESRD for greater than 90 days at the beginning of the month • Patient has been ssigned to the facility for the entire month Pediatric hemodialysis: • Patient modality is indicated as hemodialysis during the entire month (in-center) • Patient is on thrice weekly dialysis during the month • Patient age as of the beginning of the reporting month is less than 18 years • Patient has had ESRD for greater than 90 days at the beginning of the month • Patient has been assigned to the facility for the entire month Adult peritoneal dialysis: • Patient modality is indicated as peritoneal dialysis during the entire month • Patient age as of the beginning of the reporting month is at least 18 years • Patient has had ESRD for greater than 90 days at the beginning of the month • Patient has been assigned to the facility for the entire month Pediatric peritoneal dialysis: • Patient modality is indicated as peritoneal dialysis during the entire month • Patient age as of the beginning of the reporting month is less than 18 years

	2705 Delivered Dose of Dialysis Above Minimum
	• Patient has had ESRD for greater than 90 days at the beginning of the month • Patient has been assigned to the facility for the entire month Numerator: For the reporting month, patient months from the denominator are also included in the numerator if they meet the following criteria: Adult and pediatric hemodialysis patients: spKt/V >= 1.2 (using either Daugirdas II or UKM). Adult peritoneal patients: weekly Kt/vurea >= 1.7 (dialytic + residual, calculated within the past 4 months) For adult peritoneal dialysis patients, if no weekly Kt/Vurea value is reported for a given patient in a reporting month, the most recent peritoneal dialysis weekly Kt/Vurea value in the prior 3 months is applied to the calculation for that reporting month. Pediatric peritoneal dialysis patients: weekly Kt/vurea>= 1.8 (dialytic + residual, calculated within the past 6 months) For pediatric peritoneal dialysis patients, if no weekly Kt/Vurea value is reported for a given patient in a reporting month, the most recent peritoneal dialysis weekly Kt/Vurea value in the prior 5 months is applied to the calculation for that reporting month. For all patients, the last Kt/V value reported, not including missing, expired, and not performed, is selected when multiple values are reported in the month. No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 0249 : Delivered Dose of Hemodialysis Above Minimum 0321 : Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute 0318 : Delivered Dose of Peritoneal Dialysis Above Minimum 0323 : Adult Kidney Disease: Hemodialysis Adequacy: Solute 1423 : Minimum sp 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: Yes, the measure is harmonized with 0249, 0318, 1423, and the pediatric PD Kt/V measures. They all have the corresponding thresholds (numerator) and corresponding denominator populations. In the last maintenance cycle in 2011, 0318 was harmonized with 0321. Since then 0318 has been revised. The measure is not harmonized with 0321 and 0323 as this proposed measure does not count missing values in the numerator, in order to prevent gaming of the measure. 5b.1 If competing, why superior or rationale for additive value: It is anticipated that this proposed measure will allow for assessment of a larger population given that it applies to both adult and pediatric patients, and both HD and PD modality. Missing values are not counted in the numerator, in order to prevent gaming of the measure.

	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V
Steward	Centers for Medicare and Medicaid Services
Description	Percent of pediatric (< 18) peritoneal dialysis patient-months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea >= 1.8 (dialytic + residual)
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used No data collection instrument provided No data dictionary
Level	Facility
Setting	Dialysis Facility
Numerator Statement	Number of patient months in the denominator in which delivered peritoneal dialysis dose was a weekly Kt/Vurea >= 1.8 (dialytic + residual, measured in the last 6 months)
Numerator Details	Reporting months with weekly Kt/Vurea >=1.8 (dialytic + residual) are counted in the numerator. If no weekly Kt/Vurea value is reported for a given patient in the reporting month, the most recent peritoneal dialysis weekly Kt/Vurea value in the prior 5 months is applied to the calculation for that month. Missing, expired, and not performed are not counted as achieving the minimum weekly Kt/Vurea threshold. If RRF is to be incorporated in the Kt/V calculation, this will be calculated using the urea clearance derived from 24 hour urine collection. Total body water (V) should be estimated by one of the following pediatric specific V approximation methods: o Prediction equation based upon heavy water dilution Males: TBW=0.10 (ht x wt)0.68 – 0.37 (wt) Females: TBW=0.14 (ht x wt) 0.64 – 0.35 (wt) o Simplified V estimating equations derived from the above prediction equations: Males: TBW=20.88 x BSA – 4.29 Females: TBW=16.92 x BSA – 1.81 o Sex specific normograms derived from the above prediction equations and published in KDOQI PD guidelines for the pediatric population update from 2006.
Denominator Statement	To be included in the denominator for a particular reporting month, the patient must be on peritoneal dialysis for the entire month, be < 18 years old at the beginning of the month, must have had ESRD for greater than 90 days at the beginning of the month, and must be assigned to that facility for the entire month.
Denominator Details	A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death, and transplant is obtained from CROWNWeb (including the CMS Medical Evidence Form (Form CMS-2728) and the Death Notification Form (Form CMS-2746)) and Medicare claims, as well as the Organ Procurement and Transplant Network (OPTN) and the Social Security Death Master File. To be included in the denominator for a particular reporting month the patient must be on peritoneal dialysis and assigned to that facility for the entire month, have had ESRD for greater than 90 days on the first day of the month, and be <18 years old at the beginning of the

	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V
	month.
Exclusions	Exclusions that are implicit in the denominator definition include 1) Patients not on peritoneal dialysis for the entire month 2) Adult patients (>=18 years old) 3) All patients who have had ESRD for <91 days, and 4) Patients not assigned to the facility for the entire month There are no additional exclusions for this measure.
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion better quality = higher score
Algorithm	Denominator: For the reporting month, patients are included in the denominator if: Patient modality is indicated as peritoneal dialysis during the entire month Patient age as of the beginning of the reporting month is less than 18 years Patient has had ESRD for greater than 90 days at the beginning of the month Patient has been assigned to the facility for the entire month Numerator: For the reporting month, patients from the denominator are also included in the numerator if they have a weekly Kt/Vurea >= 1.8. If no weekly Kt/Vurea value is reported for a given patient in a month, the most recent peritoneal dialysis weekly Kt/Vurea value in the prior 5 months is applied to the calculation for that month. No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:

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	0249 Delivered Dose of Hemodialysis Above Minimum
Steward	Centers for Medicare & Medicaid Services
Description	Percentage of all patient months for adult patients (>= 18years old) whose average delivered dose of hemodialysis (calculated from the last measurements of the month using the UKM or Daugirdas II formula) was between spKt/V >= 1.2 and spKt/V =< 5.0.
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used. No data collection instrument provided URL
Level	Facility
Setting	Dialysis Facility
Time Window	The entire calendar month.
Numerator Statement	Number of patient months in denominator whose delivered dose of hemodialysis (calculated from the last measurement of the month (using the UKM or Daugirdas II formula) was between a spKt/V >= 1.2 and spKt/V =<5.0.
Numerator Details	Eligible Kt/V values counted in the numerator are those in the range from spKt/V >= 1.2 to spKt/V =<5.0 during the reporting month. Values that will not be counted in the numerator are: Out of range spKt/V of <1.2 or spKt/V> 5.0); missing (no spKt/V reported).
Denominator Statement	To be included in the denominator for a particular month, the patient must be >= 18 years old, must have had ESRD for greater than 90 days, must be dialyzing thrice weekly during the month, and must be assigned to that facility for the entire month.
Denominator Details	A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. SIMS/CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death and transplant is obtained from additional sources including the CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746) and the Social Security Death Master File. The denominator is defined as counting the patient months of HD patients who received dialysis greater than two and less than four times a week, did not indicate frequent dialysis, and have had ESRD for greater than 90 days, and assigned to that facility for the entire month.
Exclusions	Exclusions that are implicit in the denominator definition include 1) pediatric patients (<18 years old) 2) those patients receiving dialysis less than 3 times weekly 3) all patients who have had ESRD for <91 days, and 4) patients at the facility for less than one month. There are no additional exclusions for this measure.
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A

	0249 Delivered Dose of Hemodialysis Above Minimum
Stratification	N/A
Type Score	Rate/proportion – better quality = higher score
Algorithm	Denominator: For the reporting month, patients are included in the denominator if: • Patient modality is indicated as HD • Patient age as of the reporting month is at least 18 years • Patient has had ESRD for greater than 90 days • Assigned to the facility for the entire month • Patient is not on frequent dialysis Numerator: For the reporting month, patients are included in the numerator if • The last spKt/V for the month is between spKt/V> 1.2 and spKt/V< 5.0 (using either Daugirdas II or UKM).
Copyright / Disclaimer	5.1 Identified measures: 0323 : Adult Kidney Disease: Hemodialysis Adequacy: Solute 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: During the previous NQF review, the hemodialysis measures (#0249, #0323) were harmonized on the evidence regarding method of measuring adequacy and threshold values. One remaining difference was thought to not pose any substantial impact: the physician measure denominator is patient months rather than patients as in the facility measure. Since then we revised the numerator and denominator for 0249. It assesses achievement within a range of threshold values for adequate dialysis (see numerator and denominator descriptions). Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure. 5b.1 If competing, why superior or rationale for additive value: It is anticipated that this proposed measure will allow for assessment of a larger given the new denominator definition. Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure.

	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
Steward	Kidney Care Quality Alliance (KCQA)
Description	Percentage of end stage renal disease (ESRD) patients aged 18 years and older receiving hemodialysis during the 12-month reporting period and on dialysis >90 days who: 1. have a functional autogenous AVF (defined as two needles used or a single-needle d
Type	Process
Data Source	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records Data elements for the measure can be collected via the CROWNWeb Electronic Data Interchange, available at URL: http://www.projectcrownweb.org/crown/index.php. No data collection instrument provided - Attachment KCQA0251_DataDictionary02-26-15.pdf
Level	Clinician : Individual
Setting	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility
Time Window	12 months.
Numerator Statement	Number of patients from the denominator who: 1. have a functional autogenous AVF (defined as two needles used or a single-needle device) (computed and reported separately); or 2. have a functional AV graft (computed and reported separately); or 3. have a catheter but have been seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for a functional autogenous AVF (defined as two needles used or a single needle device) or AV graft at least once during the 12-month reporting period (computed and reported separately). Reporting should be stratified by incident versus prevalent patients, as defined by USRDS.
Numerator Details	Include in the numerator all patients from the denominator who meet the following criteria: 1. Access type = Functional autogenous AVF (defined as 2 needles used or single-needle device) (NOTE: 1 needle used in a 2-needle device is NOT acceptable) OR 2. Access type = • Functional AV graft OR • AVF combined with AV graft OR • Catheter (alone or combined with an AVF or AV graft) AND a. Patient seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for an AVF or AV graft during the 12-month reporting period AND b. Facility medical records contain the following types of documentation of the surgical evaluation: • A note or letter prepared by the primary nephrologist OR • A note or letter prepared by the vascular surgeon, other qualified surgeon, or interventional nephrologist trained in the primary placement of vascular access OR • A note prepared by facility personnel AND

	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
	• Date of the surgical evaluation: (MM/YYYY) AND • If permanent access was not placed, the reason for this decision.
Denominator Statement	All ESRD patients aged 18 years and older receiving hemodialysis during the 12-month reporting period and on dialysis for greater than 90 days. This measure includes both in-center and home hemodialysis patients.
Denominator Details	Include in the denominator all patients for a given nephrologist who meet the following criteria in the most recent month of the 12-month study period and who are not enrolled in hospice: 1. Diagnosis = ESRD AND 2. Primary type of dialysis = hemodialysis or home hemodialysis AND 3. Age = >/= 18 years AND 4. Time on dialysis = >90 days
Exclusions	None.
Exclusion details	Not applicable.
Risk Adjustment	No risk adjustment or risk stratification Not applicable.
Stratification	Not applicable.
Type Score	Rate/proportion – better quality = higher score
Algorithm	The measure score is calculated by dividing the total number of patients included in the numerator by the total number of patients included in the denominator. IDENTIFICATION OF DENOMINATOR CASES To identify patients in the denominator, first calculate the following: • Patient age = (Date of first day of most recent month of study period) – (Patient's Date of Birth) • Patient time on dialysis = (Date of first day of most recent month of study period) – (Patient's Date Regular Chronic Dialysis Began) Include in the denominator all patients for a given nephrologist who meet the following criteria in the most recent month of the 12-month study period and who are not enrolled in hospice: 1. Diagnosis = ESRD AND 2. Primary type of dialysis = hemodialysis or home hemodialysis AND 3. Age = >/=18 years AND 4. Time on dialysis = >90 days IDENTIFICATION OF NUMERATOR CASES Include in the numerator all patients from the denominator who meet the following criteria:

	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
	1. Access type = Functional autogenous AVF (defined as 2 needles used or single-needle device) (NOTE: 1 needle used in a 2-needle device is NOT acceptable) OR 1. Access type = Functional AV graft OR 1. Access type = AVF combined with AV graft OR 1. Access type (select one): • AV fistula with a catheter • AV graft combined with a catheter • Catheter • Other/unknown AND 2. Patient referred to a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for an AVF or AV graft during the 12-month reporting period AND 3. Patient seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for an AVF or AV graft during the 12-month reporting period AND 4. Facility medical records contain the following types of documentation of the surgical evaluation: • A note or letter prepared by the primary nephrologist OR • A note or letter prepared by the vascular surgeon, other qualified surgeon, or interventional nephrologist trained in the primary placement of vascular access OR • A note prepared by facility personnel AND • Date of the surgical evaluation: (MM/YYYY) AND • If permanent access was not placed, the reason for this decision MEASURE SCORE CALCULATION Performance Rate = ([Patients with a functional AVF] + [Patients with a functional AV graft] + [Patients with a catheter who have been seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for a functional AVF or AV graft during the 12-month reporting period WITH documentation of the evaluation in the facility medical records]) ÷ ([Total ESRD patients >/=18 years of age receiving HD during the 12-month reporting period and on dialysis >90 days] – Patients enrolled in hospice]) Available in attached appendix at A.1
Copyright / Disclaimer	5.1 Identified measures: 0256 : Minimizing Use of Catheters as Chronic Dialysis Access 0257 : Maximizing Placement of Arterial Venous Fistula (AVF)

	~~**0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement**~~
	~~5a.1 Are specs completely harmonized? No~~ ~~5a.2 If not completely harmonized, identify difference, rationale, impact: NQF 0256 and 0257 focus on reducing catheter use exclusively in favor of AVF use. This construct ignores and thus disincentivizes use of AV grafts, which are oftentimes the most clinically appropriate access and are selected with and in the best interest of the patient, and may ultimately have a negative clinical impact.~~ ~~5b.1 If competing, why superior or rationale for additive value: The KCQA measure acknowledges that AV grafts are frequently an appropriate clinical decision while continuing to disincentivize use of central venous catheters. Additionally, the measure is specified for use at the clinician, rather than the facility, level, as the clinical responsibility for vascular access decisionmaking lies primarily with the physician.~~

	0255 Measurement of Serum Phosphorus Concentration
Steward	Centers for Medicare & Medicaid Services
Description	Percentage of all peritoneal dialysis and hemodialysis patient months with serum or plasma phosphorus measured at least once within the month.
Type	Process
Data Source	Electronic Clinical Data CROWNWeb No data collection instrument provided – No data dictionary
Level	Facility
Setting	Dialysis Facility
Time Window	One month
Numerator Statement	Number of dialysis patient months in the denominator with serum or plasma phosphorus measured at least once within the reporting month.
Numerator Details	The numerator comprises all eligible patient months during the 1-month study period with a non-missing value for serum or plasma phosphorus.
Denominator Statement	Number of patient-months among in-center hemodialysis, home hemodialysis, or peritoneal dialysis patients under the care of the dialysis facility for the entire reporting month
Denominator Details	The denominator comprises all patient months for patients during the 1-month study period, where patients have an "Admit Date" prior or equal to the first day of the month; whose "Discharge Date" is blank or greater than or equal to the last day of the month; whose "Primary Type of Treatment" = ´Hemodialysis,´ ´CAPD´ or ´CCPD´ on the last day of the study period; and whose "Primary Dialysis Setting" = ´Dialysis Facility/Center´ on the last day of the Study Period
Exclusions	Exclusions that are implicit in the denominator definition include all patients who have not been in the facility the entire reporting month. There are no additional exclusions for this measure.
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion – better quality = higher score
Algorithm	1. Using CROWNWeb-reported data (data stored as SAS files), identify the number of HD and PD patients under the care of a facility. 2. From this group, remove patients who were not in the facility for the entirety of the month (i.e., transient patients). 4. To form the numerator, remove all denominator-eligible patients who do not have a serum or plasma phosphorus (variable name, "phosphorus") measurement for the study month. 5. Calculate the facility´s rate of phosphorus measurement by dividing the number calculated in Step 3 (the denominator) by the number calculated in Step 4 (the numerator).
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value: N/A

	0256 Minimizing Use of Catheters as Chronic Dialysis Access
Steward	Centers for Medicare & Medicaid Services
Description	Percentage of patient months on maintenance hemodialysis during the last HD treatment of month with a chronic catheter continuously for 90 days or longer prior to the last hemodialysis session.
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data CROWNWeb is the primary data source. However, this measure can be collected through Medicare claims data (since July 2010) and Fistula First Breakthrough Initiative data (though the definition of the measure is slightly different). The measure has been publically reported using claims data since 2013. No data collection instrument provided - No data dictionary
Level	Facility
Setting	Dialysis Facility
Time Window	One month
Numerator Statement	Number of patient months in the denominator who were continuously using a chronic catheter as hemodialysis access for 90 days or longer prior to the last hemodialysis session during the month.
Numerator Details	The numerator will be determined by counting the patient months in the denominator who were on maintenance hemodialysis with a chronic catheter continuously for 90 days or longer prior to the last hemodialysis session of the month.
Denominator Statement	Adult hemodialysis patients who have had ESRD for greater than 90 days as of of the first day of the reporting month.
Denominator Details	The patient's age will be determined by subtracting the patient's date of birth from the first day of the reporting month. 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' or 'Home' on the last day of the study period, AND "Date Regular Chronic Dialysis Began" is prior to the first day of the study period. For both CROWNWeb and Claims data, the denominator will include all hemodialysis patients who are at least 18 years old and have had ESRD for greater than 90 days as of the first day of the reporting month.
Exclusions	Exclusions that are implicit in the denominator definition include pediatric patients (<18 years old), and acute hemodialysis patients (hemodialysis patients who have had ESRD for less than 91 days). There are no additional exclusions for this measure.
Exclusion details	See above denominator details.
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion - better quality = lower score
Algorithm	For this measure calculation, the numerator will be divided by the denominator.Calculation of the numerator and denominator is described below. The denominator will include all patients at least 18 years old who are determined to be maintenance hemodialysis patients. The patient's age will be determined by subtracting the patient's date of birth from the first

	0256 Minimizing Use of Catheters as Chronic Dialysis Access
	day of the reporting month. 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' or 'Home' 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 patient months in the denominator who were on maintenance hemodialysis with a chronic catheter continuously for 90 days or longer prior to the last hemodialysis session of the month. For CROWNWeb data, the numerator is defined as "Access_Type_id" in (19,20) while "19" means Catheter only and "20" means Port access only AND "Date Access Type for Dialysis Changed" is blank or, if populated, is more than 90 days prior to the last hemodialysis session of the month. For Claims data, we use data prior to reporting period, a 90 day lookback period (e.g., October – December 2012 for January 2013 reporting period) to determine catheter history AND vascular access type should satisfy (vas_cat='Y' and art_graft=' ' and art_fistula=' ')). No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:

	0257 Maximizing Placement of Arterial Venous Fistula (AVF)
Steward	Centers for Medicare & Medicaid Services
Description	Percentage of patient months for patients on maintenance hemodialysis during the last HD treatment of month using an autogenous AV fistula with two needles.
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data This measure is primarily designed for collection in CROWNWeb but can also be calculated from Fistula First and Medicare claims data. The measure has been publically reported using Medicare claims data since 2013. No data collection instrument provided -- No data dictionary
Level	Facility
Setting	Dialysis Facility
Time Window	One month
Numerator Statement	Number of patient months in the denominator who were using an autogenous AV fistula with two needles at the last HD treatment of month
Numerator Details	The numerator will be determined by counting the patient months in the denominator who were using an AV fistula with two needles as the means of access.
Denominator Statement	For both CROWNWeb and Claims data, the denominator will include all hemodialysis patients who are at least 18 years old and have had ESRD for greater than 90 days as of the first day of the reporting month.
Denominator Details	For both CROWNWeb and Claims data, the denominator will include all hemodialysis patients who are at least 18 years old and have had ESRD for at least 90 days as of the first day of the reporting month.
Exclusions	Exclusions that are implicit in the denominator definition include pediatric patients (<18 years old) and acute hemodialysis patients (hemodialysis patients who have had ESRDS for less than 91 days). There are no additional exclusions for this measure.
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion -- better quality = higher score
Algorithm	For this measure calculation, the numerator will be divided by the denominator. Calculation of the numerator and denominator is described below. The denominator will include all patients at least 18 years old who are determined to be maintenance hemodialysis patients. The patient's age will be determined by subtracting the patient's date of birth from the first day of the reporting month. 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' or 'Home' 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 denominator will include all patients greater than or equal to 18 years old who are determined to be in-center hemodialysis, or home hemodialysis patients. The numerator will be determined by counting the patient months in the denominator who were on maintenance hemodialysis using an AV fistula with two needles as the means of

	0257 Maximizing Placement of Arterial Venous Fistula (AVF)
	access. The numerator will be determined by counting the patients in the denominator for whom "Access Type for Dialysis" – "autogenous AV fistula with two needles" at the last treatment of the month. In CROWNWeb, a patient is counted in the numerator if "Access_type_id" in (14,16) at the last treatment of the month where "14" represents AV fistula only (with 2 needles) and "16" represents AV Fistula combined with a Catheter; while in Medical Claims data, a patient is included if (vas_cat=' ' and art_graft=' ' and art_fistula='Y') OR (vas_cat='Y' and art_graft=' ' and art_fistula='Y') at the last treatment of the month. No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:

	0318 Delivered Dose of Peritoneal Dialysis Above Minimum
Steward	Centers for Medicare & Medicaid Services
Description	Percentage of all patient months for patients = 18 whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 and spKt/V =< 8.5. (dialytic + residual)
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used No data collection instrument provided -- No data dictionary
Level	Facility
Setting	Dialysis Facility
Time Window	The entire calendar month
Numerator Statement	Number of patient months in the denominator whose delivered peritoneal dialysis was a weekly Kt/Vurea of between spKt/V >= 1.7 and spKt/V =< 8.5 (dialytic + residual)
Numerator Details	Eligible Kt/V values counted in the numerator are those in the range from spKt/V >= 1.7 to spKt/V =< 8.5 (dialytic + residual) within past four months. Values that will not be counted in the numerator are: Out of range spKt/V of <1.7 or spKt/V> 8.5); missing (no spKt/V reported).
Denominator Statement	To be included in the denominator for a particular month the patient must have had ESRD for greater than 90 days, must be >=18 years old, and must be assigned to that facility for the entire month.
Denominator Details	A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. SIMS/CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death and transplant is obtained from additional sources including the CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746) and the Social Security Death Master File. The denominator is defined as counting the patient months of PD patients who have had ESRD for greater than 90 days, and assigned to that facility for the entire month.
Exclusions	Exclusions that are implicit in the denominator definition include 1) pediatric patients (<18 years old) 2) all patients who have had ESRD for <91 days, and 3) patients who have not been in the facility for the entire month. There are no additional exclusions for this measure.
Exclusion details	None.
Risk Adjustment	No risk adjustment or risk stratification N/A Provided in response box S.15a
Stratification	N/A
Type Score	Rate/proportion -- better quality = higher score

	0318 Delivered Dose of Peritoneal Dialysis Above Minimum
Algorithm	Denominator: For the reporting period, patients are included in the denominator if: Patient modality is indicated as PD Patient age as of the reporting month is at least 18 years Patient has had ESRD for greater than 90 days Patient has been assigned to the facility for the entire month Numerator: For the reporting period, patients are included in the numerator if The last spKt/V for the month is between spKt/V >= 1.7 and spKt/V =<8.5 If no Kt/V value is reported for a given patient in a month, the most recent Kt/V value in the prior 3 months is applied to the calculation for that month. No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 0321 : Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: In the last maintenance cycle in 2011, 0318 was harmonized with 0321. Since then 0318 has been revised. The measure is not harmonized with 0321 as this proposed measure assesses achievement within a range of threshold values for adequate dialysis (see numerator and denominator descriptions). Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure. 5b.1 If competing, why superior or rationale for additive value: It is anticipated that this proposed measure will allow for assessment of a larger population given the denominator revision. Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure.

	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute
Steward	Renal Physicians Association
Description	Percentage of patients aged 18 years and older with a diagnosis of End Stage Renal Disease (ESRD) receiving peritoneal dialysis who have a total Kt/V >= 1.7 per week measured once every 4 months
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry N/A Attachment AMA-PCPI_AKID-11_PeritonealAdequacy_eSPEC-635289364639799938.pdf
Level	Clinician : Group/Practice, Clinician : Individual, Clinician : Team
Setting	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary, Rest Home, or Custodial Care Services
Time Window	three times (at least 4 months apart) during the 12 consecutive month measurement period
Numerator Statement	Patients who have a total Kt/V >= 1.7 per week measured once every 4 months
Numerator Details	Numerator Definition: Total Kt/V includes residual kidney function and equals peritoneal dialysate Kt/V plus renal Kt/V During the NQF Maintenance Process, an EHR specification was provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: Report the quality data code designated for this numerator: G8718 - Total Kt/V greater than or equal to 1.7 per week (Total clearance of urea [Kt]/volume [V])
Denominator Statement	All patients aged 18 years and older with a diagnosis of ESRD receiving peritoneal dialysis
Denominator Details	During the NQF Maintenance Process, an EHR specification was provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: Patients aged >= 18 years AND Diagnosis for ESRD (ICD-9-CM) [for use 1/1/2014-9/30/2014]: 585.6 Diagnosis for ESRD (ICD-10-CM) [for use 10/01/2014-12/31/2014]: N18.6 AND Encounter for Dialysis and Dialysis Catheter Care (ICD-9-CM) [for use 1/1/2014-9/30/2014]: V56.2, V56.32, V56.8 Encounter for Dialysis and Dialysis Catheter Care (ICD-10-CM) [for use 10/01/2014-12/31/2014]: Z49.02, Z49.32 AND Patient encounter during the reporting period (CPT): 90945, 90947, 90957, 90958, 90959, 90960, 90961, 90962, 90965, 90966, 90969, 90970
Exclusions	There are no denominator exceptions for this measure.
Exclusion details	N/A
Risk Adjustment	Other No risk adjustment or risk stratification. This measure is not risk adjusted.
Stratification	We encourage the results of this measure to be stratified by race, ethnicity, administrative

	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute
	sex, and primary language.
Type Score	Rate/proportion – better quality = higher score
Algorithm	Calculation algorithm is included in field S.2b. Data Dictionary Code Table.
Copyright / Disclaimer	5.1 Identified measures: 0318 : Delivered Dose of Peritoneal Dialysis Above Minimum 5a.1 Are specs completely harmonized? Yes 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program).

	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute
Steward	Renal Physicians Association
Description	Percentage of calendar months within a 12-month period during which patients aged 18 years and older with a diagnosis of End Stage Renal Disease (ESRD) receiving hemodialysis three times a week for >= 90 days have a spKt/V >= 1.2
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry N/A Attachment AMA-PCPI_AKID-10_HDAdequacy_11.8.2011-635289365199063523.pdf
Level	Clinician : Group/Practice, Clinician : Individual, Clinician : Team
Setting	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary, Rest Home, or Custodial Care Services
Time Window	Each calendar month within 12 consecutive month measurement period
Numerator Statement	Calendar months during which patients have a spKt/V >= 1.2
Numerator Details	Note: Urea kinetic modeling (UKM) or the second generation Daugirdas formula (simplified multivariable equation) are the most appropriate ways to calculate spKt/V, and the two accepted methods for calculating spKt/V per the KDOQI guidelines. For more information on these methods, please refer to National Kidney Foundation's 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). For Administrative/Claims, report the quality data code designated for this numerator: G8713 - spKt/V greater than or equal to 1.2 (single-pool clearance of urea [Kt] / volume [V]) During the NQF Maintenance Process, an EHR specification was provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table.
Denominator Statement	All calendar months during which patients aged 18 years and older with a diagnosis of ESRD are receiving hemodialysis three times a week for >= 90 days
Denominator Details	During the NQF Maintenance Process, an EHR specification was provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: Patients aged >= 18 years old AND Diagnosis for ESRD (ICD-9-CM) [for use 1/1/2014-9/30/2014]: 585.6 Diagnosis for ESRD (ICD-10-CM) [for use 10/01/2014-12/31/2014]: N18.6 AND Encounter for Dialysis and Dialysis Catheter Care (ICD-9-CM) [for use 1/1/2014-9/30/2014]: V56.0, V56.1, V56.32 Encounter for Dialysis and Dialysis Catheter Care (ICD-10-CM) [for use 10/01/2014-12/31/2014]: Z49.01, Z49.31, Z49.32 AND Hemodialysis treatment performed exactly three times per week for >= 90 days: G8714 AND Patient encounter during the reporting period (CPT): 90957, 90958, 90959, 90960, 90961, 90962, 90965, 90966, 90969, 90970
Exclusions	There are no denominator exceptions.

	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	We encourage the results of this measure to be stratified by race, ethnicity, administrative sex, and primary language.
Type Score	Rate/proportion – better quality = higher score
Algorithm	Calculation algorithm is included in S.2b. Data Dictionary Code Table
Copyright / Disclaimer	5.1 Identified measures: 0249 : Delivered Dose of Hemodialysis Above Minimum 5a.1 Are specs completely harmonized? Yes 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program).

	~~1423 Minimum spKt/V for Pediatric Hemodialysis Patients~~
~~Steward~~	~~Centers for Medicare & Medicaid Services~~
~~Description~~	~~Percentage of patient months for all pediatric (<18 years old) in-center HD patients who have been on hemodialysis for more than 90 days and dialyzing 3 or 4 times weekly whose average delivered dose of hemodialysis using the UKM or Daugirdas II formula)~~
~~Type~~	~~Outcome~~
~~Data Source~~	~~Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used~~ ~~No data collection instrument provided~~
~~Level~~	~~Facility~~
~~Setting~~	~~Dialysis Facility~~
~~Time Window~~	~~The entire calendar month~~
~~Numerator Statement~~	~~Number of patient months for patients in the denominator whose delivered dose of hemodialysis (calculated from the last measurement of the month (using the UKM or Daugirdas II formula) was between a spKt/V >= 1.2 and spKt/V =<5.0.~~
~~Numerator Details~~	~~Eligible Kt/V values counted in the numerator are those in the range from spKt/V >= 1.2 to spKt/V =< 5.0 during the reporting month.~~ ~~Values that will not be counted in the numerator are: Out of range spKt/V of <1.2 or spKt/V> 5.0); missing (no spKt/V reported).~~
~~Denominator Statement~~	~~To be included in the denominator for particular month, a patient must have been <18 years old, have had ESRD for greater than 90 days, dialyzing 3 or 4 times weekly, and must be assigned to that facility for the entire month.~~
~~Denominator Details~~	~~A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. SIMS/CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death and transplant is obtained from additional sources including the CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746) and the Social Security Death Master File.~~ ~~The denominator is defined as counting the patient months for pediatric HD patients who received dialysis greater than two and less than five times a week, did not indicate frequent dialysis, and have been ESRD for greater than 90 days, and assigned to that facility for the entire month.~~
~~Exclusions~~	~~Exclusions that are implicit in the denominator definition include~~ ~~1) patients on home hemodialysis,~~ ~~2) patients on ESRD less than 91 days~~ ~~3) patients receiving dialysis less than 3x/week or greater than 4x/week and~~ ~~4) patients who have not been in the facility for the entire reporting month~~ ~~There are no additional exclusions for this measure.~~
~~Exclusion details~~	~~N/A~~
~~Risk Adjustment~~	~~No risk adjustment or risk stratification~~

	~~**1423 Minimum spKt/V for Pediatric Hemodialysis Patients**~~
	~~N/A~~
~~Stratification~~	~~N/A~~
~~Type Score~~	~~Rate/proportion – better quality = higher score~~
~~Algorithm~~	~~Denominator: For the reporting month, patients are included in the denominator if:~~ ~~Patient modality is indicated as HD~~ ~~Patient age as of the reporting month is less than 18 years~~ ~~Patient has had ESRD for greater than 90 days~~ ~~Patient is not on frequent dialysis (dialyzing 3 or 4 times weekly)~~ ~~Patient has been assigned to the facility for the entire month~~ ~~Numerator: For the reporting month, patients are included in the numerator if~~ ~~The last spKt/V for the month is between spKt/V >= 1.2 and spKt/V =< 5.0 (using either Daugirdas II or UKM). No diagram provided~~
~~Copyright / Disclaimer~~	~~5.1 Identified measures:~~ ~~5a.1 Are specs completely harmonized?~~ ~~5a.2 If not completely harmonized, identify difference, rationale, impact:~~ ~~5b.1 If competing, why superior or rationale for additive value:~~

	1424 Monthly Hemoglobin Measurement for Pediatric Patients
Steward	Centers for Medicare & Medicaid Services
Description	Percentage of patient months of pediatric (less than 18 years) in-center hemodialysis, home hemodialysis, and peritoneal dialysis patients who have monthly measures for hemoglobin during the reporting period.
Type	Process
Data Source	Electronic Clinical Data CROWNWeb No data collection instrument provided – No data dictionary
Level	Facility
Setting	Dialysis Facility
Time Window	The entire calendar month.
Numerator Statement	Number of patient months of pediatric (less than 18 years old) in-center hemodialysis, home hemodialysis, and peritoneal dialysis patients with a measurement of hemoglobin during the reporting period. The hemoglobin value reported for the end of each reporting month (end-of-month hemoglobin) is used for the calculation.
Numerator Details	The numerator will be determined by counting all patient months in the denominator that include values for 'Hemoglobin' and 'Hemoglobin Collection Date.' A valid hemoglobin value is defined as between 5-20 g/dL
Denominator Statement	All patient months for pediatric (less than 18 years old) in-center hemodialysis, home hemodialysis, and peritoneal dialysis patients under the care of the dialysis facility for the entire reporting month.
Denominator Details	Patients are included in the facility calculation if "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. The patient's age will be determined by subtracting the patient's date of birth from the first day of the reporting month. All patients under the facility's care for the entire calendar month and are less than 18 years of age will be included in the denominator.
Exclusions	Exclusions that are implicit in the denominator definition include all patients >=18 years and those who have not been in the facility the entire reporting month (transient patients). There are no additional exclusions for this measure.
Exclusion details	None.
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion – better quality = higher score
Algorithm	Patients are included in the facility calculation if "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. The patient's age will be determined by subtracting the patient's date of birth from the first day of the reporting month. All in-center HD, home HD, and PD patients under the facility's care for the entire calendar month and are less than 18 years of age will be included in the denominator. The numerator will be determined by counting all patients in the denominator who have values for 'Hemoglobin' and 'Hemoglobin Collection Date.' No diagram provided
Copyright / Disclaimer	5.1 Identified measures:

	~~**1424 Monthly Hemoglobin Measurement for Pediatric Patients**~~
	~~5a.1 Are specs completely harmonized?~~ ~~5a.2 If not completely harmonized, identify difference, rationale, impact:~~ ~~5b.1 If competing, why superior or rationale for additive value:~~

	1425 Measurement of nPCR for Pediatric Hemodialysis Patients
Steward	Centers for Medicare & Medicaid Services
Description	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.
Type	Process
Data Source	Electronic Clinical Data CROWNWeb No data collection instrument provided
Level	Facility
Setting	Dialysis Facility
Time Window	The entire calendar month.
Numerator Statement	Number of patient months in the denominator with monthly nPCR measurements.
Numerator Details	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	Number of all patient months for pediatric (less than 18 years old) in-center hemodialysis patients (irrespective of frequency of dialysis).
Denominator Details	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.
Exclusions	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.
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion – better quality = higher score
Algorithm	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

	~~**1425 Measurement of nPCR for Pediatric Hemodialysis Patients**~~
	~~("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. No diagram provided~~
~~Copyright / Disclaimer~~	~~5.1 Identified measures:~~ ~~5a.1 Are specs completely harmonized?~~ ~~5a.2 If not completely harmonized, identify difference, rationale, impact:~~ ~~5b.1 If competing, why superior or rationale for additive value:~~

	1454 Proportion of patients with hypercalcemia
Steward	Centers for Medicare & Medicaid Services
Description	Percentage of adult dialysis patients with a 3-month rolling average of total uncorrected calcium (serum or plasma) greater than 10.2 mg/dL (hypercalcemia)
Type	Outcome
Data Source	Electronic Clinical Data CROWNWeb No data collection instrument provided
Level	Facility
Setting	Dialysis Facility
Time Window	3 months (reporting month and previous 2 months)
Numerator Statement	Number of patient-months in the denominator with 3-month rolling average of total uncorrected serum (or plasma) calcium greater than 10.2 mg/dL
Numerator Details	If there are multiple calcium measurements during the month, the last value will be used for the calculation. Calcium measurements can be based on either serum or plasma calcium.
Denominator Statement	Number of patient-months among adult (greater than or equal to 18 years old) in-center hemodialysis, home hemodialysis, or peritoneal dialysis patients under the care of the dialysis facility for the entire reporting month who have had ESRD for greater
Denominator Details	N/A
Exclusions	Exclusions that are implicit in the denominator definition include all patients who have not been in the facility the entire reporting month (transient patients), and patients who have had ESRD for <91 days. There are no additional exclusions for this measure.
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion better quality = lower score
Algorithm	Patients are included in the denominator if they are >= 18 years old as of the first day of the three month study period, are ESRD for more than 90 days as of the first day of the most recent month of the study period, and are under the care of the facility for at least 30 days as of the last day of the most recent month of the study period. The patient's age will be determined by subtracting the patient's date of birth from the first day of the most recent month of the study period. The patient's time on dialysis will be determined by subtracting the patient's date regular Chronic Dialysis Began from the first day of the most recent month of the study period. Patients on dialysis are determined as follows: Primary Type of Dialysis is Hemodialysis, Home Hemodialysis, CAPD or CCPD in the most recent month of the study period. Patients under the care of the facility for at least 30 days are determined as follows: if the discharge date from the specified facility is missing/null or is after the last day of the most recent month of the study period, then the patient's time under the care of the facility is calculated from the admit date to the last day of the most recent month of the study period; if the discharge date is prior to the last day of the most recent month of the study period, the patient is excluded from the calculation. The numerator will be determined by counting the patient months in the denominator that meet the following criteria: the average total serum or plasma calcium over the 3-month study period is greater than 10.2 mg/dL. If there is more than one serum or plasma calcium measurement within each month of the study period, the last value for the month shall be

	~~**1454 Proportion of patients with hypercalcemia**~~
	~~used for the calculation of the average.~~
~~Copyright / Disclaimer~~	~~5.1 Identified measures:~~ ~~5a.1 Are specs completely harmonized?~~ ~~5a.2 If not completely harmonized, identify difference, rationale, impact:~~ ~~5b.1 If competing, why superior or rationale for additive value:~~

	1460 Bloodstream Infection in Hemodialysis Outpatients
Steward	Centers for Disease Control and Prevention
Description	Adjusted ranking metric (ARM) and Standardized Infection Ratio (SIR) of Bloodstream Infections (BSI) will be calculated among patients receiving hemodialysis at outpatient hemodialysis centers.
Type	Outcome
Data Source	Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Imaging/Diagnostic Study, Electronic Clinical Data : Laboratory, Paper Medical Records, Electronic Clinical Data : Pharmacy 57.503 Denominators for Outpatient Dialysis form 57.502 Dialysis Event URL
Level	Facility, Population : National, Population : Regional, Population : State
Setting	Dialysis Facility
Time Window	Cases are included if the positive blood culture occurs during a month during which a dialysis clinic was performing surveillance. With low numbers of expected infections, it will be necessary to have a data sample of sufficient size to generate meaningfu
Numerator Statement	The number of new positive blood culture events based on blood cultures drawn as an outpatient or within 1 calendar day after a hospital admission. A positive blood culture is considered a new event and counted only if it occurred 21 days or more after a previous positive blood culture in the same patient.
Numerator Details	Information required: Number of positive blood culture events and event date Definition: : A positive blood culture is a blood culture that results in growth of 1 or more organisms. A new positive blood culture (not less than 21 days after a previous positive blood culture in the same patient) in a hemodialysis patient identified from blood cultures taken as an outpatient or within 1 calendar day after a hospital admission. Data specifications: Events are counted if the following field: "patient with a positive blood culture" (on Form 57.502 under Event Details) is checked as being present. Additional data collection items/responses: Vascular access types are defined as follows – Nontunneled central line: a central venous catheter that travels directly from the skin entry site to a vein and terminates close to the heart or one of the great vessels, typically intended for short term use Tunneled central line: a central venous catheter that travels a distance under the skin from the point of insertion before terminating at or close to the heart or one of the great vessels Graft: a surgically created connection between an artery and a vein using implanted material (typically synthetic) to provide vascular access for hemodialysis Fistula: a surgically created direct connection between an artery and a vein to provide vascular access for hemodialysis Other vascular access device: includes hybrid access devices (e.g., HeRO vascular access device), ports, and any other central vascular access devices that do not meet the above definitions
Denominator Statement	Number of maintenance hemodialysis patients treated in the outpatient hemodialysis center on the first 2 working days of the month.
Denominator Details	Target population is all maintenance hemodialysis patients treated on the first 2 working days of a particular month in an outpatient hemodialysis center. Data specification: The numeric value entered into the field labeled "Total patients" (on Form 57.503) is used as the denominator.

	1460 Bloodstream Infection in Hemodialysis Outpatients
Exclusions	Patients receiving inpatient hemodialysis and home hemodialysis are excluded
Exclusion details	The inpatient hemodialysis exclusion is only relevant for facilities that provide both outpatient (maintenance) and inpatient (acute or maintenance) hemodialysis. Patients who receive inpatient hemodialysis in the same facility are excluded. The home dialysis exclusion applies to all patients who are on home dialysis, including but not limited to home dialysis patients who are monitored by a dialysis facility.
Risk Adjustment	Statistical risk model Both the numerator and denominator are stratified by vascular access type since vascular access type is the single greatest risk factor for bloodstream infection in this population. The vascular access variables that are collected and included in this ana URL
Stratification	Both the numerator and denominator are stratified by patient vascular access type, where permanent central lines are defined as tunneled central lines (or tunneled central venous catheters) and temporary central lines are defined as nontunneled central li
Type Score	Rate/proportion – better quality = lower score
Algorithm	The Standardized Infection Ratio (SIR) is calculated as follows: 1. Identify the number of BSI in each vascular access stratum 2. Total these numbers for an observed number of BSIs 3. Obtain the predicted number of BSIs in the same strata by multiplying the observed patient-months by the corresponding BSI rates in specific strata from a standard population 4. Sum the number of predicted BSIs from all strata in the annual period 5. Divide the total number of observed BSI events (#2 above) by the predicted number of BSIs (#4 above) 6. Result = SIR The Adjusted ranking metric (ARM) is calculated as follows: 1. Identify the number of BSI in each vascular access stratum 2. Obtain the adjusted number of observed BSIs by using a Bayesian posterior distribution constructed through Monte Carlo Markov Chain sampling, which results from a Bayesian random effects model 3. Total these numbers for an observed number of BSIs 4. Obtain the predicted number of BSIs in the same locations by multiplying the observed patient-months according to the factors significantly associated with predicting BSI rate as identified through a Log-linear Negative Binomial Regression Model 6. Divide the total number of adjusted BSI events (#3 above) by the predicted number of BSIs (#5 above) 7. Result = ARM
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:

	1660 ESRD Patients Receiving Dialysis: Hemoglobin Level <9g/dL
Steward	Renal Physicians Association
Description	Percentage of calendar months within a 12-month period during which patients aged 18 years and older with a diagnosis of ESRD who are receiving hemodialysis or peritoneal dialysis have a Hemoglobin level <9g/dL
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records, Electronic Clinical Data : Registry N/A Attachment ESRD_Patients_receiving_dialysis_Hbg__less_than_9g.pdf
Level	Clinician : Group/Practice, Clinician : Individual, Clinician : Team
Setting	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary, Rest Home, or Custodial Care Services
Time Window	Once during the measurement period
Numerator Statement	Calendar months during which patients have a Hemoglobin level <9g/dL* *The hemoglobin values used for this measure should be a most recent (last) hemoglobin value recorded for each calendar month
Numerator Details	See attached for EHR specifications. For Claims/Administrative: Report CPT II code 3XXXF: Hemoglobin level < 9 g/dL
Denominator Statement	All calendar months during which patients aged 18 years and older with a diagnosis of ESRD are receiving hemodialysis or peritoneal dialysis
Denominator Details	See attached for EHR Specifications. For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, CPT)
Exclusions	Documentation of medical reason(s) for patient having a Hemoglobin level <9g/dL (eg, patients who have non-renal etiologies of anemia [eg, sickle cell anemia or other hemoglobinopathies, multiple myeloma, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy], other medical reasons)
Exclusion details	Append modifier to CPT II code 3XXXF-1P
Risk Adjustment	Other We account for risk adjustment by inclusion of the exceptions for this measure. Exceptions for this measure are listed above, in section 2a1.8.
Stratification	We encourage the results of this measure to be stratified by race, ethnicity, gender, and primary language, and have included these variables as recommended data elements to be collected.
Type Score	Rate/proportion – better quality = lower score
Algorithm	Calculation algorithm is included in data dictionary/code table attachment (2a1.30).
Copyright / Disclaimer	5.1 Identified measures: 1667 : Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: This measure is related to NQF 1667 – a pediatric measure. RPA does not believe that a person's anemia treatment should change once they turn 18 years old. In addition, pediatric nephrologists often continue to see patients until they are 21 years old. However, to reconginze the changing anemia targets, the adult measure has been reduced to <9 g/dL. 2. Based on

	~~**1660 ESRD Patients Receiving Dialysis: Hemoglobin Level <9g/dL**~~
	~~historical evidence, failure to treat anemia with ESAs results in Hgb levels <8 and is associated with marked worsening of quality of life.~~ ~~5b.1 If competing, why superior or rationale for additive value: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement.~~ ~~We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program).~~

	1662 Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy
Steward	Renal Physicians Association
Description	Percentage of patients aged 18 years and older with a diagnosis of CKD (not receiving RRT) and proteinuria who were prescribed ACE inhibitor or ARB therapy within a 12-month period
Type	Process
Data Source	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records, Electronic Clinical Data : Registry N/A Attachment ACe_inhibitior_or_ARB_therapy_data_file.pdf
Level	Clinician : Group/Practice, Clinician : Individual, Clinician : Team
Setting	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary, Rest Home, or Custodial Care Services
Time Window	Once during the measurement period
Numerator Statement	Patients who were prescribed ACE inhibitor or ARB therapy within a 12-month period *The above list of medications/drug names is based on clinical guidelines and other evidence. The specified drugs were selected based on the strength of evidence for their clinical effectiveness. This list of selected drugs may not be all-inclusive or current. Physicians and other health care professionals should refer to the FDA's web site page entitled "Drug Safety Communications" for up-to-date drug recall and alert information when prescribing medications. Definitions: Prescribed – May include prescription given to the patient for ACE Inhibitor or ARB therapy OR patient already taking ACE Inhibitor or ARB therapy as documented in the current medication list
Numerator Details	See attached for EHR specifications. For Claims/Administrative: Report CPT Category II 4009F Angiotensin converting enzyme (ACE) inhibitor or Angiotensin Receptor Blocker (ARB) therapy prescribed
Denominator Statement	All patients aged 18 years and older with the diagnosis of CKD (Stages 1-5, not receiving RRT) and proteinuria Definitions: Proteinuria: 1. >300mg of albumin in the urine per 24 hours OR 2. ACR >300 mcg/mg creatinine OR 3. Protein to creatinine ratio > 0
Denominator Details	See attached for EHR specifications. For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, CPT)
Exclusions	Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, pregnancy, history of angioedema, cough due to ACE Inhibitor or ARB therapy, allergy to medications, other medical reasons) Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy (patient declined, other patient reasons)
Exclusion details	Append modifier to CPT II code 4009F-1P

	1662 Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy
	Append modifier to CPT II code 4009F-2P
Risk Adjustment	No risk adjustment or risk stratification As a process measure, no risk adjustment is necessary.
Stratification	We encourage the results of this measure to be stratified by race, ethnicity, primary language, and gender, and have included these variables as recommended data elements to be collected.
Type Score	Rate/proportion – better quality = higher score
Algorithm	Calculation algorithm is included in data dictionary/code table attachment (2a1.30).
Copyright / Disclaimer	5.1 Identified measures: 0066 : Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%) 0081 : Heart Failure (HF): Angiotensin-Converting Enzyme (AC 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program). The data source for ActiveHealth measures is what they call "level 2 clinically enriched data" (including data from claims & pharmacy). Our measure is specified for use in administrative claims (using CPT II codes) as well as integration into EHRs. The implementation of measures that are specified using clinically enriched data is significantly limiting in that it would only apply to those groups/settings with access to that type of information (ie, pharmacy data). NQF staff have noted that the ActiveHealth measures are in use by health plans – a 3 million patient database system. By comparison, our measures are in CMS's PQRS program providing an incentive payment to eligible professionals who satisfactorily report data on quality measures for services furnished to 46 million Medicare beneficiaries.

	1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL
Steward	Renal Physicians Association
Description	Percentage of calendar months within a 12-month period during which patients aged 17 years and younger with a diagnosis of End Stage Renal Disease (ESRD) receiving hemodialysis or peritoneal dialysis have a hemoglobin level < 10 g/dL
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry N/A Available at measure-specific web page URL identified in S.1 – Attachment AMA-PCPI_PKID-3_Hgblessthan10-6352893740049066657.pdf
Level	Clinician : Group/Practice, Clinician : Individual, Clinician : Team
Setting	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary, Rest Home (eg, Assisted Living Facility), or Custodial Care Services
Time Window	Each calendar month during the 12 consecutive month measurement period
Numerator Statement	Calendar months during which patients have a hemoglobin level < 10 g/dL
Numerator Details	Numerator Detail: The hemoglobin values used for this measure should be the most recent (last) hemoglobin value recorded for each calendar month During the NQF Maintenance Process, EHR Specifications were provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Claims/Administrative: G8973: Most recent hemoglobin (Hgb) level < 10 g/dL
Denominator Statement	All calendar months during which patients aged 17 years and younger with a diagnosis of ESRD are receiving hemodialysis or peritoneal dialysis
Denominator Details	During the NQF Maintenance Process, EHR Specifications were provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: Patients aged <= 17 years AND Diagnosis for ESRD (ICD-9-CM) [for use 1/1/2014-9/30/2014]: 585.6 Diagnosis for ESRD (ICD-10-CM) [for use 10/01/2014-12/31/2014]: N18.6 AND Patient encounter during the reporting period (CPT): 90945, 90947, 90951, 90952, 90953, 90954, 90955, 90956, 90957, 90958, 90959, 90963, 90964, 90965, 90967, 90968, 90969
Exclusions	Documentation of medical reason(s) for patient having a hemoglobin level < 10 g/dL (eg, patients who have non-renal etiologies of anemia [eg, sickle cell anemia or other hemoglobinopathies, hypersplenism, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy, post-operative bleeding, active bloodstream or peritoneal infection], other medical reasons)
Exclusion details	The PCPI exception methodology uses three categories of reasons for which a patient may be removed from the denominator of an individual measure. These measure exception categories are not uniformly relevant across all measures; for each measure, there must be a clear rationale to permit an exception for a medical, patient, or system reason. Examples are provided in the measure exception language of instances that may constitute an exception and are intended to serve as a guide to clinicians. For measure 1667, exceptions may include

	~~1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL~~
	~~medical reason(s) for patient having a hemoglobin level < 10g/dL (eg, patients who have non-renal etiologies of anemia [eg, sickle cell anemia or other hemoglobinopathies, hypersplenism, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy, postoperative bleeding, active bloodstream or peritoneal infection], other medical reasons). Where examples of exceptions are included in the measure language, value sets for these examples are developed and included in the eSpecifications. Although this methodology does not require the external reporting of more detailed exception data, the PCPI recommends that physicians document the specific reasons for exception in patients' medical records for purposes of optimal patient management and audit-readiness. The PCPI also advocates the systematic review and analysis of each physician's exceptions data to identify practice patterns and opportunities for quality improvement. Additional details by data source are as follows:~~ ~~During the NQF Maintenance Process, EHR Specifications were provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table.~~ ~~For Administrative/Claims:~~ ~~G8975: Documentation of medical reason(s) for patient having a hemoglobin level < 10 g/dL (e.g., patients who have non-renal etiologies of anemia (e.g., sickle cell anemia or other hemoglobinopathies, hypersplenism, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy, postoperative bleeding, active bloodstream or peritoneal infection), other medical reasons)~~
~~Risk Adjustment~~	~~Other We account for risk adjustment by inclusion of the exceptions for this measure.~~ ~~Exceptions for this measure are listed in field S.10. Denominator Exclusions.~~
~~Stratification~~	~~We encourage the results of this measure to be stratified by race, ethnicity, administrative sex, and primary language.~~
~~Type Score~~	~~Rate/proportion better quality = lower score~~
~~Algorithm~~	~~Calculation algorithm is included in the attachment in field S.2b. Data Dictionary Code Table.~~ ~~To calculate performance rates:~~ ~~1) Find the patients who meet the initial patient population (ie, the general group of patients that a set of performance measures is designed to address).~~ ~~2) From the patients within the initial patient population criteria, find the patients who qualify for the denominator (ie, the specific group of patients for inclusion in a specific performance measure based on defined criteria). Note: in some cases the initial patient population and denominator are identical.~~ ~~3) From the patients within the denominator, find the patients who qualify for the Numerator (ie, the group of patients in the denominator for whom a process or outcome of care occurs). Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator~~ ~~4) From the patients who did not meet the numerator criteria, determine if the physician has documented that the patient meets any criteria for exception when exceptions have been specified [for this measure: medical reason(s) for patient having a hemoglobin level < 10g/dL (eg, patients who have non-renal etiologies of anemia [eg, sickle cell anemia or other hemoglobinopathies, hypersplenism, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy, postoperative bleeding, active bloodstream or peritoneal infection], other medical reasons)]. If the patient meets any exception criteria, they should be removed from the denominator for performance calculation. Although the exception cases are removed from the denominator population for the performance calculation, the exception rate (ie, percentage with valid exceptions) should be calculated and reported along with performance rates to track variations in care and highlight possible areas~~

	~~1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL~~
	~~of focus for QI.~~ ~~If the patient does not meet the numerator and a valid exception is not present, this case represents a quality failure.~~
~~Copyright / Disclaimer~~	~~5.1 Identified measures: 1424 : Monthly Hemoglobin Measurement for Pediatric Patients~~ ~~5a.1 Are specs completely harmonized? No~~ ~~5a.2 If not completely harmonized, identify difference, rationale, impact: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program).~~ ~~5b.1 If competing, why superior or rationale for additive value: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement.~~ ~~We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program).~~

	2594 Optimal End Stage Renal Disease (ESRD) Starts
Steward	The Permanente Federation
Description	Optimal End Stage Renal Disease (ESRD) Starts is the percentage of new ESRD patients during the measurement period who experience a planned start of renal replacement therapy by receiving a preemptive kidney transplant, by initiating home dialysis, or by
Type	Process
Data Source	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry The data collection instrument is in the appendix. It is completed from records maintained by the renal care team as patients reach ESRD, and submitted to the analyst every 6 months. Available in attached appendix at A.1 – Attachment NQF_Renal_Measure_2594_Data_Elements.xlsx
Level	Integrated Delivery System, Population : Regional, Clinician : Team
Setting	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility
Time Window	12 months for denominator and numerator. The metric may be determined more frequently - for example, quarterly or semi-annually, using a rolling 12 month denominator.
Numerator Statement	The number of new ESRD patients who initiate renal replacement therapy in the twelve month measurement period with an optimal ESRD therapy (specific optimal ESRD therapies are defined in section S.6).
Numerator Details	The Optimal ESRD Starts numerator is the total number of new patients who initiate renal replacement therapy for the first time and do not come off dialysis by 90 days, with one of the following: • A preemptive kidney transplant or simultaneous pancreas-kidney transplant (SPK). Preemptive means that the patient has never experienced out-patient dialysis, OR • Initial home or self-dialysis modality, including planned and "successful urgent start" peritoneal dialysis (PD) and home hemodialysis (HHD) via an arteriovenous fistula or arteriovenous graft. "Successful urgent start" peritoneal dialysis means that the patient never experienced outpatient hemodialysis via a hemodialysis catheter before starting outpatient peritoneal dialysis, OR • Initial outpatient hemodialysis (HD), including self-hemodialysis (SHD), via arteriovenous fistula (AVF) prepared surgically without use of artificial materials. The patient may have a hemodialysis catheter in place if it is not used. Do not count patient with a single needle in AVF with blood return via catheter, OR • Initial outpatient hemodialysis (HD), including self-hemodialysis (SHD), via arteriovenous graft (AVG), limited to no more than 10% of all patients starting in-center hemodialysis#. The patient may have a hemodialysis catheter if it is not used. Do not count patient with a single needle in AVG with blood return via catheter. # An arteriovenous fistula (AVF) is highly preferred for hemodialysis over an arteriovenous graft (AVG). AVF are associated with many fewer follow-up encounters with vascular surgery and interventional radiology to remove clots, dilate and replace. CMS has recognized AVF superiority in its Fistula First Quality Initiative, which continues to collect data and promote practice improvement methods. Nevertheless, not every patient is suitable for an AVF, and these patients require an AVG for hemodialysis which is still much better than hemodialysis by catheter. In our 3-year experience measuring Optimal ESRD Starts in Kaiser Permanente less than 5 percent of new hemodialysis patients start with an AVG as their initial access. The 10% of new hemodialysis patient limit for AVG was determined by an interregional Kaiser Permanente nephrologist work group to be consistent with the CMS Fistula First Initiative and in consideration of potential practice

	2594 Optimal End Stage Renal Disease (ESRD) Starts
	changes in the future.
Denominator Statement	The number of patients who receive a preemptive kidney transplant or initiate long-term dialysis therapy (do not recover kidney function by 90 days) for the first time in the twelve month measurement period
Denominator Details	The population being measured are patients who 1) receive a preemptive kidney transplant (having never received outpatient dialysis), including simultaneous pancreas and kidney transplant, plus 2) patients initiating long-term maintenance dialysis who do not recover kidney function by 90 days. The population includes patients who start renal replacement therapy and then are lost to follow up (lose insurance, move away) and/or die. The denominator is the number of the above patients within the measured entity during the 12-month measurement period. Clarifications based on the above definition (not exclusions): 1. The denominator does not include patients who initiate outpatient dialysis but then recover GFR to the point where they can stop dialysis treatments by 90 days after the first outpatient dialysis. 2. The denominator does not include patients who previously reached ESRD, such as • Patients who previously were on dialysis 90 days or more who then recovered kidney function for a while, but then restarted dialysis • Patients who switch from one dialysis modality to another, for example switching from in-center hemodialysis to home dialysis. • Patients with failing kidney transplants starting or returning to dialysis. 3. The denominator does not include patients who died without experiencing outpatient dialysis or a kidney transplant.
Exclusions	None
Exclusion details	None
Risk Adjustment	No risk adjustment or risk stratification n/a
Stratification	As there is no patient sampling (all patients who reach ESRD are included), there is no stratified sampling. For comparative purposes and tracking within Kaiser Permanente, the metric has been calculated (stratified) by geographic medical regions or are
Type Score	Rate/proportion – better quality = higher score
Algorithm	1. The target population is all new ESRD patients as described in S.9. Denominator Details. There are no exclusions. Data is compiled and submitted on standardized spreadsheets. 2. Determine denominator: • Eliminate patients who do not meet denominator definition S.9. Denominator Details a. Eliminate patients who recovered kidney function by day 90 b. Eliminate patients who previously were on dialysis 90 days or more who then recovered kidney function then later restarted dialysis c. Eliminate patients starting dialysis after failed transplant d. Eliminate patients changing dialysis modality e. Eliminate patients who died without experiencing outpatient dialysis or a kidney transplant • Eliminate patients with incomplete data if unavailable

	2594 Optimal End Stage Renal Disease (ESRD) Starts
	3. Count patients in each category. Each denominator patient must be assigned to one and only one of the groups below. Rules are listed in S.6. Numerator Details Group A: Preemptive kidney transplant Group B: Peritoneal Dialysis (Home) Group C: Home Hemodialysis Group D: In-center HD with AVF Group E: In-center HD with AVG Group F: In-center HD with Catheter 4. Note: Denominator = A + B + C + D + E + F 5. Calculate Adjusted AVG (E') = Smaller of [E] or [(C + D + E + F) ÷ 10] 6. Calculate Optimal ESRD Starts = ((A + B + C + D + E'))/Denominator) x 100% 7. Calculate Modality Sub-metrics • Preemptive Kidney Transplant Starts + (A/Denominator) x 100% • Home Dialysis Starts = ((B + C))/Denominator) x 100% • Optimal AVF & AVG Starts = ((D + E'))/Denominator) x 100% • Non-Optimal ESRD Starts = 100% - Optimal ESRD Starts Available in attached appendix at A.1
Copyright / Disclaimer	5.1 Identified measures: 0256 : Minimizing Use of Catheters as Chronic Dialysis Access 0257 : Maximizing Placement of Arterial Venous Fistula (AVF) 1460 : Bloodstream Infection in Hemodialysis Outpatients 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: There are two related measures, 0256 and 0257, but no competing measures. These measures and Optimal ESRD Starts are complementary with different rationale and different data collection methods. Optimal ESRD Starts focuses on patients who need to start renal replacement therapy, including hemodialysis, whereas measures 0256 and 0257 both focus on improving vascular access for patients already on hemodialysis. The Measure 0256 Hemodialysis Vascular Access – Minimizing use of catheters as Chronic Dialysis Access metric is a percentage of patients currently on maintenance hemodialysis with a chronic catheter in place continuously for 90 days or more. As opposed to Optimal ESRD Starts, which is an incidence rate for new ESRD patients, measure 0256 is a prevalence measure of the existing hemodialysis population. Another difference is that even a single first treatment with a catheter is a negative Optimal ESRD Start outcome, whereas measure 0256 requires a catheter to be present for 90 days or longer. While the denominator populations are not harmonized, Optimal ESRD Starts is complimentary as more Optimal ESRD Start without a hemodialysis catheter will lower chronic catheter prevalence. The Measure 0257 Hemodialysis Vascular Access – Maximizing Placement of Arterial Venous Fistula metric is a percentage of patients on maintenance hemodialysis using an autogenous arteriovenous fistula (AVF). Like optimal ESRD Starts, it focuses on increasing the use of arteriovenous fistulas as the best type of vascular access for hemodialysis. As opposed to Optimal ESRD Starts, which is an incidence rate for new ESRD patients, measure 0257 is a prevalence measure of the existing hemodialysis population. While the denominator populations are not harmonized, Optimal ESRD Starts is complimentary. An Optimal ESRD Start with an AVF will result in higher AVF prevalence. In summary, Optimal ESRD starts is quite different in focus (Pre-ESRD patient planning versus managing patients already on hemodialysis), covers home dialysis and transplant as well as inpatient hemodialysis, and is the only metric to impact patients before and as they transition

	~~**2594 Optimal End Stage Renal Disease (ESRD) Starts**~~
	~~to ESRD. It is an incidence rate at the point of reaching ESRD as opposed to a prevalence rate in patients already on hemodialysis. Optimal ESRD Starts tells how a health care entity is performing in the build up to ESRD to optimize each patient's modality choice, and the other two measures address how an organization is doing after patients reach ESRD, limited only to hemodialysis.~~ ~~5b.1 If competing, why superior or rationale for additive value:~~

	2699 Anemia of chronic kidney disease: Dialysis facility standardized transfusion ratio (STrR)
Steward	Centers for Medicare and Medicaid Services
Description	The risk adjusted facility level transfusion ratio "STrR" is specified for all adult dialysis patients. It is a ratio of number of eligible red blood cell transfusion events observed in patients dialyzing at a facility, to the number of eligible transfusi
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data These data are part of an extensive and comprehensive national ESRD patient database, derived from the Consolidated Renal Operations in a Web-enabled Network (CROWN) data system, Medicare claims, and the Social Security Death Master File. The CROWN data system is made up of the Renal Management Information System (REMIS) and CROWNWeb and is updated regularly using the Medicare Enrollment Database (EDB), ESRD Medical Evidence Report forms (CMS 2728), ESRD Death Notification forms (CMS 2746), and the Organ Procurement and Transplantation Network (OPTN) transplant database. No data collection instrument provided - Attachment STrR_Code_Table-635605475147100397.xlsx
Level	Facility
Setting	Dialysis Facility
Time Window	One year
Numerator Statement	Number of eligible observed red blood cell transfusion events. Events are defined as transfer of one or more units of blood or blood products into recipient's blood stream (code set is provided in the numerator details) among patients dialyzing at the facility during the inclusion episodes of the reporting period. Inclusion episodes are those that do not have any claims pertaining to the comorbidities identified for exclusion, in the one year look back period prior to each observation window.
Numerator Details	Red blood cell transfusions are identified by in-patient records with revenue center codes in (0380, 0381, 0382, 0389, 0390, 0391, 0392, 0399) or value code = 37 or procedure code in (9903, 9904) and with out-patient records with revenue center codes in (0380, 0381, 0382, 0389, 0390, 0391, 0392, 0399) and HCPCS code in (P9010, P9011, P9016, P9021, P9022, P9038, P9039, P9040, P9051, P9054, P9056, P9058, 36430). The numerator is calculated using Medicare Claims data. Transfusion events are identified by using the above mentioned codes and then the patient is attributed to a dialysis facility using the rules discussed in the denominator details (S.9). The numerator is the count of all such eligible transfusion events over the inclusion periods as defined below in section S.11, for a given facility. Our method for counting transfusion events relies on a conservative counting algorithm and, because of the way transfusion information is reported in Medicare claims, we use different rules for counting transfusion events, depending on whether or not the event occurs in the inpatient setting, or an outpatient setting. The most common way events are reported on claims is by reporting a revenue center or value code (inpatient claims) or for outpatient claims, reporting HCPCS codes for a revenue center date. One "transfusion event" is counted per inpatient claim if one or more transfusion-related revenue center or value codes are present. This is the way most inpatient transfusion events are reported on claims (i.e., using revenue center or value codes, not procedure codes). We only count a single transfusion event for an inpatient claim regardless of the number of transfusion revenue center and value codes reported so that the number of discrete events counted is the same whether the claim indicates 1 unit of blood or multiple units of blood. This results in a very conservative estimate of blood transfusions from inpatient claims. A

	~~2699 Anemia of chronic kidney disease: Dialysis facility standardized transfusion ratio (STrR)~~
	~~small fraction of inpatient transfusion events are identified using specific procedure codes. For these cases, we are able to identify multiple transfusion events for some hospitalizations and count a unique "transfusion event" for each transfusion procedure code listed on an inpatient claim. CMS allows the transfusion procedure to be billed only once per day per visit.~~ ~~Transfusion events are not common in outpatient settings, but similar rules apply. Multiple HCPCS codes reported for the same revenue center date are counted as a single transfusion event regardless of the number of units of blood recorded. In other words, 3 pints of blood reported with the same revenue center date would be counted as a single transfusion event.~~ ~~The detailed procedures to determine unique transfusion events at the claim level are presented in a flow chart in the Appendix.~~
~~Denominator Statement~~	~~Number of eligible red blood cell transfusion events (as defined in the numerator statement) that would be expected among patients at a facility during the reporting period, given the patient mix at the facility. Inclusion episodes are those that do not h~~
~~Denominator Details~~	~~Starting with day 91 after onset of ESRD, a patient is attributed to a facility once the patient has been treated there for the past 60 days and for the following 60 days after transfer to another dialysis facility.~~ ~~Based on a risk adjustment model for the overall national transfusion rates, we compute the expected number of red blood cell transfusion events for each patient attributed to a given facility. The sum of all such expectations over patients in a facility yields the overall expected number of transfusions for a given facility given the specific patient mix. This forms the denominator of the measure. This measure is based on Medicare administrative claims and databases and is applied to patients covered by Medicare.~~
~~Exclusions~~	~~All transfusions associated with transplant hospitalization are excluded. Patients are excluded if they have a Medicare claim for hemolytic and aplastic anemia, solid organ cancer (breast, prostate, lung, digestive tract and others), lymphoma, carcinoma in situ, coagulation disorders, multiple myeloma, myelodysplastic syndrome and myelofibrosis, leukemia, head and neck cancer, other cancers (connective tissue, skin, and others), metastatic cancer, and sickle cell anemia within one year of their patient at risk time. Since these comorbidities are associated with higher risk of transfusion and require different anemia management practices that the measure is not intended to address, every patient's risk window is modified to have at least 1 year free of claims that contain diagnoses on the exclusion list.~~
~~Exclusion details~~	~~All transfusions associated with transplant hospitalization are excluded. Patients are excluded if they have a Medicare claim for hemolytic and aplastic anemia, solid organ cancer (breast, prostate, lung, digestive tract and others), lymphoma, carcinoma in situ, coagulation disorders, multiple myeloma, myelodysplastic syndrome and myelofibrosis, leukemia, head and neck cancer, other cancers (connective tissue, skin, and others), metastatic cancer, and sickle cell anemia within one year of their patient at risk time. Since these comorbidities are associated with higher risk of transfusion and require different anemia management practices that the measure is not intended to address, every patient's risk window is modified to have at least 1 year free of claims that contain diagnoses on the exclusion list.~~ ~~We performed multivariate logistic regression demonstrating that a 1-year look back period for the above mentioned comorbidities was more predictive of transfusion events compared to longer look back periods.. The figure found in the appendix describes the inclusion and exclusion period of a hypothetical patient. In the figure included in the appendix, a hypothetical patient has patient years at risk at a facility from 1/1/2008 to 12/31/2011. Review of Medicare claims identified presence of one or more exclusion comorbidities (see above and Appendix) in 2007 (Claim1), 2008 (Claim2) and 2010 (Claim3). Each claim is followed by a one year exclusion period. The revised inclusion periods are defined as risk windows with at least a 1 year claim-free period (Inclusion1 and Inclusion2 in Figure1). The~~

	2699 Anemia of chronic kidney disease: Dialysis facility standardized transfusion ratio (STrR)
	patient has two transfusion events, marked as T1 and T2 in late 2008 and late 2011 respectively. However, since T1 falls in the exclusion period, it will not be counted towards the facility's transfusion count as presence of exclusion comorbidity claims within a year might have increased the risk of transfusion unrelated to dialysis facility anemia management practice. However, T2, which occurs in late 2011 and in Inclusion2 period, will be counted since there is at least a year gap between this transfusion event and the last claim observed.
Risk Adjustment	Statistical risk model The denominator of the "STrR" uses expected transfusions calculated from a Cox model (Cox, 1972) as extended to handle repeated events (Lawless and Nadeau, 1995; Lin et al., 2000; Kalbfleisch and Prentice, 2002). For computational purposes, we adopt a mod Provided in response box S.15a
Stratification	N/A
Type Score	Ratio – better quality = lower score
Algorithm	Numerator is the observed number of transfusion events for a facility and denominator for the same facility is the expected number of transfusion events adjusted for patient mix. The measure for a given facility is calculated by dividing the numerator by the denominator. Available in attached appendix at A.1
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:

	2700 Ultrafiltration rate greater than 13 ml/kg/hr
Steward	Centers for Medicare and Medicaid Services
Description	Percentage of patients months for patients an ultrafiltration rate greater than 13 ml/kg/hr.
Type	Outcome
Data Source	Electronic Clinical Data CROWNWeb No data collection instrument provided
Level	Facility
Setting	Dialysis Facility
Time Window	One Month
Numerator Statement	Number of patient months for adult ESRD patients at a dialysis facility with an ultrafiltration rate greater than 13 ml/kg/hr.
Numerator Details	Ultrafiltration rate is calculated for a single session per month (CROWNWeb records data from the last session) using data elements for pre-dialysis weight, post-dialysis weight, and delivered minutes of dialysis. The formula for UFR is: UFR = [(((delta wt kg)*1000)/(delivered time/60))/post wt kg] If the monthly ultrafiltration rate exceeds 13 ml/kg/hr then a patient is counted in the numerator.
Denominator Statement	Total number of patient months for adult patients reported at a dialysis facility undergoing hemodialysis (HD).
Denominator Details	All adult (=18 years old) hemodialysis patients with ESRD >= 3 months and who are assigned to the same provider for at least the full reporting month who have non-missing values for data elements necessary for calculating UFR (pre and post dialysis weight and delivered time per session) during the reporting period.
Exclusions	Exclusions that are implicit in the denominator definition include 1) pediatric patients 2) PD patients, 3) patients new to ESRD (less than 90 days on chronic dialysis) and 4) patients that have not been with the same facility for the entire reporting month (transient patients). There are no additional exclusions for this measure.
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion better quality = lower score
Algorithm	1. Using CROWNWeb-reported data (data stored as SAS files), identify all adult HD patients under the care of a facility during the reporting month. 2. From this group, remove patients who were not in the facility for the entire reporting month and patients who have not been on chronic dialysis for at least 90 days. 3. To form the numerator, remove all denominator-eligible patients who do not have required elements to calculate ultrafiltration rate including pre-dialysis weight (kg), post dialysis weight (kg), and delivered time on hemodialysis (mins). 4. Calculate the facility´s rate of UFR>13 by dividing the number calculated in Step 3 (the numerator) by the number calculated in Step 2 (the denominator). No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized?

	~~**2700 Ultrafiltration rate greater than 13 ml/kg/hr**~~
	~~5a.2 If not completely harmonized, identify difference, rationale, impact:~~ ~~5b.1 If competing, why superior or rationale for additive value: We are currently discussing the differences between our UFR measures with KCQA. The primary differences identified are the treatment time exclusion criterion, the transient patient exclusion criterion, and the use of an average of 3 treatments/week (compared to the last treatment of the month).~~

	2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)
Steward	Kidney Care Quality Alliance (KCQA)
Description	Percentage of adult in-center hemodialysis patients in the facility whose average ultrafiltration rate (UFR) is >/= 13 ml/kg/hour.
Type	Process
Data Source	Electronic Clinical Data CROWNWeb Electronic Data Interchange, available at URL: http://www.projectcrownweb.org/crown/index.php. No data dictionary
Level	Facility
Setting	Other Dialysis facility
Time Window	12 months.
Numerator Statement	Number of patients* from the denominator whose average UFR >13 ml/kg/hour who receive an average of <240 minutes per treatment during the calculation period.** *To address the fact that patients may contribute varying amounts of time to the annual denominator population, results will be reported using a "patient-month" construction. ** The calculation period is defined as the same week that the monthly Kt/V is drawn.
Numerator Details	Numerator Data Elements For all patients meeting the denominator criteria in the reporting month, collect the following data elements for all dialysis sessions (including supplemental sessions) falling within the same week that the monthly Kt/V is drawn:* • Pre-Dialysis Weight for Session (CROWNWeb RQMT_1532) • Post-Dialysis Weight for Session (RQMT_1323) • Time Delivered Per Session, in Minutes (RQMT_1358) • Session Date • Sessions Per Week (RQMT_1357) * 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). Numerator Case Identification For each facility, for all dialysis sessions falling within the calculation period for all patients meeting the denominator criteria: 1. Calculate the UFR (in ml/kg/hour) for each dialysis session (including supplemental sessions): Session X UFR = {[{Session X Pre-Dialysis Weight in kg – Session X Post-Dialysis Weight in kg} x 1000 ml/kg] ÷ Session X Post-Dialysis Weight in kg) ÷ (Session X Delivered Treatment Time in minutes) x 60 minutes/hour 2. Calculate each patient's average UFR for all dialysis sessions (including supplemental sessions) during the calculation period: Average UFR = (UFR1 + UFR2 + …. + UFRX) ÷ X Treatments 3. Calculate each patient's average treatment time over all dialysis sessions (including supplemental sessions) during the calculation period: Average Treatment Time (in minutes) = (Time1 + Time 2 + … + TimeX) ÷ X Treatments 4. Identify all patients with <4 dialysis sessions during the calculation period. 5. For each facility, include in the numerator all patients with: • an average UFR during the calculation period (Step 2 value) >/= 13 ml/kg/hour; AND • an average treatment time during the calculation period (Step 3 value) <240 minutes.

	2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)
Denominator Statement	Number of adult in-center hemodialysis patients in an outpatient dialysis facility undergoing chronic maintenance hemodialysis during the calculation period.
Denominator Details	Identify all patients in the dialysis facility during the reporting period whose: • Primary Type Treatment/Modality (CROWNWeb RQMT_1252 and/or _1356) = Hemodialysis. • Primary/Current Dialysis Setting (RQMT_791, _1355, and/or _1414) = In-center. • Date of Birth (RQMT_1310) = >18 years prior to treatment date.
Exclusions	The following patients are excluded from the denominator population: 1. Patients <18 years of age (implicit in denominator definition). 2. Home dialysis patients (implicit in denominator definition). 3. Patients in a facility <30 days. 4. Patients with >4 hemodialysis treatments during the calculation period. 5. Patients with <7 hemodialysis treatments in the facility during the reporting month. 6. Patients without a completed CMS Medical Evidence Form (Form CMS-2728) in the reporting month. 7. Kidney transplant recipients with a functioning graft. 8. Facilities treating <XX adult in-center hemodialysis patients during the reporting month. (Number currently being evaluated.)
Exclusion details	For all patients meeting the denominator criteria in the reporting month, identify all patients meeting any of the following exclusion criteria during the calculation period and remove from the denominator population: 1. Date of Birth (RQMT_1310) = <18 years prior to treatment date (implicit in denominator definition). 2. Primary Type Treatment/Modality (CROWNWeb RQMT_1252 and/or _1356) = Peritoneal dialysis or home hemodialysis (implicit in denominator definition). 3. Date Patient Started Chronic Dialysis at Current Facility (RQMT_1360) = >30 days prior to treatment date. 4. Sessions Per Week (RQMT_1357) = >4 5. Transient Status (RQMT_356) = Not transient OR patients with <7 hemodialysis treatments in the facility during the reporting month. 6. Patients without a completed CMS Medical Evidence Form (Form CMS-2728) in the reporting month. 7. Kidney transplant recipients with a functioning graft
Risk Adjustment	No risk adjustment or risk stratification Not applicable.
Stratification	Not applicable.
Type Score	Rate/proportion – better quality = lower score
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

	~~2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)~~
	~~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. Sessions Per Week (RQMT_1357) = >4.~~ ~~d. Patients without a completed CMS Medical Evidence Form (Form CMS-2728) in the reporting month.~~ ~~e. 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. Pre-Dialysis Weight for Session (CROWNWeb RQMT_1532)~~ ~~b. Post-Dialysis Weight for Session (RQMT_1323)~~ ~~c. Session Date~~ ~~d. Time Delivered Per Session, in Minutes (RQMT_1358)~~ ~~e. Sessions Per Week (RQMT_1357)~~ ~~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 UFR (in ml/kg/hour) for each dialysis session (including supplemental sessions):~~ ~~Session X UFR = ({{Session X Pre-Dialysis Weight in kg – Session X Post-Dialysis Weight in kg} x 1000 ml/kg] ÷ Session X Post-Dialysis Weight in kg) ÷ (Session X Delivered Treatment Time in minutes) x 60 minutes/hour~~ ~~b. Calculate each patient's average UFR for all dialysis sessions (including supplemental sessions) during the calculation period:~~ ~~Average UFR = (UFR1 + UFR2 + …. + UFRX) ÷ X Treatments~~ ~~c. Calculate each patient's average treatment time over all dialysis sessions (including supplemental sessions) during the calculation period:~~ ~~Average Treatment Time (in minutes) = (Time1 + Time 2 + … + TimeX) ÷ X Treatments~~ ~~d. For each facility, include in the numerator all patients with:~~ ~~i. an average UFR during the calculation period (4.b. value) >/= 13 ml/kg/hour;~~ ~~AND~~ ~~ii. an average treatment time during the calculation period (4.c. value) <240 minutes.~~ ~~5. Calculate the facility's Month 1 performance score:~~ ~~Month 1 Performance Score = Month 1 Numerator Population ÷ Month 1 Denominator~~

	2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)
	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 Available in attached appendix at A.1
Copyright / Disclaimer	5.1 Identified measures: 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: Discussions between KCQA and CMS are ongoing in an attempt to harmonize the measures. Identified differences include the following: 1. KCQA defines the UFR parameter as >/= 13, while CMS defines it as > 13. 2. The KCQA measure contains a length of session component, while the CMS measure does not. 3. The KCQA measure takes the average of the UFR over the sessions occurring in the week that the Kt/V is drawn; the CMS measure relies on data from a single dialysis session. 5b.1 If competing, why superior or rationale for additive value: Again, discussions between KCQA and CMS are ongoing in an attempt to harmonize the measures. Identified differences and the rationale for those differences are summarized below: 1. The KCQA UFR parameter is ">/= 13"; the CMS parameter is "> 13". This is a small issue for which there is no strong clinical data supporting one position over the other. 2. The KCQA measure contains a length of session component; the CMS measure does not. KCQA believes that this is an important component of the measure, the intent of which is to encourage longer dialysis sessions and to not create the unintended consequence of longer sessions impacting subsequent patients on the same treatment day (who may then sign-off early). 3. The KCQA measure averages the UFRs over the course of the Kt/V week; the CMS measure relies on data from a single dialysis session (the session for which data are submitted via CROWNWeb for the Kt/V measure). To avoid potential gaming when a single event is used and to create a more accurate representation of performance, the KCQA measure specifies an average rate for the three sessions—the Kt/V measure data and data from the other two sessions during that week. This three-session average also obviates potential uneven-ness in performance that could arise depending on the particular day of the week any given facility is using for the Kt/V data.

	2702 Post-Dialysis Weight Above or Below Target Weight
Steward	Kidney Care Quality Alliance (KCQA)
Description	Percentage of patients with an average post-dialysis weight >/= 1 kg above or below the prescribed target weight.
Type	Process
Data Source	Electronic Clinical Data CROWNWeb Electronic Data Interchange, available at URL: http://www.projectcrownweb.org/crown/index.php. Available at measure-specific web page URL identified in S.1 – No data dictionary
Level	Facility
Setting	Other Dialysis facility
Time Window	12 months.
Numerator Statement	Number of patients* from the denominator with an average post-dialysis weight >/= 1 kg above or below the prescribed target weight during the calculation period.** *To address the fact that patients may contribute varying amounts of time to the annual denominator population, results will be reported using a "patient-month" construction. ** The calculation period is defined as the same week that the monthly Kt/V is drawn.
Numerator Details	Numerator Data Elements For all patients meeting the denominator criteria in the reporting month, collect the following data elements for all dialysis sessions (including supplemental sessions) falling within the same week that the monthly Kt/V is drawn:* • Post-Dialysis Target Weight for Session (CROWNWeb RQMT_1052) • Post-Dialysis Weight for Session (RQMT_1323) • Session Date * 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). Numerator Case Identification For each facility, for all dialysis sessions falling within the calculation period for all patients meeting the denominator criteria: 1. Calculate the difference between the patient's post-dialysis weight and prescribed target weight for each dialysis session falling within the calculation period (including supplemental sessions): Patient's Post-Dialysis and Prescribed Target Weight Difference for Session X = Session X Post-Dialysis Weight – Session X Prescribed Target Weight 2. Take the sum of the differences calculated in Step 1: Sum of Patient's Post-Dialysis and Prescribed Target Weight Differences = Session 1 Difference + Session 2 Difference +….. + Session Y Difference 3. Divide the value obtained in Step 2 by the patient's number of sessions (including supplemental sessions) in the calculation period to find the patient's average weight difference for the calculation period: Patient's Average Post-Dialysis and Target Weight Difference = Sum of Patient's Post-Dialysis and Prescribed Target Weight Differences in Calculation Period ÷ Number of Patient's Dialysis Sessions in Calculation Period 4. For each facility, include in the numerator all patients whose average dialysis session post-dialysis and target weight difference during the calculation period (Step 3 value) was +/- >/= 1

	2702 Post-Dialysis Weight Above or Below Target Weight
	kg.
Denominator Statement	Number of adult in-center hemodialysis patients in an outpatient dialysis facility undergoing chronic maintenance hemodialysis during the calculation period.
Denominator Details	Denominator Data Elements and Case Identification Identify all patients in the dialysis facility during the reporting month who meet all of the following criteria: • Primary Type Treatment/Modality (CROWNWeb RQMT_1252 and/or _1356) = Hemodialysis. • Primary/Current Dialysis Setting (RQMT_791, _1355, and/or _1414) = In-center. • Date of Birth (RQMT_1310) = >/=18 years prior to treatment date.
Exclusions	The following patients are excluded from the denominator population: 1. Patients <18 years of age (implicit in denominator definition). 2. Home dialysis patients (implicit in denominator definition). 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) in the reporting month. 6. Kidney transplant recipients with a functioning graft. 7. Facilities treating <XX adult in-center hemodialysis patients during the reporting month. (Number currently being evaluated.)
Exclusion details	For all patients meeting the denominator criteria in the reporting month, identify all patients meeting any of the following exclusion criteria during the calculation period and remove from the denominator population: 1. Date of Birth (RQMT_1310) = <18 years prior to treatment date (implicit in denominator definition). 2. Primary Type Treatment/Modality (CROWNWeb RQMT_1252 and/or _1356) = Peritoneal dialysis or home hemodialysis (implicit in denominator definition). 3. Date Patient Started Chronic Dialysis at Current Facility (RQMT_1360) = >30 days prior to treatment date. 4. Transient Status (RQMT_356) = Not transient OR patients with <7 hemodialysis treatments in the facility during the reporting month. 5. Patients without a completed CMS Medical Evidence Form (Form CMS-2728) in the reporting month. 6. Kidney transplant recipients with a functioning graft
Risk Adjustment	No risk adjustment or risk stratification Not applicable.
Stratification	Not applicable.
Type Score	Rate/proportion – better quality = lower score
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 whose: a. Primary Type Treatment/Modality (CROWNWeb RQMT_1252 and/or _1356) = Hemodialysis.

	~~2702 Post-Dialysis Weight Above or Below Target Weight~~
	~~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 calculation period:~~ ~~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 +…..~~

	~~**2702 Post-Dialysis Weight Above or Below Target Weight**~~
	~~+ Month 12 Score) ÷ 12 Available in attached appendix at A.1~~
~~Copyright / Disclaimer~~	~~5.1 Identified measures:~~ ~~5a.1 Are specs completely harmonized?~~ ~~5a.2 If not completely harmonized, identify difference, rationale, impact: Not applicable; no currently endorsed NQF measures addressing post-dialysis and target weight discrepancies.~~ ~~5b.1 If competing, why superior or rationale for additive value: Not applicable; no currently endorsed NQF measures addressing post-dialysis and target weight discrepancies.~~

	2703 Minimum Delivered Hemodialysis Dose
Steward	Centers for Medicare and Medicaid Services
Description	Percentage of all patient months for patients whose average delivered dose of hemodialysis using the UKM or Daugirdas II formula) was between spKt/V >= 1.2 and spKt/V =< 5.0
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used. No data collection instrument provided -- No data dictionary
Level	Facility
Setting	Dialysis Facility
Time Window	The entire calendar month.
Numerator Statement	Number of patient months in denominator whose average delivered dose of hemodialysis using the UKM or Daugirdas II formula) was between spKt/V >= 1.2 and spKt/V =< 5.0
Numerator Details	Eligible Kt/V values counted in the numerator are those in the range from spKt/V >= 1.2 to spKt/V =< 5.0 during the reporting month. Values that will not be counted in the numerator are: Out of range spKt/V of <1.2 or spKt/V> 5.0); missing (no spKt/V reported).
Denominator Statement	To be included in the denominator for a particular month, the patients must have had ESRD for greater than 90 days, must be dialyzing thrice weekly (adults) or dialyzing in-center 3 or 4 times weekly (pediatrics), and must be assigned to the facility for
Denominator Details	A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. SIMS/CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death and transplant is obtained from additional sources including the CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746) and the Social Security Death Master File. The denominator is defined as counting the patient months of HD patients who received dialysis greater than two and less than four times a week (adults), HD patients who received dialysis greater than two and less than five times a week (pediatric), did not indicate frequent dialysis, have had ESRD for greater than 90 days, and were assigned to that facility for the entire month.
Exclusions	Exclusions that are implicit in the denominator definition include 1) patients receiving dialysis less than 3 times weekly 2) all patients who have had ESRD for <91 days 3) pediatric home hemodialysis patients 4) patients who have not been in the facility the entire reporting month. There are no additional exclusions for this measure.
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A

	2703 Minimum Delivered Hemodialysis Dose
Stratification	N/A
Type Score	Rate/proportion – better quality = higher score
Algorithm	Denominator: For the reporting month, patients are included in the denominator if: Patient modality is indicated as HD Patient has had ESRD for greater than 90 days Patient is not on frequent dialysis (adults = 3 times/week, pediatrics = 3 or 4 times a week) Patient indicates in-center hemodialysis (pediatric only) Patient has been assigned to the facility for the entire month Numerator: For the reporting month, patients are included in the numerator if The last spKt/V for the month is between spKt/V>= 1.2 and spKt/V =< 5.0 (using either Daugirdas II or UKM). No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 0249 : Delivered Dose of Hemodialysis Above Minimum 0323 : Adult Kidney Disease: Hemodialysis Adequacy: Solute 1423 : Minimum spKt/V for Pediatric Hemodialysis Patients 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: This measure is completely harmonized with the individual hemodialysis measures (#0249, #1423). They all have the corresponding threshold ranges (numerator) and corresponding denominator populations. The measure is not harmonized with 0323 as this proposed measure assesses achievement within a range of threshold values for adequate dialysis (see numerator and denominator descriptions). Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure. 5b.1 If competing, why superior or rationale for additive value:

	2704 Minimum Delivered Peritoneal Dialysis Dose
Steward	Centers for Medicare and Medicaid Services
Description	Percentage of all patient months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual)
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used. No data collection instrument provided -- No data dictionary
Level	Facility
Setting	Dialysis Facility
Time Window	The entire calendar month
Numerator Statement	Number of patient months in the denominator whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual)
Numerator Details	The numerator will be determined by counting the patient months in the denominator whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual)
Denominator Statement	To be included in the denominator for a particular month, the patient must have had ESRD for greater than 90 days, and must be assigned to the facility for the entire month.
Denominator Details	A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. SIMS/CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death and transplant is obtained from additional sources including the CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746) and the Social Security Death Master File. The denominator will include all PD patients who have had ESRD for greater than 90 days, and who have been assigned to the facility for the entire month.
Exclusions	Exclusions that are implicit in the denominator definition include 1) all patients who have had ESRD for <91 days and 2) patients who were not assigned to the facility for the entire month. There are no additional exclusions for this measure.
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion -- better quality = higher score
Algorithm	Denominator: For the reporting period, patients are included in the denominator if:

	2704 Minimum Delivered Peritoneal Dialysis Dose Patient modality is indicated as PD Patient has had ESRD for at greater than 90 days Patient has been assigned to the facility for the entire month Numerator: For the reporting period, patients are included in the numerator if The last Kt/v for the month is between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual) If no Kt/V value is reported for a given patient in a claim month, the most recent Kt /V value in the prior 3 months (adult) or 5 months (pediatrics) is applied to the calculation for that month. No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 0321 : Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute 0318 : Delivered Dose of Peritoneal Dialysis Above Minimum 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: Yes, the measure is harmonized with 0318 and the pediatric PD Kt/V measures. They all have the corresponding threshold ranges (numerator) and corresponding denominator populations. In the last maintenance cycle in 2011, 0318 was harmonized with 0321. Since then 0318 has been revised. This measure is not harmonized with 0321 as this proposed measure assesses achievement within a range of threshold values for adequate dialysis (see numerator and denominator descriptions). Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure. 5b.1 If competing, why superior or rationale for additive value: It is anticipated that this proposed measure will allow for assessment of a larger population given that it applies to both adult and pediatric PD patients. Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure.

	2705 Delivered Dose of Dialysis Above Minimum
Steward	Centers for Medicare and Medicaid Services
Description	Percentage of all patient months for patients whose average delivered dose of dialysis (either hemodialysis or peritoneal dialysis) met the specified threshold during the reporting period.
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used No data collection instrument provided
Level	Facility
Setting	Dialysis Facility
Time Window	The entire calendar month
Numerator Statement	Number of patient months in the denominator for patients whose delivered dose of dialysis met the specified ranges. The ranges are as follows: Hemodialysis (all ages): spKt/V >= 1.2 and spKt/V =< 5.0 (calculated from the last measurement of the month) Peritoneal dialysis (pediatric <18 years): spKt/V >= 1.8 and spKt/V =< 8.5 (dialytic + residual, measured within the past 6 months) Peritoneal dialysis (adult >= 18 years): spKt/V >= 1.7 and spKt/V =<8.5 (dialytic + residual, measured within the past 4 months)
Numerator Details	The numerator will be determined by counting the patient months for: 1) Hemodialysis patients in the denominator for whom "Kt/V Hemodialysis Method" is ´Daugirdas II´ OR ´UKM´ and spKt/V >= 1.2 and spKt/V =< 5.0 (calculated from the last measurement of the month); and, 2) Peritoneal dialysis patient in the denominator whose delivered peritoneal dialysis was a weekly Kt/Vurea between spKt/V = 1.7 and spKt/V<8.5 within past four months (Adult >= 18 years) or for pediatric patients between spKt/V >= 1.8 and spKt/V =< 8.5 within past 6 months (pediatric <18 years).
Denominator Statement	To be included in the denominator for a particular month, patients need to meet the following requirements that month: 1) Hemodialysis patients: Adult (>= 18 years old) patients who have had ESRD for greater than 90 days and dialyzing thrice weekly; pedia
Denominator	A treatment history file is the data source for the denominator calculation used for the

	2705 Delivered Dose of Dialysis Above Minimum
Details	analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. SIMS/CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death and transplant is obtained from additional sources including the CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746) and the Social Security Death Master File. The following patients will be included in the denominator for a particular month: 1) All adult hemodialysis patients who received dialysis greater than two and less than four times a week (adults, >= 18 years), and all pediatric in –center hemodialysis patients who received dialysis greater than two and less than five times a week (pediatric, <18 years), did not indicate frequent dialysis, and have had ESRD for greater than 90 days; 2) All peritoneal dialysis patients who have had ESRD for greater than 90 days. 3) All patients (both HD and PD) who are assigned to the facility for the entire month.
Exclusions	Exclusions that are implicit in the denominator definition include 1) for adult HD patients, those receiving dialysis less than 3 or greater than 4 times weekly 2) for pediatric HD patients, those receiving dialysis less than 3 or greater than 4 times weekly or who are on home hemodialysis 3) all patients who have had ESRD for <91 days 4) patients who were not assigned to the facility for the entire month
Exclusion details	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A
Stratification	N/A
Type Score	Rate/proportion – better quality = higher score
Algorithm	Denominator: For the reporting month, patients are included in the denominator if: Patient has had ESRD for greater than 90 days Patient is not on frequent dialysis (HD patients only - adults = 3 times/week, pediatrics = 3 or 4

	2705 Delivered Dose of Dialysis Above Minimum
	times a week) Patient is dialyzing in-center (pediatric HD only) Patient has been assigned to the facility for the entire month Numerator: For the reporting period, patients are included in the numerator if PD*: The last Kt/v for the month is between spKt/V = 1.7 (adult) or 1.8 (pediatric) and spKt/V< 8.5. (dialytic + residual) The last spKt/V for the month is between spKt/V> 1.2 and spKt/V<5.0 (using either Daugirdas II or UKM). *If no Kt/V value is reported for a given patient in a claim month, the most recent Kt /V value in the prior 4 months (adult) or 6 months (pediatric) is applied to the calculation for that month No diagram provided
Copyright / Disclaimer	5.1 Identified measures: 0249 : Delivered Dose of Hemodialysis Above Minimum 0321 : Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute 0318 : Delivered Dose of Peritoneal Dialysis Above Minimum 0323 : Adult Kidney Disease: Hemodialysis Adequacy: Solute 1423 : Minimum sp 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: Yes, the measure is harmonized with 0249, 0318, 1423, and the pediatric PD Kt/V measures. They all have the corresponding threshold ranges (numerator) and corresponding denominator populations. In the last maintenance cycle in 2011, 0318 was harmonized with 0321. Since then 0318 has been revised. The measure is not harmonized with 0321 and 0323 as this proposed measure assesses achievement within a range of threshold values for adequate dialysis (see numerator and denominator descriptions). Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure. 5b.1 If competing, why superior or rationale for additive value: It is anticipated that this proposed measure will allow for assessment of a larger population given that it applies to both adult and pediatric patients, and both HD and PD modality. Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure.

4

	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V
Steward	Centers for Medicare and Medicaid Services
Description	Percent of pediatric peritoneal dialysis patient-months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V = 1.8 and spKt/V< 8.5. (dialytic + residual)
Type	Outcome
Data Source	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used No data collection instrument provided -- No data dictionary
Level	Facility
Setting	Dialysis Facility
Time Window	The entire calendar month
Numerator Statement	Percent of pediatric peritoneal dialysis patient-months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.8 and spKt/V =< 8.5. (dialytic + residual)
Numerator Details	Eligible Kt/V values counted in the numerator are those in the range from spKt/V >= 1.7 to spKt/V =< 8.5 (dialytic + residual)within past six months. Values that will not be counted in the numerator are: Out of range spKt/V of <1.8 or spKt/V> 8.5); missing (no spKt/V reported). If RRF is to be incorporated in the Kt/V calculation, this will be calculated using the mean of urea and creatinine clearances derived from 24 hour urine collection. Total body water (V) should be estimated by one of the following pediatric specific V approximation methods: o Prediction equation based upon heavy water dilution Males: TBW=0.10 (ht x wt)0.68 – 0.37 (wt) Females: TBW=0.14 (ht x wt) 0.64 – 0.35 (wt) o Simplified V estimating equations derived from the above prediction equations: Males: TBW=20.88 x BSA – 4.29 Females: TBW=16.92 x BSA – 1.81 o Sex specific normograms derived from the above prediction equations and published in KDOQI PD guidelines for the pediatric population update from 2006.o Prediction equation based upon heavy water dilution Males: TBW=0.10 (ht x wt)0.68 – 0.37 (wt) Females: TBW=0.14 (ht x wt) 0.64 – 0.35 (wt)

	~~2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V~~
	~~o Simplified V estimating equations derived from the above prediction equations:~~ ~~Males: TBW=20.88 x BSA – 4.29~~ ~~Females: TBW=16.92 x BSA – 1.81~~ ~~o Sex specific normograms derived from the above prediction equations and published in KDOQI PD guidelines for the pediatric population update from 2006.~~
~~Denominator Statement~~	~~To be included in the denominator for a particular month the patient must have had ESRD for greater than 90 days, must be <18 years old, and must be assigned to that facility for the entire month.~~
~~Denominator Details~~	~~A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. SIMS/CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death and transplant is obtained from additional sources including the CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746) and the Social Security Death Master File.~~ ~~The denominator is defined as counting the patient months of pediatric PD patients who have had ESRD for greater than 90 days, and are assigned to that facility for the entire month.~~
~~Exclusions~~	~~Exclusions that are implicit in the denominator definition include~~ ~~1) all patients >=18 years old~~ ~~2) all patients who have had ESRD for <91 days, and~~ ~~3) patients who have not been in the facility for the entire reporting month~~ ~~There are no additional exclusions for this measure.~~
~~Exclusion details~~	~~N/A~~
~~Risk Adjustment~~	~~No risk adjustment or risk stratification~~ ~~N/A~~ ~~Provided in response box S.15a~~
~~Stratification~~	~~N/A~~
~~Type Score~~	~~Rate/proportion – better quality = higher score~~

	~~2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V~~
~~Algorithm~~	~~Denominator: For the reporting period, patients are included in the denominator if:~~ ~~Patient modality is indicated as PD~~ ~~Patient age as of the reporting month is less than 18 years~~ ~~Patient has had ESRD for greater than 90 days~~ ~~Patient has been assigned to the facility for the entire month~~ ~~Numerator: For the reporting period, patients are included in the numerator if~~ ~~The last spKt/V for the month is between spKt/V> 1.8 and spKt/V<8.5~~ ~~If no Kt/V value is reported for a given patient in a claim month, the most recent Kt /V value in the prior 5 months is applied to the calculation for that month. No diagram provided~~
~~Copyright / Disclaimer~~	~~5.1 Identified measures:~~ ~~5a.1 Are specs completely harmonized?~~ ~~5a.2 If not completely harmonized, identify difference, rationale, impact:~~ ~~5b.1 If competing, why superior or rationale for additive value:~~

7 ## Appendix G: Related and Competing Measures

8 **Comparison of NQF #0256, NQF #0257, and NQF #0251 ~~and NQF #2594~~**

	0256 Minimizing Use of Catheters as Chronic Dialysis Access	0257 Maximizing Placement of Arterial Venous Fistula (AVF)	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
Steward	Centers for Medicare & Medicaid Services	Centers for Medicare & Medicaid Services	Kidney Care Quality Alliance (KCQA)
Description	Percentage of patient months on maintenance hemodialysis during the last HD treatment of month with a chronic catheter continuously for 90 days or longer prior to the last hemodialysis session.	Percentage of patient months for patients on maintenance hemodialysis during the last HD treatment of month using an autogenous AV fistula with two needles.	Percentage of end stage renal disease (ESRD) patients aged 18 years and older receiving hemodialysis during the 12-month reporting period and on dialysis >90 days who: 1. have a functional autogenous AVF (defined as two needles used or a single-needle d
Type	Outcome	Outcome	Process
Data Source	Administrative claims, Electronic Clinical Data CROWNWeb is the primary data source. However, this measure can be collected through Medicare claims data (since July 2010) and Fistula First Breakthrough Initiative data (though the definition of the measure is slightly different). The measure has been publically reported using claims data since 2013. No data collection instrument provided No data dictionary	Administrative claims, Electronic Clinical Data This measure is primarily designed for collection in CROWNWeb but can also be calculated from Fistula First and Medicare claims data. The measure has been publically reported using Medicare claims data since 2013. No data collection instrument provided No data dictionary	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records Data elements for the measure can be collected via the CROWNWeb Electronic Data Interchange, available at URL: http://www.projectcrownweb.org/crown/index.php. No data collection instrument provided Attachment KCQA0251_DataDictionary02-26-15.pdf
Level	Facility	Facility	Clinician : Individual
Setting	Dialysis Facility	Dialysis Facility	Ambulatory Care : Clinician

	0256 Minimizing Use of Catheters as Chronic Dialysis Access	0257 Maximizing Placement of Arterial Venous Fistula (AVF)	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
			Office/Clinic, Dialysis Facility
Time Window	One month	One month	12 months.
Numerator Statement	Number of patient months in the denominator who were continuously using a chronic catheter as hemodialysis access for 90 days or longer prior to the last hemodialysis session during the month.	Number of patient months in the denominator who were using an autogenous AV fistula with two needles at the last HD treatment of month	Number of patients from the denominator who: 1. have a functional autogenous AVF (defined as two needles used or a single-needle device) (computed and reported separately); or 2. have a functional AV graft (computed and reported separately); or 3. have a catheter but have been seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for a functional autogenous AVF (defined as two needles used or a single needle device) or AV graft at least once during the 12-month reporting period (computed and reported separately). Reporting should be stratified by incident versus prevalent patients, as defined by USRDS.
Numerator Details	The numerator will be determined by counting the patient-months in the denominator who were on	The numerator will be determined by counting the patient months in the denominator who were using an	Include in the numerator all patients from the denominator who meet the following criteria:

	0256 Minimizing Use of Catheters as Chronic Dialysis Access	0257 Maximizing Placement of Arterial Venous Fistula (AVF)	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
	maintenance hemodialysis with a chronic catheter continuously for 90 days or longer prior to the last hemodialysis session of the month.	AV fistula with two needles as the means of access.	1. Access type = Functional autogenous AVF (defined as 2 needles used or single-needle device) (NOTE: 1 needle used in a 2-needle device is NOT acceptable) OR 2. Access type = • Functional AV graft OR • AVF combined with AV graft OR • Catheter (alone or combined with an AVF or AV graft) AND a. Patient seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for an AVF or AV graft during the 12-month reporting period AND b. Facility medical records contain the following types of documentation of the surgical evaluation: • A note or letter prepared by the primary nephrologist OR • A note or letter prepared by the vascular surgeon, other qualified

	0256 Minimizing Use of Catheters as Chronic Dialysis Access	0257 Maximizing Placement of Arterial Venous Fistula (AVF)	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
			surgeon, or interventional nephrologist trained in the primary placement of vascular access OR • A note prepared by facility personnel AND • Date of the surgical evaluation: (MM/YYYY) AND • If permanent access was not placed, the reason for this decision.
Denominator Statement	Adult hemodialysis patients who have had ESRD for greater than 90 days as of of the first day of the reporting month.	For both CROWNWeb and Claims data, the denominator will include all hemodialysis patients who are at least 18 years old and have had ESRD for greater than 90 days as of the first day of the reporting month.	All ESRD patients aged 18 years and older receiving hemodialysis during the 12-month reporting period and on dialysis for greater than 90 days. This measure includes both in-center and home hemodialysis patients.
Denominator Details	The patient's age will be determined by subtracting the patient's date of birth from the first day of the reporting month. 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	For both CROWNWeb and Claims data, the denominator will include all hemodialysis patients who are at least 18 years old and have had ESRD for at least 90 days as of the first day of the reporting month.	Include in the denominator all patients for a given nephrologist who meet the following criteria in the most recent month of the 12-month study period and who are not enrolled in hospice: 1. Diagnosis = ESRD AND 2. Primary type of dialysis = hemodialysis or home hemodialysis

	0256 Minimizing Use of Catheters as Chronic Dialysis Access	0257 Maximizing Placement of Arterial Venous Fistula (AVF)	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
	"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' or 'Home' on the last day of the study period, AND "Date Regular Chronic Dialysis Began" is prior to the first day of the study period. For both CROWNWeb and Claims data, the denominator will include all hemodialysis patients who are at least 18 years old and have had ESRD for greater than 90 days as of the first day of the reporting month.		AND 3. Age = >/= 18 years AND 4. Time on dialysis = >90 days
Exclusions	Exclusions that are implicit in the denominator definition include pediatric patients (<18 years old), and acute hemodialysis patients (hemodialysis patients who have had ESRD for less than 91 days). There are no additional exclusions for this measure.	Exclusions that are implicit in the denominator definition include pediatric patients (<18 years old) and acute hemodialysis patients (hemodialysis patients who have had ESRDS for less than 91 days). There are no additional exclusions for this measure.	None.
Exclusion Details	See above denominator details.	N/A	Not applicable.
Risk Adjustment	No risk adjustment or risk stratification	No risk adjustment or risk stratification	No risk adjustment or risk stratification

	0256 Minimizing Use of Catheters as Chronic Dialysis Access	0257 Maximizing Placement of Arterial Venous Fistula (AVF)	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
	N/A	N/A	Not applicable.
Stratification	N/A	N/A	Not applicable.
Type Score	Rate/proportion better quality = lower score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score
Algorithm	For this measure calculation, the numerator will be divided by the denominator.Calculation of the numerator and denominator is described below. The denominator will include all patients at least 18 years old who are determined to be maintenance hemodialysis patients. The patient's age will be determined by subtracting the patient's date of birth from the first day of the reporting month. 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	For this measure calculation, the numerator will be divided by the denominator. Calculation of the numerator and denominator is described below. The denominator will include all patients at least 18 years old who are determined to be maintenance hemodialysis patients. The patient's age will be determined by subtracting the patient's date of birth from the first day of the reporting month. 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	The measure score is calculated by dividing the total number of patients included in the numerator by the total number of patients included in the denominator. IDENTIFICATION OF DENOMINATOR CASES To identify patients in the denominator, first calculate the following: • Patient age = (Date of first day of most recent month of study period)—(Patient's Date of Birth) • Patient time on dialysis = (Date of first day of most recent month of study period)—(Patient's Date Regular Chronic Dialysis Began) Include in the denominator all patients for a given nephrologist who meet the following criteria in the most recent month of the 12-month study period and who are not enrolled in hospice: 1. Diagnosis = ESRD AND

	0256 Minimizing Use of Catheters as Chronic Dialysis Access	0257 Maximizing Placement of Arterial Venous Fistula (AVF)	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
	Treatment" = 'HD', AND "Primary Dialysis Setting" ='Dialysis Facility/Center' or 'Home' 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 patient months in the denominator who were on maintenance hemodialysis with a chronic catheter continuously for 90 days or longer prior to the last hemodialysis session of the month. For CROWNWeb data, the numerator is defined as "Access_Type_id" in (19,20) while "19" means Catheter only and "20" means Port access only AND "Date Access Type for Dialysis Changed" is blank or, if populated, is more than 90 days prior to the last hemodialysis session of the month. For Claims data, we use data prior to reporting period, a 90 day lookback period (e.g., October – December 2012 for January 2013 reporting period) to determine catheter history AND vascular access type should satisfy (vas_cat='Y' and	Treatment" = 'HD', AND "Primary Dialysis Setting" ='Dialysis Facility/Center' or 'Home' 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 denominator will include all patients greater than or equal to 18 years old who are determined to be in-center hemodialysis, or home hemodialysis patients. The numerator will be determined by counting the patient months in the denominator who were on maintenance hemodialysis using an AV fistula with two needles as the means of access. The numerator will be determined by counting the patients in the denominator for whom "Access Type for Dialysis" = "autogenous AV fistula with two needles" at the last treatment of the month. In CROWNWeb, a patient is counted in the numerator if "Access_type_id" in (14,16) at the last treatment of the month where "14" represents AV fistula only (with 2 needles) and "16" represents AV Fistula combined with a Catheter; while in Medical	2. Primary type of dialysis = hemodialysis or home hemodialysis AND 3. Age = >/=18 years AND 4. Time on dialysis = >90 days IDENTIFICATION OF NUMERATOR CASES Include in the numerator all patients from the denominator who meet the following criteria: 1. Access type = Functional autogenous AVF (defined as 2 needles used or single-needle device) (NOTE: 1 needle used in a 2-needle device is NOT acceptable) OR 1. Access type = Functional AV graft OR 1. Access type = AVF combined with AV graft OR 1. Access type (select one): • AV fistula with a catheter • AV graft combined with a catheter • Catheter • Other/unknown

	0256 Minimizing Use of Catheters as Chronic Dialysis Access	0257 Maximizing Placement of Arterial Venous Fistula (AVF)	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
	art_graft=' ' and art_fistula=' ')). No diagram provided	Claims data, a patient is included if (vas_cat=' ' and art_graft=' ' and art_fistula='Y') OR (vas_cat='Y' and art_graft=' ' and art_fistula='Y') at the last treatment of the month. No diagram provided	AND 2. Patient referred to a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for an AVF or AV graft during the 12-month reporting period AND 3. Patient seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for an AVF or AV graft during the 12-month reporting period AND 4. Facility medical records contain the following types of documentation of the surgical evaluation: • A note or letter prepared by the primary nephrologist OR • A note or letter prepared by the vascular surgeon, other qualified surgeon, or interventional nephrologist trained in the primary placement of vascular

	0256 Minimizing Use of Catheters as Chronic Dialysis Access	0257 Maximizing Placement of Arterial Venous Fistula (AVF)	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
			access OR • A note prepared by facility personnel AND • Date of the surgical evaluation: (MM/YYYY) AND • If permanent access was not placed, the reason for this decision MEASURE SCORE CALCULATION Performance Rate = ([Patients with a functional AVF] + [Patients with a functional AV graft] + [Patients with a catheter who have been seen/evaluated by a vascular surgeon, other surgeon qualified in the area of vascular access, or interventional nephrologist trained in the primary placement of vascular access for a functional AVF or AV graft during the 12-month reporting period WITH documentation of the evaluation in the facility medical records]) ÷ ([Total ESRD patients >/=18 years of age receiving HD during the 12-month reporting period and on dialysis >90 days] – Patients enrolled in hospice]) Available in attached appendix at A.1

	0256 Minimizing Use of Catheters as Chronic Dialysis Access	0257 Maximizing Placement of Arterial Venous Fistula (AVF)	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
Submission items	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:	5.1 Identified measures: 0256 : Minimizing Use of Catheters as Chronic Dialysis Access 0257 : Maximizing Placement of Arterial Venous Fistula (AVF) 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: NQF 0256 and 0257 focus on reducing catheter use exclusively in favor of AVF use. This construct ignores and thus disincentivizes use of AV grafts, which are oftentimes the most clinically appropriate access and are selected with and in the best interest of the patient, and may ultimately have a negative clinical impact. 5b.1 If competing, why superior or rationale for additive value: The KCQA measure acknowledges that AV grafts are frequently an appropriate clinical decision while continuing to disincentivize use of central venous catheters. Additionally, the measure is specified for use at the clinician, rather than the facility, level, as

	0256 Minimizing Use of Catheters as Chronic Dialysis Access	0257 Maximizing Placement of Arterial Venous Fistula (AVF)	0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement
			the clinical responsibility for vascular access decisionmaking lies primarily with the physician.

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11 **Comparison of NQF #0318, NQF #0321, NQF #2706 and NQF #2704**

	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose
Steward	Centers for Medicare & Medicaid Services	Renal Physicians Association	Centers for Medicare and Medicaid Services	Centers for Medicare and Medicaid Services
Description	Percentage of all patient months for patients = 18 whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 and spKt/V =< 8.5. (dialytic + residual)	Percentage of patients aged 18 years and older with a diagnosis of End Stage Renal Disease (ESRD) receiving peritoneal dialysis who have a total Kt/V >= 1.7 per week measured once every 4 months	Percent of pediatric peritoneal dialysis patient-months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V = 1.8 and spKt/V< 8.5. (dialytic + residual)	Percentage of all patient months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual)
Type	Outcome	Outcome	Outcome	Outcome
Data Source	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used No data collection instrument provided No data dictionary	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry N/A Attachment AMA-PCPI_AKID-11_PeritonealAdequacy_eSPEC-635289364639799938.pdf	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used No data collection instrument provided No data dictionary	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used. No data collection instrument provided No data dictionary
Level	Facility	Clinician : Group/Practice, Clinician : Individual, Clinician : Team	Facility	Facility
Setting	Dialysis Facility	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary, Rest Home, or Custodial Care Services	Dialysis Facility	Dialysis Facility
Time	The entire calendar month	three times (at least 4 months	The entire calendar month	The entire calendar month

	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose
Window		apart) during the 12 consecutive month measurement period		
Numerator Statement	Number of patient months in the denominator whose delivered peritoneal dialysis was a weekly Kt/Vurea of between spKt/V >= 1.7 and spKt/V =< 8.5 (dialytic + residual)	Patients who have a total Kt/V >= 1.7 per week measured once every 4 months	Percent of pediatric peritoneal dialysis patient-months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.8 and spKt/V =< 8.5. (dialytic + residual)	Number of patient months in the denominator whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual)
Numerator Details	Eligible Kt/V values counted in the numerator are those in the range from spKt/V >= 1.7 to spKt/V =< 8.5 (dialytic + residual) within past four months. Values that will not be counted in the numerator are: Out of range spKt/V of <1.7 or spKt/V> 8.5); missing (no spKt/V reported).	Numerator Definition: Total Kt/V includes residual kidney function and equals peritoneal dialysate Kt/V plus renal Kt/V During the NQF Maintenance Process, an EHR specification was provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: Report the quality data code designated for this numerator: G8718 - Total Kt/V greater than or equal to 1.7 per week (Total clearance of urea [Kt]/volume [V])	Eligible Kt/V values counted in the numerator are those in the range from spKt/V >= 1.7 to spKt/V =< 8.5 (dialytic + residual)within past six months. Values that will not be counted in the numerator are: Out of range spKt/V of <1.8 or spKt/V> 8.5); missing (no spKt/V reported). If RRF is to be incorporated in the Kt/V calculation, this will be calculated using the mean of urea and creatinine clearances derived from 24 hour urine collection. Total body water (V) should be estimated by one of the following pediatric specific V approximation methods: o Prediction equation based upon heavy water dilution Males: TBW=0.10 (ht x wt)0.68 – 0.37 (wt) Females: TBW=0.14 (ht x wt) 0.64 – 0.35 (wt) o Simplified V estimating	The numerator will be determined by counting the patient months in the denominator whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual)

	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose
			equations derived from the above prediction equations: Males: TBW=20.88 x BSA – 4.29 Females: TBW=16.92 x BSA – 1.81 o Sex specific normograms derived from the above prediction equations and published in KDOQI PD guidelines for the pediatric population update from 2006.o Prediction equation based upon heavy water dilution Males: TBW=0.10 (ht x wt)0.68 – 0.37 (wt) Females: TBW=0.14 (ht x wt) 0.64 – 0.35 (wt) o Simplified V estimating equations derived from the above prediction equations: Males: TBW=20.88 x BSA – 4.29 Females: TBW=16.92 x BSA – 1.81 o Sex specific normograms derived from the above prediction equations and published in KDOQI PD guidelines for the pediatric population update from 2006.	
Denominator Statement	To be included in the denominator for a particular month the patient must have had ESRD for greater than 90 days, must be >=18 years old, and must be assigned to that	All patients aged 18 years and older with a diagnosis of ESRD receiving peritoneal dialysis	To be included in the denominator for a particular month the patient must have had ESRD for greater than 90 days, must be <18 years old, and must be assigned to that facility for the	To be included in the denominator for a particular month, the patient must have had ESRD for greater than 90 days, and must be assigned to the facility for the entire month.

	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose
	facility for the entire month.		entire month.	
Denominator Details	A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. SIMS/CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death and transplant is obtained from additional sources including the CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746) and the Social Security Death Master File. The denominator is defined as	During the NQF Maintenance Process, an EHR specification was provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: Patients aged >= 18 years AND Diagnosis for ESRD (ICD-9-CM) [for use 1/1/2014-9/30/2014]: 585.6 Diagnosis for ESRD (ICD-10-CM) [for use 10/01/2014-12/31/2014]: N18.6 AND Encounter for Dialysis and Dialysis Catheter Care (ICD-9-CM) [for use 1/1/2014-9/30/2014]: V56.2, V56.32, V56.8 Encounter for Dialysis and Dialysis Catheter Care (ICD-10-CM) [for use 10/01/2014-12/31/2014]: Z49.02, Z49.32 AND Patient encounter during the reporting period (CPT): 90945, 90947, 90957, 90958, 90959, 90960, 90961, 90962, 90965, 90966, 90969, 90970	A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. SIMS/CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death and transplant is obtained from additional sources including the CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746) and the Social Security Death Master File. The denominator is defined as	A treatment history file is the data source for the denominator calculation used for the analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. SIMS/CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death and transplant is obtained from additional sources including the CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746) and the Social Security Death Master File. The denominator will include all

	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose
	counting the patient months of PD patients who have had ESRD for greater than 90 days, and assigned to that facility for the entire month.		counting the patient months of pediatric PD patients who have had ESRD for greater than 90 days, and are assigned to that facility for the entire month.	PD patients who have had ESRD for greater than 90 days, and who have been assigned to the facility for the entire month.
Exclusions	Exclusions that are implicit in the denominator definition include 1) pediatric patients (<18 years old) 2) all patients who have had ESRD for <91 days, and 3) patients who have not been in the facility for the entire month. There are no additional exclusions for this measure.	There are no denominator exceptions for this measure.	Exclusions that are implicit in the denominator definition include 1) all patients >=18 years old 2) all patients who have had ESRD for <91 days, and 3) patients who have not been in the facility for the entire reporting month There are no additional exclusions for this measure.	Exclusions that are implicit in the denominator definition include 1) all patients who have had ESRD for <91 days and 2) patients who were not assigned to the facility for the entire month. There are no additional exclusions for this measure.
Exclusion Details	None.	N/A	N/A	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A Provided in response box S.15a	Other No risk adjustment or risk stratification. This measure is not risk adjusted.	No risk adjustment or risk stratification N/A Provided in response box S.15a	No risk adjustment or risk stratification N/A
Stratification	N/A	We encourage the results of this measure to be stratified by race, ethnicity, administrative sex, and primary language.	N/A	N/A
Type Score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score
Algorithm	Denominator: For the reporting period, patients are included in the denominator if: Patient modality is indicated as PD	Calculation algorithm is included in field S.2b. Data Dictionary Code Table.	Denominator: For the reporting period, patients are included in the denominator if: Patient modality is indicated as PD	Denominator: For the reporting period, patients are included in the denominator if: Patient modality is indicated as PD

	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose
	Patient age as of the reporting month is at least 18 years Patient has had ESRD for greater than 90 days Patient has been assigned to the facility for the entire month Numerator: For the reporting period, patients are included in the numerator if The last spKt/V for the month is between spKt/V >= 1.7 and spKt/V =<8.5 If no Kt/V value is reported for a given patient in a month, the most recent Kt/V value in the prior 3 months is applied to the calculation for that month. No diagram provided		Patient age as of the reporting month is less than 18 years Patient has had ESRD for greater than 90 days Patient has been assigned to the facility for the entire month Numerator: For the reporting period, patients are included in the numerator if The last spKt/V for the month is between spKt/V> 1.8 and spKt/V<8.5 If no Kt/V value is reported for a given patient in a claim month, the most recent Kt /V value in the prior 5 months is applied to the calculation for that month. No diagram provided	Patient has had ESRD for at greater than 90 days Patient has been assigned to the facility for the entire month Numerator: For the reporting period, patients are included in the numerator if The last Kt/v for the month is between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual) If no Kt/V value is reported for a given patient in a claim month, the most recent Kt /V value in the prior 3 months (adult) or 5 months (pediatrics) is applied to the calculation for that month. No diagram provided
Submission items	5.1 Identified measures: 0321 : Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: In the last maintenance cycle in 2011, 0318 was harmonized with 0321. Since then 0318 has been revised. The measure is not harmonized with	5.1 Identified measures: 0318 : Delivered Dose of Peritoneal Dialysis Above Minimum 5a.1 Are specs completely harmonized? Yes 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value: Our measure is specified at the	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:	5.1 Identified measures: 0321 : Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute 0318 : Delivered Dose of Peritoneal Dialysis Above Minimum 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: Yes, the measure is harmonized with

	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose
	0321 as this proposed measure assesses achievement within a range of threshold values for adequate dialysis (see numerator and denominator descriptions). Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure. 5b.1 If competing, why superior or rationale for additive value: It is anticipated that this proposed measure will allow for assessment of a larger population given the denominator revision. Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure.	clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program).		0318 and the pediatric PD Kt/V measures. They all have the corresponding threshold ranges (numerator) and corresponding denominator populations. In the last maintenance cycle in 2011, 0318 was harmonized with 0321. Since then 0318 has been revised. This measure is not harmonized with 0321 as this proposed measure assesses achievement within a range of threshold values for adequate dialysis (see numerator and denominator descriptions). Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure. 5b.1 If competing, why superior or rationale for additive value: It is anticipated that this proposed measure will allow for assessment of a larger population given that it applies to both adult and pediatric PD patients. Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure.

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14 **Comparison of NQF #1667 and NQF #1424**

	1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL	1424 Monthly Hemoglobin Measurement for Pediatric Patients
Steward	Renal Physicians Association	Centers for Medicare & Medicaid Services
Description	Percentage of calendar months within a 12-month period during which patients aged 17 years and younger with a diagnosis of End Stage Renal Disease (ESRD) receiving hemodialysis or peritoneal dialysis have a hemoglobin level < 10 g/dL	Percentage of patient months of pediatric (less than 18 years) in-center hemodialysis, home hemodialysis, and peritoneal dialysis patients who have monthly measures for hemoglobin during the reporting period.
Type	Outcome	Process
Data Source	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry N/A Available at measure-specific web page URL identified in S.1 Attachment AMA-PCPI_PKID-3_Hgblessthan10-635289374004906657.pdf	Electronic Clinical Data CROWNWeb No data collection instrument provided No data dictionary
Level	Clinician : Group/Practice, Clinician : Individual, Clinician : Team	Facility
Setting	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary, Rest Home (eg, Assisted Living Facility), or Custodial Care Services	Dialysis Facility
Time Window	Each calendar month during the 12 consecutive month measurement period	The entire calendar month.
Numerator Statement	Calendar months during which patients have a hemoglobin level < 10 g/dL	Number of patient months of pediatric (less than 18 years old) in-center hemodialysis, home hemodialysis, and peritoneal dialysis patients with a measurement of hemoglobin during the reporting period. The hemoglobin value reported for the end of each reporting month (end-of-month hemoglobin) is used for the calculation.
Numerator Details	Numerator Detail: The hemoglobin values used for this measure should be the most recent (last) hemoglobin value recorded for each calendar month During the NQF Maintenance Process, EHR Specifications were provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Claims/Administrative:	The numerator will be determined by counting all patient months in the denominator that include values for 'Hemoglobin' and 'Hemoglobin Collection Date.' A valid hemoglobin value is defined as between 5-20 g/dL

	1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL	1424 Monthly Hemoglobin Measurement for Pediatric Patients
	G8973: Most recent hemoglobin (Hgb) level < 10 g/dL	
Denominator Statement	All calendar months during which patients aged 17 years and younger with a diagnosis of ESRD are receiving hemodialysis or peritoneal dialysis	All patient months for pediatric (less than 18 years old) in-center hemodialysis, home hemodialysis, and peritoneal dialysis patients under the care of the dialysis facility for the entire reporting month.
Denominator Details	During the NQF Maintenance Process, EHR Specifications were provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: Patients aged <= 17 years AND Diagnosis for ESRD (ICD-9-CM) [for use 1/1/2014-9/30/2014]: 585.6 Diagnosis for ESRD (ICD-10-CM) [for use 10/01/2014-12/31/2014]: N18.6 AND Patient encounter during the reporting period (CPT): 90945, 90947, 90951, 90952, 90953, 90954, 90955, 90956, 90957, 90958, 90959, 90963, 90964, 90965, 90967, 90968, 90969	Patients are included in the facility calculation if "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. The patient's age will be determined by subtracting the patient's date of birth from the first day of the reporting month. All patients under the facility's care for the entire calendar month and are less than 18 years of age will be included in the denominator.
Exclusions	Documentation of medical reason(s) for patient having a hemoglobin level < 10 g/dL (eg, patients who have non-renal etiologies of anemia [eg, sickle cell anemia or other hemoglobinopathies, hypersplenism, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy, post-operative bleeding, active bloodstream or peritoneal infection], other medical reasons)	Exclusions that are implicit in the denominator definition include all patients >=18 years and those who have not been in the facility the entire reporting month (transient patients). There are no additional exclusions for this measure.
Exclusion Details	The PCPI exception methodology uses three categories of reasons for which a patient may be removed from the denominator of an individual measure. These measure exception categories are not uniformly relevant across all measures; for each measure, there must be a clear rationale to permit an exception for a medical, patient, or system reason. Examples are provided in the measure exception language of instances that may constitute an exception and are intended to serve as a guide to clinicians. For measure 1667, exceptions may include medical reason(s) for patient having a hemoglobin level < 10g/dL (eg, patients who have non-renal etiologies of anemia [eg, sickle cell anemia or other	None.

	1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL	1424 Monthly Hemoglobin Measurement for Pediatric Patients
	hemoglobinopathies, hypersplenism, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy, postoperative bleeding, active bloodstream or peritoneal infection], other medical reasons). Where examples of exceptions are included in the measure language, value sets for these examples are developed and included in the eSpecifications. Although this methodology does not require the external reporting of more detailed exception data, the PCPI recommends that physicians document the specific reasons for exception in patients' medical records for purposes of optimal patient management and audit-readiness. The PCPI also advocates the systematic review and analysis of each physician's exceptions data to identify practice patterns and opportunities for quality improvement. Additional details by data source are as follows: During the NQF Maintenance Process, EHR Specifications were provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: G8975: Documentation of medical reason(s) for patient having a hemoglobin level < 10 g/dL (e.g., patients who have non-renal etiologies of anemia (e.g., sickle cell anemia or other hemoglobinopathies, hypersplenism, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy, postoperative bleeding, active bloodstream or peritoneal infection), other medical reasons)	
Risk Adjustment	Other We account for risk adjustment by inclusion of the exceptions for this measure. Exceptions for this measure are listed in field S.10. Denominator Exclusions.	No risk adjustment or risk stratification N/A
Stratification	We encourage the results of this measure to be stratified by race, ethnicity, administrative sex, and primary language.	N/A
Type Score	Rate/proportion better quality = lower score	Rate/proportion better quality = higher score
Algorithm	Calculation algorithm is included in the attachment in field S.2b. Data Dictionary Code Table.	Patients are included in the facility calculation if "Admit Date" to the specified facility is prior or equal to the first day of the study period,

	1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL	1424 Monthly Hemoglobin Measurement for Pediatric Patients
	To calculate performance rates: 1) Find the patients who meet the initial patient population (ie, the general group of patients that a set of performance measures is designed to address). 2) From the patients within the initial patient population criteria, find the patients who qualify for the denominator (ie, the specific group of patients for inclusion in a specific performance measure based on defined criteria). Note: in some cases the initial patient population and denominator are identical. 3) From the patients within the denominator, find the patients who qualify for the Numerator (ie, the group of patients in the denominator for whom a process or outcome of care occurs). Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator 4) From the patients who did not meet the numerator criteria, determine if the physician has documented that the patient meets any criteria for exception when exceptions have been specified [for this measure: medical reason(s) for patient having a hemoglobin level < 10g/dL (eg, patients who have non-renal etiologies of anemia [eg, sickle cell anemia or other hemoglobinopathies, hypersplenism, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy, postoperative bleeding, active bloodstream or peritoneal infection], other medical reasons)]. If the patient meets any exception criteria, they should be removed from the denominator for performance calculation. --Although the exception cases are removed from the denominator population for the performance calculation, the exception rate (ie, percentage with valid exceptions) should be calculated and reported along with performance rates to track variations in care and highlight possible areas of focus for QI. If the patient does not meet the numerator and a valid exception is not present, this case represents a quality failure.	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. The patient's age will be determined by subtracting the patient's date of birth from the first day of the reporting month. All in-center HD, home HD, and PD patients under the facility's care for the entire calendar month and are less than 18 years of age will be included in the denominator. The numerator will be determined by counting all patients in the denominator who have values for 'Hemoglobin' and 'Hemoglobin Collection Date.' No diagram provided
Submission items	5.1 Identified measures: 1424 : Monthly Hemoglobin Measurement for Pediatric Patients	5.1 Identified measures: 5a.1 Are specs completely harmonized?

	1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL	1424 Monthly Hemoglobin Measurement for Pediatric Patients
	5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program). 5b.1 If competing, why superior or rationale for additive value: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program).	5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:

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16 **Comparison of NQF #1660 and NQF #1667**

	1660 ESRD Patients Receiving Dialysis: Hemoglobin Level <9g/dL	1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL
Steward	Renal Physicians Association	Renal Physicians Association
Description	Percentage of calendar months within a 12-month period during which patients aged 18 years and older with a diagnosis of ESRD who are receiving hemodialysis or peritoneal dialysis have a Hemoglobin level <9g/dL	Percentage of calendar months within a 12-month period during which patients aged 17 years and younger with a diagnosis of End Stage Renal Disease (ESRD) receiving hemodialysis or peritoneal dialysis have a hemoglobin level < 10 g/dL
Type	Outcome	Outcome
Data Source	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records, Electronic Clinical Data : Registry N/A Attachment ESRD_Patients_receiving_dialysis_Hbg__less_than_9g.pdf	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry N/A Available at measure-specific web page URL identified in S.1 Attachment AMA-PCPI_PKID-3_Hgblessthan10-635289374004906657.pdf
Level	Clinician : Group/Practice, Clinician : Individual, Clinician : Team	Clinician : Group/Practice, Clinician : Individual, Clinician : Team
Setting	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary, Rest Home, or Custodial Care Services	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary, Rest Home (eg, Assisted Living Facility), or Custodial Care Services
Time Window	Once during the measurement period	Each calendar month during the 12 consecutive month measurement period
Numerator Statement	Calendar months during which patients have a Hemoglobin level <9g/dL* *The hemoglobin values used for this measure should be a most recent (last) hemoglobin value recorded for each calendar month	Calendar months during which patients have a hemoglobin level < 10 g/dL
Numerator Details	See attached for EHR specifications. For Claims/Administrative: Report CPT II code 3XXXF: Hemoglobin level < 9 g/dL	Numerator Detail: The hemoglobin values used for this measure should be the most recent (last) hemoglobin value recorded for each calendar month During the NQF Maintenance Process, EHR Specifications were provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Claims/Administrative:

	1660 ESRD Patients Receiving Dialysis: Hemoglobin Level <9g/dL	1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL
		G8973: Most recent hemoglobin (Hgb) level < 10 g/dL
Denominator Statement	All calendar months during which patients aged 18 years and older with a diagnosis of ESRD are receiving hemodialysis or peritoneal dialysis	All calendar months during which patients aged 17 years and younger with a diagnosis of ESRD are receiving hemodialysis or peritoneal dialysis
Denominator Details	See attached for EHR Specifications. For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, CPT)	During the NQF Maintenance Process, EHR Specifications were provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: Patients aged <= 17 years AND Diagnosis for ESRD (ICD-9-CM) [for use 1/1/2014-9/30/2014]: 585.6 Diagnosis for ESRD (ICD-10-CM) [for use 10/01/2014-12/31/2014]: N18.6 AND Patient encounter during the reporting period (CPT): 90945, 90947, 90951, 90952, 90953, 90954, 90955, 90956, 90957, 90958, 90959, 90963, 90964, 90965, 90967, 90968, 90969
Exclusions	Documentation of medical reason(s) for patient having a Hemoglobin level <9g/dL (eg, patients who have non-renal etiologies of anemia [eg, sickle cell anemia or other hemoglobinopathies, multiple myeloma, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy], other medical reasons)	Documentation of medical reason(s) for patient having a hemoglobin level < 10 g/dL (eg, patients who have non-renal etiologies of anemia [eg, sickle cell anemia or other hemoglobinopathies, hypersplenism, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy, post-operative bleeding, active bloodstream or peritoneal infection], other medical reasons)
Exclusion Details	Append modifier to CPT-II code 3XXXF-1P	The PCPI exception methodology uses three categories of reasons for which a patient may be removed from the denominator of an individual measure. These measure exception categories are not uniformly relevant across all measures; for each measure, there must be a clear rationale to permit an exception for a medical, patient, or system reason. Examples are provided in the measure exception language of instances that may constitute an exception and are intended to serve as a guide to clinicians. For measure 1667, exceptions may include medical reason(s) for patient having a hemoglobin level < 10g/dL (eg, patients who have non-renal etiologies of anemia [eg, sickle cell anemia or other

	1660 ESRD Patients Receiving Dialysis: Hemoglobin Level <9g/dL	1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL
		hemoglobinopathies, hypersplenism, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy, postoperative bleeding, active bloodstream or peritoneal infection], other medical reasons). Where examples of exceptions are included in the measure language, value sets for these examples are developed and included in the eSpecifications. Although this methodology does not require the external reporting of more detailed exception data, the PCPI recommends that physicians document the specific reasons for exception in patients' medical records for purposes of optimal patient management and audit-readiness. The PCPI also advocates the systematic review and analysis of each physician's exceptions data to identify practice patterns and opportunities for quality improvement. Additional details by data source are as follows: During the NQF Maintenance Process, EHR Specifications were provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: G8975: Documentation of medical reason(s) for patient having a hemoglobin level < 10 g/dL (e.g., patients who have non-renal etiologies of anemia (e.g., sickle cell anemia or other hemoglobinopathies, hypersplenism, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy, postoperative bleeding, active bloodstream or peritoneal infection), other medical reasons)
Risk Adjustment	Other We account for risk adjustment by inclusion of the exceptions for this measure. Exceptions for this measure are listed above, in section 2a1.8.	Other We account for risk adjustment by inclusion of the exceptions for this measure. Exceptions for this measure are listed in field S.10. Denominator Exclusions.
Stratification	We encourage the results of this measure to be stratified by race, ethnicity, gender, and primary language, and have included these variables as recommended data elements to be collected.	We encourage the results of this measure to be stratified by race, ethnicity, administrative sex, and primary language.
Type Score	Rate/proportion better quality = lower score	Rate/proportion better quality = lower score
Algorithm	Calculation algorithm is included in data dictionary/code table	Calculation algorithm is included in the attachment in field S.2b. Data

	1660 ESRD Patients Receiving Dialysis: Hemoglobin Level <9g/dL	1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL
	attachment (2a1.30).	Dictionary Code Table. To calculate performance rates: 1) Find the patients who meet the initial patient population (ie, the general group of patients that a set of performance measures is designed to address). 2) From the patients within the initial patient population criteria, find the patients who qualify for the denominator (ie, the specific group of patients for inclusion in a specific performance measure based on defined criteria). Note: in some cases the initial patient population and denominator are identical. 3) From the patients within the denominator, find the patients who qualify for the Numerator (ie, the group of patients in the denominator for whom a process or outcome of care occurs). Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator 4) From the patients who did not meet the numerator criteria, determine if the physician has documented that the patient meets any criteria for exception when exceptions have been specified [for this measure: medical reason(s) for patient having a hemoglobin level < 10g/dL (eg, patients who have non-renal etiologies of anemia [eg, sickle cell anemia or other hemoglobinopathies, hypersplenism, primary bone marrow disease, anemia related to chemotherapy for diagnosis of malignancy, postoperative bleeding, active bloodstream or peritoneal infection], other medical reasons)]. If the patient meets any exception criteria, they should be removed from the denominator for performance calculation. Although the exception cases are removed from the denominator population for the performance calculation, the exception rate (ie, percentage with valid exceptions) should be calculated and reported along with performance rates to track variations in care and highlight possible areas of focus for QI. If the patient does not meet the numerator and a valid exception is not present, this case represents a quality failure.
Submission items	5.1 Identified measures: 1667 : Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL	5.1 Identified measures: 1424 : Monthly Hemoglobin Measurement for Pediatric Patients

	1660 ESRD Patients Receiving Dialysis: Hemoglobin Level <9g/dL	1667 Pediatric Kidney Disease : ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL
	5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: This measure is related to NQF 1667 – a pediatric measure. RPA does not believe that a person's anemia treatment should change once they turn 18 years old. In addition, pediatric nephrologists often continue to see patients until they are 21 years old. However, to reconginze the changing anemia targets, the adult measure has been reduced to <9 g/dL. 2. Based on historical evidence, failure to treat anemia with ESAs results in Hgb levels <8 and is associated with marked worsening of quality of life. 5b.1 If competing, why superior or rationale for additive value: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program).	5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program). 5b.1 If competing, why superior or rationale for additive value: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program).

19 **Comparison of NQF #1662 and NQF #0066**

	1662 Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy	0066 Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
Steward	Renal Physicians Association	American College of Cardiology
Description	Percentage of patients aged 18 years and older with a diagnosis of CKD (not receiving RRT) and proteinuria who were prescribed ACE inhibitor or ARB therapy within a 12-month period	Percentage of patients aged 18 years and older with a diagnosis of coronary artery disease seen within a 12 month period who also have diabetes OR a current or prior Left Ventricular Ejection Fraction (LVEF) < 40% who were prescribed ACE inhibitor or ARB therapy
Type	Process	
Data Source	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Paper Medical Records, Electronic Clinical Data : Registry N/A Attachment ACe_inhibitior_or_ARB_therapy_data_file.pdf	This measure, in its previous specifications, is currently being used in the ACCF PINNACLE registry for the outpatient office setting. URL No data dictionary
Level	Clinician : Group/Practice, Clinician : Individual, Clinician : Team	
Setting	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary, Rest Home, or Custodial Care Services	
Time Window	Once during the measurement period	Once during 12 consecutive month measurement period
Numerator Statement	Patients who were prescribed ACE inhibitor or ARB therapy within a 12-month period *The above list of medications/drug names is based on clinical guidelines and other evidence. The specified drugs were selected based on the strength of evidence for their clinical effectiveness. This list of selected drugs may not be all-inclusive or current. Physicians and other health care professionals should refer to the FDA's web site page entitled "Drug Safety Communications" for up-to-date drug recall and alert information when prescribing medications. Definitions: Prescribed – May include prescription given to the patient for ACE	Patients who were prescribed ACE inhibitor or ARB therapy

	1662 Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy	0066 Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
	Inhibitor or ARB therapy OR patient already taking ACE Inhibitor or ARB therapy as documented in the current medication list	
Numerator Details	See attached for EHR specifications. For Claims/Administrative: Report CPT Category II 4009F Angiotensin converting enzyme (ACE) inhibitor or Angiotensin Receptor Blocker (ARB) therapy prescribed	Numerator Definition: Prescribed – May include prescription given to the patient for ACE inhibitor or ARB therapy at one or more visits in the measurement period OR patient already taking ACE inhibitor or ARB therapy as documented in current medication list. FOR EHR SPECIFICATION: No Current HQMF eCQM Available. FOR ADMINISTRATIVE CLAIMS SPECIFICATIONS: Report Quality Data Code G8935: Clinician prescribed angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy
Denominator Statement	All patients aged 18 years and older with the diagnosis of CKD (Stages 1-5, not receiving RRT) and proteinuria Definitions: Proteinuria: 1. >300mg of albumin in the urine per 24 hours OR 2. ACR >300 mcg/mg creatinine OR 3. Protein to creatinine ratio > 0	All patients aged 18 years and older with a diagnosis of coronary artery disease (CAD) seen within a 12 month period who also have diabetes or a current or prior LVEF <40%
Denominator Details	See attached for EHR specifications. For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, CPT)	Denominator Definition: LVEF < 40% corresponds to qualitative documentation of moderate dysfunction or severe dysfunction. FOR EHR SPECIFICATION: No Current HQMF eCQM Available. FOR ADMINISTRATIVE CLAIMS SPECIFICATIONS: Option 1 Patients aged >= 18 years AND

	1662 Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy	0066 Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
		Diagnosis for coronary artery disease (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 410.00, 410.01, 410.02, 410.10, 410.11, 410.12, 410.20, 410.21, 410.22, 410.30, 410.31, 410.32, 410.40, 410.41, 410.42, 410.50, 410.51, 410.52, 410.60, 410.61, 410.62, 410.70, 410.71, 410.72, 410.80, 410.81, 410.82, 410.90, 410.91, 410.92, 411.0, 411.1, 411.81, 411.89, 412, 413.0, 413.1, 413.9, 414.00, 414.01, 414.02, 414.03, 414.04, 414.05, 414.06, 414.07, 414.2, 414.3, 414.8, 414.9, V45.81, V45.82 Diagnosis for coronary artery disease(ICD-10-CM) [for use 10/01/2015-12/31/2015]: I20.0, I20.1, I20.8, I20.9, I21.01, I21.02, I21.09, I21.11, I21.19, I21.21, I21.29, I21.3, I21.4, I22.0, I22.1, I22.2, I22.8, I22.9, I24.0, I24.1, I24.8, I24.9, I25.10, I25.110, I25.111, I25.118, I25.119, I25.2, I25.5, I25.6, I25.700, I25.701, I25.708, I25.709, I25.710, I25.711, I25.718, I25.719, I25.720, I25.721, I25.728, I25.729, I25.730, I25.731, I25.738, I25.739, I25.750, I25.751, I25.758, I25.759, I25.760, I25.761, I25.768, I25.769, I25.790, I25.791, I25.798, I25.799, I25.810, I25.811, I25.812, I25.82, I25.83, I25.89, I25.9, Z95.1, Z95.5, Z98.61 AND Patient encounter during the reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99241, 99242, 99243, 99244, 99245, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350 AND Two Denominator Eligible Visits AND Left Ventricular Ejection Fraction (LVEF) < 40% or documentation of moderately or severely depressed left ventricular systolic function: G8934 Option 2 Patients aged >= 18 years

	1662 Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy	0066 Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
		AND Diagnosis for coronary artery disease (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 410.00, 410.01, 410.02, 410.10, 410.11, 410.12, 410.20, 410.21, 410.22, 410.30, 410.31, 410.32, 410.40, 410.41, 410.42, 410.50, 410.51, 410.52, 410.60, 410.61, 410.62, 410.70, 410.71, 410.72, 410.80, 410.81, 410.82, 410.90, 410.91, 410.92, 411.0, 411.1, 411.81, 411.89, 412, 413.0, 413.1, 413.9, 414.00, 414.01, 414.02, 414.03, 414.04, 414.05, 414.06, 414.07, 414.2, 414.3, 414.8, 414.9, V45.81, V45.82 Diagnosis for coronary artery disease (ICD-10-CM) [for use 10/01/2015-12/31/2015]: I20.0, I20.1, I20.8, I20.9, I21.01, I21.02, I21.09, I21.11, I21.19, I21.21, I21.29, I21.3, I21.4, I22.0, I22.1, I22.2, I22.8, I22.9, I24.0, I24.1, I24.8, I24.9, I25.10, I25.110, I25.111, I25.118, I25.119, I25.2, I25.5, I25.6, I25.700, I25.701, I25.708, I25.709, I25.710, I25.711, I25.718, I25.719, I25.720, I25.721, I25.728, I25.729, I25.730, I25.731, I25.738, I25.739, I25.750, I25.751, I25.758, I25.759, I25.760, I25.761, I25.768, I25.769, I25.790, I25.791, I25.798, I25.799, I25.810, I25.811, I25.812, I25.82, I25.83, I25.89, I25.9, Z95.1, Z95.5, Z98.61 AND Diagnosis for diabetes (ICD-9-CM) [for use 1/1/2015-9/30/2015]: 250.00, 250.01, 250.02, 250.03, 250.10, 250.11, 250.12, 250.13, 250.20, 250.21, 250.22, 250.23, 250.30, 250.31, 250.32, 250.33, 250.40, 250.41, 250.42, 250.43, 250.50, 250.51, 250.52, 250.53, 250.60, 250.61, 250.62, 250.63, 250.70, 250.71, 250.72, 250.73, 250.80, 250.81, 250.82, 250.83, 250.90, 250.91, 250.92, 250.93 Diagnosis for diabetes (ICD-10-CM) [for use 10/01/2015-12/31/2015]: E10.10, E10.11, E10.21, E10.22, E10.29, E10.311, E10.319, E10.321, E10.329, E10.331, E10.339, E10.341, E10.349, E10.351, E10.359, E10.36, E10.39, E10.40, E10.41, E10.42, E10.43, E10.44, E10.49, E10.51, E10.52, E10.59, E10.610, E10.618, E10.620, E10.621, E10.622, E10.628, E10.630, E10.638, E10.641, E10.649, E10.65, E10.69, E10.8, E10.9, E11.00, E11.01, E11.21, E11.22, E11.29, E11.311, E11.319, E11.321, E11.329, E11.331, E11.339, E11.341,

	1662 Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy	0066 Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
		E11.349, E11.351, E11.359, E11.36, E11.39, E11.40, E11.41, E11.42, E11.43, E11.44, E11.49, E11.51, E11.52, E11.59, E11.610, E11.618, E11.620, E11.621, E11.622, E11.628, E11.630, E11.638, E11.641, E11.649, E11.65, E11.69, E11.8, E11.9, E13.00, E13.01, E13.10, E13.11, E13.21, E13.22, E13.29, E13.311, E13.319, E13.321, E13.329, E13.331, E13.339, E13.341, E13.349, E13.351, E13.359, E13.36, E13.39, E13.40, E13.41, E13.42, E13.43, E13.44, E13.49, E13.51, E13.52, E13.59, E13.610, E13.618, E13.620, E13.621, E13.622, E13.628, E13.630, E13.638, E13.641, E13.649, E13.65, E13.69, E13.8, E13.9 AND Patient encounter during the reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99241, 99242, 99243, 99244, 99245, 99304, 99305, 99306, 99307, 99308, 99309, 99310, 99324, 99325, 99326, 99327, 99328, 99334, 99335, 99336, 99337, 99341, 99342, 99343, 99344, 99345, 99347, 99348, 99349, 99350 AND Two Denominator Eligible Visits
Exclusions	Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, pregnancy, history of angioedema, cough due to ACE Inhibitor or ARB therapy, allergy to medications, other medical reasons) Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy (patient declined, other patient reasons)	Documentation of medical reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, allergy, intolerant, pregnancy, renal failure due to ACE inhibitor, diseases of the aortic or mitral valve, other medical reasons) Documentation of patient reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, patient declined, other patient reasons) Documentation of system reason(s) for not prescribing ACE inhibitor or ARB therapy (eg, lack of drug availability, other reasons attributable to the health care system)
Exclusion Details	Append modifier to CPT II code 4009F-1P Append modifier to CPT II code 4009F-2P	FOR EHR SPECIFICATION: No Current HQMF eCQM Available. FOR ADMINISTRATIVE CLAIMS SPECIFICATIONS: Report Quality Data Code G8474: Angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy not

	1662 Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy	0066 Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
		prescribed for reasons documented by the clinician (eg, allergy, intolerance, pregnancy, renal failure due to ACE inhibitor, diseases of the aortic or mitral valve, other medical reasons) or (eg, patient declined, other patient reasons) or (eg, lack of drug availability, other reasons attributable to the health care system)
Risk Adjustment	No risk adjustment or risk stratification As a process measure, no risk adjustment is necessary.	No risk adjustment or risk stratification
Stratification	We encourage the results of this measure to be stratified by race, ethnicity, primary language, and gender, and have included these variables as recommended data elements to be collected.	We encourage the results of this measure to be stratified by race, ethnicity, sex, and payer.
Type Score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score
Algorithm	Calculation algorithm is included in data dictionary/code table attachment (2a1.30).	To calculate performance rates: 1) Find the patients who meet the initial patient population (ie, the general group of patients that the performance measure is designed to address). 2) From the patients within the initial patient population criteria, find the patients who qualify for the denominator (ie, the specific group of patients for inclusion in a specific performance measure based on defined criteria). Note: in some cases the initial patient population and denominator are identical. 3) From the patients within the denominator, find the patients who qualify for the Numerator (ie, the group of patients in the denominator for whom a process or outcome of care occurs). Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator If the patient does not meet the numerator, this case represents a quality failure.
Submission items	5.1 Identified measures: 0066 : Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%) 0081 : Heart Failure (HF): Angiotensin-Converting Enzyme (AC	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale,

	1662 Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy	0066 Coronary Artery Disease (CAD): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy - Diabetes or Left Ventricular Systolic Dysfunction (LVEF < 40%)
	5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program). The data source for ActiveHealth measures is what they call "level 2 clinically enriched data" (including data from claims & pharmacy). Our measure is specified for use in administrative claims (using CPT II codes) as well as integration into EHRs. The implementation of measures that are specified using clinically enriched data is significantly limiting in that it would only apply to those groups/settings with access to that type of information (ie, pharmacy data). NQF staff have noted that the ActiveHealth measures are in use by health plans – a 3 million patient database system. By comparison, our measures are in CMS's PQRS program providing an incentive payment to eligible professionals who satisfactorily report data on quality measures for services furnished to 46 million Medicare beneficiaries.	impact: 5b.1 If competing, why superior or rationale for additive value: Related Measures: Maintenance submission of NQF #0066: ACE Inhibitor/Angiotensin Receptor Blocker (ARB) Therapy

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21 **Comparison of NQF #2700 and NQF #2701**

	2700 Ultrafiltration rate greater than 13 ml/kg/hr	2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)
Steward	Centers for Medicare and Medicaid Services	Kidney Care Quality Alliance (KCQA)
Description	Percentage of patients months for patients an ultrafiltration rate greater than 13 ml/kg/hr.	Percentage of adult in-center hemodialysis patients in the facility whose average ultrafiltration rate (UFR) is >/= 13 ml/kg/hour.
Type	Outcome	Process
Data Source	Electronic Clinical Data CROWNWeb No data collection instrument provided	Electronic Clinical Data CROWNWeb Electronic Data Interchange, available at URL: http://www.projectcrownweb.org/crown/index.php. No data dictionary
Level	Facility	Facility
Setting	Dialysis Facility	Other Dialysis facility
Time Window	One Month	12 months.
Numerator Statement	Number of patient months for adult ESRD patients at a dialysis facility with an ultrafiltration rate greater than 13 ml/kg/hr.	Number of patients* from the denominator whose average UFR >13 ml/kg/hour who receive an average of <240 minutes per treatment during the calculation period.** *To address the fact that patients may contribute varying amounts of time to the annual denominator population, results will be reported using a "patient-month" construction. ** The calculation period is defined as the same week that the monthly Kt/V is drawn.
Numerator Details	Ultrafiltration rate is calculated for a single session per month (CROWNWeb records data from the last session) using data elements for pre-dialysis weight, post-dialysis weight, and delivered minutes of dialysis. The formula for UFR is: UFR = [((delta wt kg)*1000)/(delivered time/60))/post wt kg] If the monthly ultrafiltration rate exceeds 13 ml/kg/hr then a patient is counted in the numerator.	Numerator Data Elements For all patients meeting the denominator criteria in the reporting month, collect the following data elements for all dialysis sessions (including supplemental sessions) falling within the same week that the monthly Kt/V is drawn:* • Pre-Dialysis Weight for Session (CROWNWeb RQMT_1532) • Post-Dialysis Weight for Session (RQMT_1323) • Time Delivered Per Session, in Minutes (RQMT_1358) • Session Date • Sessions Per Week (RQMT_1357) * If more than one Kt/V is drawn in a given month, the last draw for

	2700 Ultrafiltration rate greater than 13 ml/kg/hr	2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)
		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). Numerator Case Identification For each facility, for all dialysis sessions falling within the calculation period for all patients meeting the denominator criteria: 1. Calculate the UFR (in ml/kg/hour) for each dialysis session (including supplemental sessions): Session X UFR = ([{Session X Pre-Dialysis Weight in kg – Session X Post-Dialysis Weight in kg} x 1000 ml/kg] ÷ Session X Post-Dialysis Weight in kg) ÷ (Session X Delivered Treatment Time in minutes) x 60 minutes/hour 2. Calculate each patient's average UFR for all dialysis sessions (including supplemental sessions) during the calculation period: Average UFR = (UFR1 + UFR2 + …. + UFRX) ÷ X Treatments 3. Calculate each patient's average treatment time over all dialysis sessions (including supplemental sessions) during the calculation period: Average Treatment Time (in minutes) = (Time1 + Time 2 + … + TimeX) ÷ X Treatments 4. Identify all patients with <4 dialysis sessions during the calculation period. 5. For each facility, include in the numerator all patients with: • an average UFR during the calculation period (Step 2 value) >/= 13 ml/kg/hour; AND • an average treatment time during the calculation period (Step 3 value) <240 minutes.
Denominator Statement	Total number of patient months for adult patients reported at a dialysis facility undergoing hemodialysis (HD).	Number of adult in-center hemodialysis patients in an outpatient dialysis facility undergoing chronic maintenance hemodialysis during the calculation period.
Denominator Details	All adult (=18 years old) hemodialysis patients with ESRD >= 3 months and who are assigned to the same provider for at least the full reporting month who have non-missing values for data elements necessary for calculating UFR (pre and post dialysis weight and	Identify all patients in the dialysis facility during the reporting period whose: • Primary Type Treatment/Modality (CROWNWeb RQMT_1252

	2700 Ultrafiltration rate greater than 13 ml/kg/hr	2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)
	delivered time per session) during the reporting period.	and/or _1356) = Hemodialysis. • Primary/Current Dialysis Setting (RQMT_791, _1355, and/or _1414) = In-center. • Date of Birth (RQMT_1310) = >18 years prior to treatment date.
Exclusions	Exclusions that are implicit in the denominator definition include 1) pediatric patients 2) PD patients, 3) patients new to ESRD (less than 90 days on chronic dialysis) and 4) patients that have not been with the same facility for the entire reporting month (transient patients). There are no additional exclusions for this measure.	The following patients are excluded from the denominator population: 1. Patients <18 years of age (implicit in denominator definition). 2. Home dialysis patients (implicit in denominator definition). 3. Patients in a facility <30 days. 4. Patients with >4 hemodialysis treatments during the calculation period. 5. Patients with <7 hemodialysis treatments in the facility during the reporting month. 6. Patients without a completed CMS Medical Evidence Form (Form CMS-2728) in the reporting month. 7. Kidney transplant recipients with a functioning graft. 8. Facilities treating <XX adult in-center hemodialysis patients during the reporting month. (Number currently being evaluated.)
Exclusion Details	N/A	For all patients meeting the denominator criteria in the reporting month, identify all patients meeting any of the following exclusion criteria during the calculation period and remove from the denominator population: 1. Date of Birth (RQMT_1310) = <18 years prior to treatment date (implicit in denominator definition). 2. Primary Type Treatment/Modality (CROWNWeb RQMT_1252 and/or _1356) = Peritoneal dialysis or home hemodialysis (implicit in denominator definition). 3. Date Patient Started Chronic Dialysis at Current Facility (RQMT_1360) = >30 days prior to treatment date. 4. Sessions Per Week (RQMT_1357) = >4 5. Transient Status (RQMT_356) = Not transient OR patients with <7 hemodialysis treatments in the facility during the reporting month.

	2700 Ultrafiltration rate greater than 13 ml/kg/hr	2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)
		6. Patients without a completed CMS Medical Evidence Form (Form CMS-2728) in the reporting month. 7. Kidney transplant recipients with a functioning graft
Risk Adjustment	No risk adjustment or risk stratification N/A	No risk adjustment or risk stratification Not applicable.
Stratification	N/A	Not applicable.
Type Score	Rate/proportion better quality = lower score	Rate/proportion better quality = lower score
Algorithm	1. Using CROWNWeb-reported data (data stored as SAS files), identify all adult HD patients under the care of a facility during the reporting month. 2. From this group, remove patients who were not in the facility for the entire reporting month and patients who have not been on chronic dialysis for at least 90 days. 3. To form the numerator, remove all denominator-eligible patients who do not have required elements to calculate ultrafiltration rate including pre dialysis weight (kg), post dialysis weight (kg), and delivered time on hemodialysis (mins). 4. Calculate the facility´s rate of UFR>13 by dividing the number calculated in Step 3 (the numerator) by the number calculated in Step 2 (the denominator). No diagram provided	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.

	2700 Ultrafiltration rate greater than 13 ml/kg/hr	2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)
		c. Sessions Per Week (RQMT_1357) = >4. d. Patients without a completed CMS Medical Evidence Form (Form CMS-2728) in the reporting month. e. 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. Pre-Dialysis Weight for Session (CROWNWeb RQMT_1532) b. Post-Dialysis Weight for Session (RQMT_1323) c. Session Date d. Time Delivered Per Session, in Minutes (RQMT_1358) e. Sessions Per Week (RQMT_1357) 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 UFR (in ml/kg/hour) for each dialysis session (including supplemental sessions): Session X UFR = {[{Session X Pre-Dialysis Weight in kg – Session X Post-Dialysis Weight in kg} x 1000 ml/kg] ÷ Session X Post-Dialysis Weight in kg) ÷ (Session X Delivered Treatment Time in minutes) x 60 minutes/hour b. Calculate each patient's average UFR for all dialysis sessions (including supplemental sessions) during the calculation period: Average UFR = (UFR1 + UFR2 + …. + UFRX) ÷ X Treatments c. Calculate each patient's average treatment time over all dialysis sessions (including supplemental sessions) during the calculation period: Average Treatment Time (in minutes) = (Time1 + Time 2 + … + TimeX) ÷ X Treatments d. For each facility, include in the numerator all patients with:

	2700 Ultrafiltration rate greater than 13 ml/kg/hr	2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)
		i. an average UFR during the calculation period (4.b. value) >/= 13 ml/kg/hour; AND ii. an average treatment time during the calculation period (4.c. value) <240 minutes. 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 Available in attached appendix at A.1
Submission items	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value: We are currently discussing the differences between our UFR measures with KCQA. The primary differences identified are the treatment time exclusion criterion, the transient patient exclusion criterion, and the use of an average of 3 treatments/week (compared to the last treatment of the month).	5.1 Identified measures: 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: Discussions between KCQA and CMS are ongoing in an attempt to harmonize the measures. Identified differences include the following: 1. KCQA defines the UFR parameter as >/= 13, while CMS defines it as > 13. 2. The KCQA measure contains a length of session component, while the CMS measure does not. 3. The KCQA measure takes the average of the UFR over the sessions occurring in the week that the Kt/V is drawn; the CMS measure relies on data from a single dialysis session. 5b.1 If competing, why superior or rationale for additive value: Again, discussions between KCQA and CMS are ongoing in an attempt to harmonize the measures. Identified differences and the rationale for those differences are summarized below:

	2700 Ultrafiltration rate greater than 13 ml/kg/hr	2701 Avoidance of Utilization of High Ultrafiltration Rate (>/= 13 ml/kg/hour)
		1. The KCQA UFR parameter is ">/= 13"; the CMS parameter is "> 13". This is a small issue for which there is no strong clinical data supporting one position over the other. 2. The KCQA measure contains a length of session component; the CMS measure does not. KCQA believes that this is an important component of the measure, the intent of which is to encourage longer dialysis sessions and to not create the unintended consequence of longer sessions impacting subsequent patients on the same treatment day (who may then sign-off early). 3. The KCQA measure averages the UFRs over the course of the Kt/V week; the CMS measure relies on data from a single dialysis session (the session for which data are submitted via CROWNWeb for the Kt/V measure). To avoid potential gaming when a single event is used and to create a more accurate representation of performance, the KCQA measure specifies an average rate for the three sessions — the Kt/V measure data and data from the other two sessions during that week. This three-session average also obviates potential uneven-ness in performance that could arise depending on the particular day of the week any given facility is using for the Kt/V data.

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24 **Comparison of NQF #2705 and NQF #0318, NQF #0321, NQF #2706, NQF #2704, NQF #0249, NQF #0323, NQF #2703 and NQF #1423**

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
Steward	Centers for Medicare and Medicaid Services	Centers for Medicare & Medicaid Services	Renal Physicians Association	Centers for Medicare and Medicaid Services	Centers for Medicare and Medicaid Services	Centers for Medicare & Medicaid Services	Renal Physicians Association	Centers for Medicare and Medicaid Services	Centers for Medicare & Medicaid Services
Description	Percentage of all patient months for patients whose average delivered dose of dialysis (either hemodialysis or peritoneal dialysis) met the specified threshold during the reporting period.	Percentage of all patient months for patients = 18 whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 and spKt/V =< 8.5. (dialytic + residual)	Percentage of patients aged 18 years and older with a diagnosis of End Stage Renal Disease (ESRD) receiving peritoneal dialysis who have a total Kt/V >= 1.7 per week measured once every 4 months	Percent of pediatric peritoneal dialysis patient-months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V = 1.8 and spKt/V< 8.5. (dialytic + residual)	Percentage of all patient months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual)	Percentage of all patient months for adult patients (>= 18years old) whose average delivered dose of hemodialysis (calculated from the last measurements of the month using the UKM or Daugirdas II formula) was between spKt/V >= 1.2 and spKt/V =< 5.0.	Percentage of calendar months within a 12-month period during which patients aged 18 years and older with a diagnosis of End Stage Renal Disease (ESRD) receiving hemodialysis three times a week for >= 90 days have a spKt/V >= 1.2	Percentage of all patient months for patients whose average delivered dose of hemodialysis using the UKM or Daugirdas II formula) was between spKt/V >= 1.2 and spKt/V =< 5.0	Percentage of patient months for all pediatric (<18 years old) in-center HD patients who have been on hemodialysis for more than 90 days and dialyzing 3 or 4 times weekly whose average delivered dose of hemodialysis using the UKM or

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
									Daugirdas II formula)
Type	Outcome	Outcome	Outcome	Outcome	Outcome	Outcome	Outcome	Outcome	Outcome
Data Source	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used No data collection instrument provided	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used No data collection instrument provided No data	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry N/A Attachment AMA-PCPI_AKID-11_PeritonealAdequacy_eSPEC-635289364639799938.pdf	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used No data collection instrument provided No data	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used. No data collection instrument provided No data	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used. No data collection instrument provided URL	Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry N/A Attachment AMA-PCPI_AKID-10_HDAdequacy_11.8.2011-635289365199063523.pdf	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used. No data collection instrument provided No data	Administrative claims, Electronic Clinical Data For the analyses supporting this submission, the measure is calculated using CROWNWeb as the primary data source. If a patient's data are missing in CROWNWeb, Medicare claims are used No data

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
		dictionary		dictionary	dictionary			dictionary	collection instrument provided
Level	Facility	Facility	Clinician : Group/Practice, Clinician : Individual, Clinician : Team	Facility	Facility	Facility	Clinician : Group/Practice, Clinician : Individual, Clinician : Team	Facility	Facility
Setting	Dialysis Facility	Dialysis Facility	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary, Rest Home, or Custodial Care Services	Dialysis Facility	Dialysis Facility	Dialysis Facility	Ambulatory Care : Clinician Office/Clinic, Dialysis Facility, Home Health, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility, Other Domiciliary, Rest Home, or Custodial Care Services	Dialysis Facility	Dialysis Facility
Time Window	The entire calendar	The entire calendar	three times (at least 4	The entire calendar	The entire calendar	The entire calendar	Each calendar month within	The entire calendar	The entire calendar

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
	month	month	months apart) during the 12 consecutive month measurement period	month	month	month.	12 consecutive month measurement period	month.	month
Numerator Statement	Number of patient months in the denominator for patients whose delivered dose of dialysis met the specified ranges. The ranges are as follows: Hemodialysis (all ages): spKt/V >= 1.2 and spKt/V =< 5.0 (calculated from the last measurement of the month) Peritoneal dialysis	Number of patient months in the denominator whose delivered peritoneal dialysis was a weekly Kt/Vurea of between spKt/V >= 1.7 and spKt/V =< 8.5 (dialytic + residual)	Patients who have a total Kt/V >= 1.7 per week measured once every 4 months	Percent of pediatric peritoneal dialysis patient-months whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.8 and spKt/V =< 8.5. (dialytic + residual)	Number of patient months in the denominator whose delivered peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual)	Number of patient months in denominator whose delivered dose of hemodialysis (calculated from the last measurement of the month (using the UKM or Daugirdas II formula) was between a spKt/V >= 1.2 and spKt/V =<5.0.	Calendar months during which patients have a spKt/V >= 1.2	Number of patient months in denominator whose average delivered dose of hemodialysis using the UKM or Daugirdas II formula) was between spKt/V >= 1.2 and spKt/V =< 5.0	Number of patient months for patients in the denominator whose delivered dose of hemodialysis (calculated from the last measurement of the month (using the UKM or Daugirdas II formula) was between a spKt/V >=

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
	(pediatric <18 years): spKt/V >= 1.8 and spKt/V =< 8.5 (dialytic + residual, measured within the past 6 months) Peritoneal dialysis (adult >= 18 years): spKt/V >= 1.7 and spKt/V =<8.5 (dialytic + residual, measured within the past 4 months)								1.2 and spKt/V =<5.0.
Numerator Details	The numerator will be determined by counting the patient months for: 1) Hemodialysis patients in	Eligible Kt/V values counted in the numerator are those in the range from spKt/V >= 1.7 to spKt/V =< 8.5	Numerator Definition: Total Kt/V includes residual kidney function and equals peritoneal dialysate Kt/V	Eligible Kt/V values counted in the numerator are those in the range from spKt/V >= 1.7 to spKt/V =< 8.5	The numerator will be determined by counting the patient months in the denominator whose delivered	Eligible Kt/V values counted in the numerator are those in the range from spKt/V >= 1.2 to spKt/V =<5.0	Note: Urea kinetic modeling (UKM) or the second generation Daugirdas formula (simplified multivariable	Eligible Kt/V values counted in the numerator are those in the range from spKt/V >= 1.2 to spKt/V =< 5.0	Eligible Kt/V values counted in the numerator are those in the range from spKt/V >= 1.2 to spKt/V =<

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
	the denominator for whom "Kt/V Hemodialysis Method" is 'Daugirdas II' OR 'UKM' and spKt/V >= 1.2 and spKt/V =< 5.0 (calculated from the last measurement of the month); and, 2) Peritoneal dialysis patient in the denominator whose delivered peritoneal dialysis was a weekly Kt/Vurea between spKt/V = 1.7 and spKt/V<8.5 within past	(dialytic + residual) within past four months. Values that will not be counted in the numerator are: Out of range spKt/V of <1.7 or spKt/V> 8.5); missing (no spKt/V reported).	plus renal Kt/V During the NQF Maintenance Process, an EHR specification was provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: Report the quality data code designated for this numerator: G8718 - Total Kt/V greater than or equal to 1.7 per week (Total	(dialytic + residual)within past six months. Values that will not be counted in the numerator are: Out of range spKt/V of <1.8 or spKt/V> 8.5); missing (no spKt/V reported). If RRF is to be incorporated in the Kt/V calculation, this will be calculated using the mean of urea and creatinine clearances derived from 24 hour urine collection. Total body	peritoneal dialysis dose was a weekly Kt/Vurea of between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual)	during the reporting month. Values that will not be counted in the numerator are: Out of range spKt/V of <1.2 or spKt/V> 5.0); missing (no spKt/V reported).	equation) are the most appropriate ways to calculate spKt/V, and the two accepted methods for calculating spKt/V per the KDOQI guidelines. For more information on these methods, please refer to National Kidney Foundation's KDOQI Clinical Practice Guidelines and Clinical Practice Recommendations for 2006 Updates: Hemodialysis	during the reporting month. Values that will not be counted in the numerator are: Out of range spKt/V of <1.2 or spKt/V> 5.0); missing (no spKt/V reported).	5.0 during the reporting month. Values that will not be counted in the numerator are: Out of range spKt/V of <1.2 or spKt/V> 5.0); missing (no spKt/V reported).

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
	four months (Adult >= 18 years) or for pediatric patients between spKt/V >= 1.8 and spKt/V =< 8.5 within past 6 months (pediatric <18 years).		clearance of urea [Kt]/volume [V])	water (V) should be estimated by one of the following pediatric specific V approximation methods: o Prediction equation based upon heavy water dilution Males: TBW=0.10 (ht x wt)0.68 – 0.37 (wt) Females: TBW=0.14 (ht x wt) 0.64 – 0.35 (wt) o Simplified V estimating equations derived from the above prediction equations: Males:			Adequacy, Peritoneal Dialysis Adequacy and Vascular Access. Am J Kidney Dis 48:S1-S322, 2006 (suppl 1). For Administrative/Claims, report the quality data code designated for this numerator: G8713 - spKt/V greater than or equal to 1.2 (single-pool clearance of urea [Kt] / volume [V]) During the NQF Maintenance		

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
				TBW=20.88 x BSA – 4.29 Females: TBW=16.92 x BSA – 1.81 o Sex specific normograms derived from the above prediction equations and published in KDOQI PD guidelines for the pediatric population update from 2006.o Prediction equation based upon heavy water dilution Males: TBW=0.10 (ht x wt)0.68 – 0.37 (wt) Females: TBW=0.14 (ht x wt) 0.64 –			Process, an EHR specification was provided for this performance measure, see attachment in field S.2b. Data Dictionary Code Table.		

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
				0.35 (wt) o Simplified V estimating equations derived from the above prediction equations: Males: TBW=20.88 x BSA – 4.29 Females: TBW=16.92 x BSA – 1.81 o Sex specific normograms derived from the above prediction equations and published in KDOQI PD guidelines for the pediatric population update from 2006.					
Denominator Stateme	To be included in the	To be included in the	All patients aged 18 years and older	To be included in the	To be included in the	To be included in the	All calendar months during which	To be included in the	To be included in the

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
nt	denominator for a particular month, patients need to meet the following requirements that month: 1) Hemodialysis patients: Adult (>= 18 years old) patients who have had ESRD for greater than 90 days and dialyzing thrice-weekly; pedia	denominator for a particular month the patient must have had ESRD for greater than 90 days, must be >=18 years old, and must be assigned to that facility for the entire month.	with a diagnosis of ESRD receiving peritoneal dialysis	denominator for a particular month the patient must have had ESRD for greater than 90 days, must be <18 years old, and must be assigned to that facility for the entire month.	denominator for a particular month, the patient must have had ESRD for greater than 90 days, and must be assigned to the facility for the entire month.	denominator for a particular month, the patient must be >= 18 years old, must have had ESRD for greater than 90 days, must be dialyzing thrice-weekly during the month, and must be assigned to that facility for the entire month.	patients aged 18 years and older with a diagnosis of ESRD are receiving hemodialysis three times a week for >= 90 days	denominator for a particular month, the patients must have had ESRD for greater than 90 days, must be dialyzing thrice-weekly (adults) or dialyzing in-center 3 or 4 times weekly (pediatrics), and must be assigned to the facility for	denominator for a particular month, a patient must have been <18 years old, have had ESRD for greater than 90 days, dialyzing 3 or 4 times weekly, and must be assigned to that facility for the entire month.
Denominator Details	A treatment history file is the data source for the denominator calculation used for the analyses supporting	A treatment history file is the data source for the denominator calculation used for the analyses supporting	During the NQF Maintenance Process, an EHR specification was provided for this performance	A treatment history file is the data source for the denominator calculation used for the analyses supporting	A treatment history file is the data source for the denominator calculation used for the analyses supporting	A treatment history file is the data source for the denominator calculation used for the analyses supporting	During the NQF Maintenance Process, an EHR specification was provided for this performance	A treatment history file is the data source for the denominator calculation used for the analyses supporting	A treatment history file is the data source for the denominator calculation used for the

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
	this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality.	this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality.	measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: Patients aged >= 18 years AND Diagnosis for ESRD (ICD-9-CM) [for use 1/1/2014-9/30/2014]: 585.6 Diagnosis for ESRD (ICD-10-CM) [for use 10/01/2014-12/31/2014]: N18.6 AND Encounter for Dialysis and Dialysis Catheter Care (ICD-9-CM)	this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality.	this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality.	this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality.	measure, see attachment in field S.2b. Data Dictionary Code Table. For Administrative/Claims: Patients aged >= 18 years old AND Diagnosis for ESRD (ICD-9-CM) [for use 1/1/2014-9/30/2014]: 585.6 Diagnosis for ESRD (ICD-10-CM) [for use 10/01/2014-12/31/2014]: N18.6 AND Encounter for Dialysis and Dialysis Catheter Care	this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she changes facility or treatment modality.	analyses supporting this submission. This file provides a complete history of the status, location, and dialysis treatment modality of an ESRD patient from the date of the first ESRD service until the patient dies or the data collection cutoff date is reached. For each patient, a new record is created each time he/she

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
	Each record represents a time period associated with a specific modality and dialysis facility. SIMS/CROWN Web is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death and transplant is obtained from additional sources including the	Each record represents a time period associated with a specific modality and dialysis facility. SIMS/CROWN Web is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death and transplant is obtained from additional sources including the	[for use 1/1/2014-9/30/2014]: V56.2, V56.32, V56.8 Encounter for Dialysis and Dialysis Catheter Care (ICD-10-CM) [for use 10/01/2014-12/31/2014]: Z49.02, Z49.32 AND Patient encounter during the reporting period (CPT): 90945, 90947, 90957, 90958, 90959, 90960, 90961, 90962, 90965, 90966,	Each record represents a time period associated with a specific modality and dialysis facility. SIMS/CROWN Web is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death and transplant is obtained from additional sources including the	Each record represents a time period associated with a specific modality and dialysis facility. SIMS/CROWN Web is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death and transplant is obtained from additional sources including the	Each record represents a time period associated with a specific modality and dialysis facility. SIMS/CROWN Web is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death and transplant is obtained from additional sources including the	(ICD-9-CM) [for use 1/1/2014-9/30/2014]: V56.0, V56.1, V56.32 Encounter for Dialysis and Dialysis Catheter Care (ICD-10-CM) [for use 10/01/2014-12/31/2014]: Z49.01, Z49.31, Z49.32 AND Hemodialysis treatment performed exactly three times per week for >= 90 days: G8714 AND Patient encounter during the	Each record represents a time period associated with a specific modality and dialysis facility. SIMS/CROWN Web is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service date, death and transplant is obtained from additional sources including the	changes facility or treatment modality. Each record represents a time period associated with a specific modality and dialysis facility. SIMS/CROWNWeb is the primary basis for placing patients at dialysis facilities and dialysis claims are used as an additional source. Information regarding first ESRD service

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
	CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746) and the Social Security Death Master File. The following patients will be included in the denominator for a particular month: 1) All adult hemodialysis patients who	CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746) and the Social Security Death Master File. The denominator is defined as counting the patient months of PD patients who have had ESRD for greater than 90 days, and	90969, 90970	CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746) and the Social Security Death Master File. The denominator is defined as counting the patient months of pediatric PD patients who have had ESRD for greater than	CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746) and the Social Security Death Master File. The denominator will include all PD patients who have had ESRD for greater than 90 days, and who have been	CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746) and the Social Security Death Master File. The denominator is defined as counting the patient months of HD patients who received dialysis greater than two and less	reporting period (CPT): 90957, 90958, 90959, 90960, 90961, 90962, 90965, 90966, 90969, 90970	CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746) and the Social Security Death Master File. The denominator is defined as counting the patient months of HD patients who received dialysis greater than two and less	date, death and transplant is obtained from additional sources including the CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746) and the Social Security Death Master File. The

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
	received dialysis greater than two and less than four times a week (adults, >= 18 years), and all pediatric in – center hemodialysis patients who received dialysis greater than two and less than five times a week (pediatric, <18 years), did not indicate frequent dialysis, and have had ESRD for greater than 90 days; 2) All peritoneal dialysis	assigned to that facility for the entire month.		90 days, and are assigned to that facility for the entire month.	assigned to the facility for the entire month.	than four times a week, did not indicate frequent dialysis, and have had ESRD for greater than 90 days, and assigned to that facility for the entire month.		than four times a week (adults), HD patients who received dialysis greater than two and less than five times a week (pediatric), did not indicate frequent dialysis, have had ESRD for greater than 90 days, and were assigned to that facility for the entire month.	denominator is defined as counting the patient months for pediatric HD patients who received dialysis greater than two and less than five times a week, did not indicate frequent dialysis, and have been ESRD for greater than 90 days, and assigned to that facility for the entire month.

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
	patients who have had ESRD for greater than 90 days. 3) All patients (both HD and PD) who are assigned to the facility for the entire month.								
Exclusions	Exclusions that are implicit in the denominator definition include 1) for adult HD patients, those receiving dialysis less than 3 or greater than 4 times weekly 2) for pediatric HD	Exclusions that are implicit in the denominator definition include 1) pediatric patients (<18 years old) 2) all patients who have had ESRD for <91 days, and 3) patients who have not been in the facility for the entire month.	There are no denominator exceptions for this measure.	Exclusions that are implicit in the denominator definition include 1) all patients >=18 years old 2) all patients who have had ESRD for <91 days, and 3) patients who have not been in the facility for the entire	Exclusions that are implicit in the denominator definition include 1) all patients who have had ESRD for <91 days and 2) patients who were not assigned to the facility for the entire month. There are no	Exclusions that are implicit in the denominator definition include 1) pediatric patients (<18 years old) 2) those patients receiving dialysis less than 3 times weekly 3) all patients who have had ESRD for <91 days, and 4)	There are no denominator exceptions.	Exclusions that are implicit in the denominator definition include 1) patients receiving dialysis less than 3 times weekly 2) all patients who have had ESRD for <91 days 3) pediatric home hemodialysis	Exclusions that are implicit in the denominator definition include 1) patients on home hemodialysis; 2) patients on ESRD less than 91 days 3) patients receiving

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
	patients, those receiving dialysis less than 3 or greater than 4 times weekly or who are on home hemodialysis 3) all patients who have had ESRD for <91 days 4) patients who were not assigned to the facility for the entire month	There are no additional exclusions for this measure.		reporting month There are no additional exclusions for this measure.	additional exclusions for this measure.	patients at the facility for less than one month. There are no additional exclusions for this measure.		patients 4) patients who have not been in the facility the entire reporting month. There are no additional exclusions for this measure.	dialysis less than 3x/week or greater than 4x/week and 4) patients who have not been in the facility for the entire reporting month There are no additional exclusions for this measure.
Exclusion Details	N/A	None.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Risk Adjustment	No risk adjustment or risk stratification N/A	No risk adjustment or risk stratification N/A Provided in response box	Other No risk adjustment or risk stratification. This measure is not risk adjusted.	No risk adjustment or risk stratification N/A Provided in response box	No risk adjustment or risk stratification N/A	No risk adjustment or risk stratification N/A	No risk adjustment or risk stratification N/A	No risk adjustment or risk stratification N/A	No risk adjustment or risk stratification N/A

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum S.15a	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V S.15a	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
Stratification	N/A	N/A	We encourage the results of this measure to be stratified by race, ethnicity, administrative sex, and primary language.	N/A	N/A	N/A	We encourage the results of this measure to be stratified by race, ethnicity, administrative sex, and primary language.	N/A	N/A
Type Score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score	Rate/proportion better quality = higher score
Algorithm	Denominator: For the reporting month, patients are included in the denominator if: Patient has had ESRD for	Denominator: For the reporting period, patients are included in the denominator if: Patient modality is	Calculation algorithm is included in field S.2b. Data Dictionary Code Table.	Denominator: For the reporting period, patients are included in the denominator if: Patient modality is	Denominator: For the reporting period, patients are included in the denominator if: Patient modality is	Denominator: For the reporting month, patients are included in the denominator if: • Patient modality is	Calculation algorithm is included in S.2b. Data Dictionary Code Table	Denominator: For the reporting month, patients are included in the denominator if: Patient modality is	Denominator: For the reporting month, patients are included in the denominator if: Patient modality is

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
	greater than 90 days Patient is not on frequent dialysis (HD patients only - adults = 3 times/week, pediatrics = 3 or 4 times a week) Patient is dialyzing in-center (pediatric HD only) Patient has been assigned to the facility for the entire month Numerator: For the reporting period, patients are included in the numerator if	indicated as PD Patient age as of the reporting month is at least 18 years Patient has had ESRD for greater than 90 days Patient has been assigned to the facility for the entire month Numerator: For the reporting period, patients are included in the numerator if The last spKt/V for the month is between spKt/V >= 1.7		indicated as PD Patient age as of the reporting month is less than 18 years Patient has had ESRD for greater than 90 days Patient has been assigned to the facility for the entire month Numerator: For the reporting period, patients are included in the numerator if The last spKt/V for the month is between spKt/V> 1.8	indicated as PD Patient has had ESRD for at greater than 90 days Patient has been assigned to the facility for the entire month Numerator: For the reporting period, patients are included in the numerator if The last Kt/v for the month is between spKt/V >= 1.7 (adult) or 1.8 (pediatric) and spKt/V =< 8.5. (dialytic + residual) If no Kt/V	indicated as HD • Patient age as of the reporting month is at least 18 years • Patient has had ESRD for greater than 90 days • Assigned to the facility for the entire month • Patient is not on frequent dialysis Numerator: For the reporting month, patients are included in the numerator if • The last spKt/V for the month is		indicated as HD Patient has had ESRD for greater than 90 days Patient is not on frequent dialysis (adults = 3 times/week, pediatrics = 3 or 4 times a week) Patient indicates in-center hemodialysis (pediatric only) Patient has been assigned to the facility for the entire month Numerator: For the reporting month,	indicated as HD Patient age as of the reporting month is less than 18 years Patient has had ESRD for greater than 90 days Patient is not on frequent dialysis (dialyzing 3 or 4 times weekly) Patient has been assigned to the facility for the entire month Numerator: For the reporting

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
	PD*: The last Kt/v for the month is between spKt/V = 1.7 (adult) or 1.8 (pediatric) and spKt/V< 8.5. (dialytic + residual) The last spKt/V for the month is between spKt/V> 1.2 and spKt/V<5.0 (using either Daugirdas II or UKM). *If no Kt/V value is reported for a given patient in a claim month, the most recent Kt /V value in the prior 4 months (adult) or 6	and spKt/V =<8.5 If no Kt/V value is reported for a given patient in a month, the most recent Kt/V value in the prior 3 months is applied to the calculation for that month. No diagram provided		and spKt/V<8.5 If no Kt/V value is reported for a given patient in a claim month, the most recent Kt /V value in the prior 5 months is applied to the calculation for that month. No diagram provided	value is reported for a given patient in a claim month, the most recent Kt /V value in the prior 3 months (adult) or 5 months (pediatrics) is applied to the calculation for that month. No diagram provided	between spKt/V> 1.2 and spKt/V< 5.0 (using either Daugirdas II or UKM).		patients are included in the numerator if The last spKt/V for the month is between spKt/V>= 1.2 and spKt/V =< 5.0 (using either Daugirdas II or UKM). No diagram provided	month, patients are included in the numerator if The last spKt/V for the month is between spKt/V >= 1.2 and spKt/V =< 5.0 (using either Daugirdas II or UKM). No diagram provided

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
	months (pediatric) is applied to the calculation for that month No diagram provided								
Submission items	5.1 Identified measures: 0249 : Delivered Dose of Hemodialysis Above Minimum 0321 : Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute 0318 : Delivered Dose of Peritoneal Dialysis Above Minimum	5.1 Identified measures: 0321 : Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale,	5.1 Identified measures: 0318 : Delivered Dose of Peritoneal Dialysis Above Minimum 5a.1 Are specs completely harmonized? Yes 5a.2 If not completely harmonized, identify difference, rationale,	5.1 Identified measures: 5a.1 Are specs completely harmonized? 5a.2 If not completely harmonized, identify difference, rationale, impact: 5b.1 If competing, why superior or rationale for additive value:	5.1 Identified measures: 0321 : Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute 0318 : Delivered Dose of Peritoneal Dialysis Above Minimum 5a.1 Are specs completely harmonized? No	5.1 Identified measures: 0323 : Adult Kidney Disease: Hemodialysis Adequacy: Solute 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact:	5.1 Identified measures: 0249 : Delivered Dose of Hemodialysis Above Minimum 5a.1 Are specs completely harmonized? Yes 5a.2 If not completely harmonized, identify difference, rationale, impact:	5.1 Identified measures: 0249 : Delivered Dose of Hemodialysis Above Minimum 0323 : Adult Kidney Disease: Hemodialysis Adequacy: Solute 1423 : Minimum spKt/V for Pediatric Hemodialysis Patients 5a.1 Are	5.1 Identified measures: 5a.1 Are specs completely harmonized ? 5a.2 If not completely harmonized , identify difference, rationale, impact: 5b.1 If competing, why superior or

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
	0323 : Adult Kidney Disease: Hemodialysis Adequacy: Solute 1423 : Minimum sp 5a.1 Are specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: Yes, the measure is harmonized with 0249, 0318, 1423, and the pediatric PD Kt/V measures.	impact: In the last maintenance cycle in 2011, 0318 was harmonized with 0321. Since then 0318 has been revised. The measure is not harmonized with 0321 as this proposed measure assesses achievement within a range of threshold values for adequate dialysis (see numerator and denominator descriptions). Out of range values and missing	impact: 5b.1 If competing, why superior or rationale for additive value: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health		5a.2 If not completely harmonized, identify difference, rationale, impact: Yes, the measure is harmonized with 0318 and the pediatric PD Kt/V measures. They all have the corresponding threshold ranges (numerator) and corresponding denominator populations. In the last maintenance cycle in 2011, 0318 was harmonized	During the previous NQF review, the hemodialysis measures (#0249, #0323) were harmonized on the evidence regarding method of measuring adequacy and threshold values. One remaining difference was thought to not pose any substantial impact: the physician measure denominator is patient months rather than patients as in the facility	5b.1 If competing, why superior or rationale for additive value: Our measure is specified at the clinician level, but measure results can be aggregated at a higher level of measurement. We have developed and will maintain specifications for multiple data sources, including Electronic Health Records (EHRs) and	specs completely harmonized? No 5a.2 If not completely harmonized, identify difference, rationale, impact: This measure is completely harmonized with the individual hemodialysis measures (#0249, #1423). They all have the corresponding threshold ranges (numerator) and corresponding denominator populations.	rationale for additive value:

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
	They all have the corresponding threshold ranges (numerator) and corresponding denominator populations. In the last maintenance cycle in 2011, 0318 was harmonized with 0321. Since then 0318 has been revised. The measure is not harmonized with 0321 and 0323 as this proposed measure assesses achievement within a range of	values are not counted in the numerator, in order to prevent gaming of the measure. 5b.1 If competing, why superior or rationale for additive value: It is anticipated that this proposed measure will allow for assessment of a larger population given the denominator revision. Out of range values and missing values are not counted in	Records (EHRs) and Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program).		with 0321. Since then 0318 has been revised. This measure is not harmonized with 0321 as this proposed measure assesses achievement within a range of threshold values for adequate dialysis (see numerator and denominator descriptions). Out of range values and missing values are not counted in the numerator, in order to prevent	measure. Since then we revised the numerator and denominator for 0249. It assesses achievement within a range of threshold values for adequate dialysis (see numerator and denominator descriptions). Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure.	Claims-Based Reporting. Our specifications for EHRs are developed in accordance with the terminology standards (eg, SNOMED, RxNorm, LOINC) named in the Meaningful Use Program (CMS EHR Incentive Program).	The measure is not harmonized with 0323 as this proposed measure assesses achievement within a range of threshold values for adequate dialysis (see numerator and denominator descriptions). Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure. 5b.1 If	

	2705 Delivered Dose of Dialysis Above Minimum	0318 Delivered Dose of Peritoneal Dialysis Above Minimum	0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V	2704 Minimum Delivered Peritoneal Dialysis Dose	0249 Delivered Dose of Hemodialysis Above Minimum	0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute	2703 Minimum Delivered Hemodialysis Dose	1423 Minimum spKt/V for Pediatric Hemodialysis Patients
	threshold values for adequate dialysis (see numerator and denominator descriptions). Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure. 5b.1 If competing, why superior or rationale for additive value: It is anticipated that this proposed measure will allow for	the numerator, in order to prevent gaming of the measure.			gaming of the measure. 5b.1 If competing, why superior or rationale for additive value: It is anticipated that this proposed measure will allow for assessment of a larger population given that it applies to both adult and pediatric PD patients. Out of range values and missing values are not counted in the numerator, in order to prevent	5b.1 If competing, why superior or rationale for additive value: It is anticipated that this proposed measure will allow for assessment of a larger given the new denominator definition. Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure.		competing, why superior or rationale for additive value:	

	~~2705 Delivered Dose of Dialysis Above Minimum~~	~~0318 Delivered Dose of Peritoneal Dialysis Above Minimum~~	~~0321 Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute~~	~~2706 Pediatric Peritoneal Dialysis Adequacy: Achievement of Target Kt/V~~	~~2704 Minimum Delivered Peritoneal Dialysis Dose~~	~~0249 Delivered Dose of Hemodialysis Above Minimum~~	~~0323 Adult Kidney Disease: Hemodialysis Adequacy: Solute~~	~~2703 Minimum Delivered Hemodialysis Dose~~	~~1423 Minimum spKt/V for Pediatric Hemodialysis Patients~~
	~~assessment of a larger population given that it applies to both adult and pediatric patients, and both HD and PD modality.~~ ~~Out of range values and missing values are not counted in the numerator, in order to prevent gaming of the measure.~~				~~gaming of the measure.~~				

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