



Measure Information

This document contains the information submitted by measure developers/stewards, but is organized according to NQF's measure evaluation criteria and process. The item numbers refer to those in the submission form but may be in a slightly different order here. In general, the item numbers also reference the related criteria (e.g., item 1b.1 relates to subcriterion 1b).

Brief Measure Information

NQF #: 1662

De.2. Measure Title: Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy

Co.1.1. Measure Steward: Renal Physicians Association

De.3. Brief Description of Measure: 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

1b.1. Developer Rationale: This measure is aimed at increasing the number of patients with CKD and albuminuria who are prescribed ACE inhibitor or ARB therapy. ACE inhibitors and ARBs are recommended as preferred agents for diabetic kidney disease and nondiabetic kidney diseases with proteinuria (albuminuria), even in the absence of hypertension. In these diseases, they lower blood pressure, reduce proteinuria (albuminuria), slow the progression of kidney disease, and likely reduce CVD risk by mechanisms in addition to lowering blood pressure. (National Kidney Foundation. (2004) K/DOQI clinical practice guidelines on hypertension and antihypertensive agents in chronic kidney disease. Am J Kidney Dis. May;43(5 Suppl 1):S1-S290.)

In a recent study, from January 1, 2000, through June 30, 2009, 28 497 hypertensive adult patients with CKD were selected. Serum creatinine levels were greater than 6 mg/dL, hematocrit levels were less than 28%, and patients were treated with erythropoiesis-stimulating agents.

Users (n=?14 117) and nonusers (n=?14 380) of ACEIs/ARBs using Cox proportional hazards regression models to estimate hazard ratios (HRs) for commencement of long-term dialysis and all-cause mortality for ACEI/ARB users vs nonusers.

In a median follow-up of 7 months, 20 152 patients (70.7%) required long-term dialysis and 5696 (20.0%) died before progression to end-stage renal disease requiring dialysis. Use of ACEIs/ARBs was associated with a lower risk for long-term dialysis (HR, 0.94 [95% CI, 0.91-0.97]) and the composite outcome of long-term dialysis or death (0.94 [0.92-0.97]). The renal benefit of ACEI/ARB use was consistent across most patient subgroups, as was that of ACEI or ARB monotherapy. Compared with nonusers, the ACEI/ARB users had a higher hyperkalemia-associated hospitalization rate, but the risk of predialysis mortality caused by hyperkalemia was not significantly increased (HR, 1.03 [95% CI, 0.92-1.16]; P=?0.30). Patients with stable hypertension and advanced CKD who receive therapy with ACEIs/ARBs exhibit an association with lower risk for long-term dialysis or death by 6%. This benefit does not increase the risk of all-cause mortality. Hsu T, Liu J, Hung S, et al. Renoprotective Effect of Renin-Angiotensin-Aldosterone System Blockade in Patients With Predialysis Advanced Chronic Kidney Disease, Hypertension, and Anemia. JAMA Intern Med. 2014;174(3):347-354.

S.4. 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

S.7. 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

S.10. Denominator 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)

De.1. Measure Type: Process

S.23. Data Source: Administrative claims, Electronic Clinical Data, Electronic Clinical Data : Electronic Health Record, Electronic Clinical Data : Registry, Paper Medical Records

S.26. Level of Analysis: Clinician : Group/Practice, Clinician : Individual, Clinician : Team

IF Endorsement Maintenance – Original Endorsement Date: Oct 02, 2015 **Most Recent Endorsement Date:** Oct 02, 2015

IF this measure is included in a composite, NQF Composite#/title:

IF this measure is paired/grouped, NQF#/title:

De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results? This is not a composite or paired measure.

1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. **Measures must be judged to meet all subcriteria to pass this criterion and be evaluated against the remaining criteria.**

1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form
MeasSubm_Evidence_Ace_and_Arb.docx

1b. Performance Gap

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- disparities in care across population groups.

1b.1. Briefly explain the rationale for this measure (e.g., the benefits or improvements in quality envisioned by use of this measure)
This measure is aimed at increasing the number of patients with CKD and albuminuria who are prescribed ACE inhibitor or ARB therapy. ACE inhibitors and ARBs are recommended as preferred agents for diabetic kidney disease and nondiabetic kidney diseases with proteinuria (albuminuria), even in the absence of hypertension. In these diseases, they lower blood pressure, reduce proteinuria (albuminuria), slow the progression of kidney disease, and likely reduce CVD risk by mechanisms in addition to lowering blood pressure. (National Kidney Foundation. (2004) K/DOQI clinical practice guidelines on hypertension and antihypertensive agents in chronic kidney disease. Am J Kidney Dis. May;43(5 Suppl 1):S1-S290.)

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stimulating agents.

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In a median follow-up of 7 months, 20 152 patients (70.7%) required long-term dialysis and 5696 (20.0%) died before progression to end-stage renal disease requiring dialysis. Use of ACEIs/ARBs was associated with a lower risk for long-term dialysis (HR, 0.94 [95% CI, 0.91-0.97]) and the composite outcome of long-term dialysis or death (0.94 [0.92-0.97]). The renal benefit of ACEI/ARB use was consistent across most patient subgroups, as was that of ACEI or ARB monotherapy. Compared with nonusers, the ACEI/ARB users had a higher hyperkalemia-associated hospitalization rate, but the risk of predialysis mortality caused by hyperkalemia was not significantly increased (HR, 1.03 [95% CI, 0.92-1.16]; P=?0.30). Patients with stable hypertension and advanced CKD who receive therapy with ACEIs/ARBs exhibit an association with lower risk for long-term dialysis or death by 6%. This benefit does not increase the risk of all-cause mortality. Hsu T, Liu J, Hung S, et al. Renoprotective Effect of Renin-Angiotensin-Aldosterone System Blockade in Patients With Predialysis Advanced Chronic Kidney Disease, Hypertension, and Anemia. JAMA Intern Med. 2014;174(3):347-354.

1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis. *(This is required for endorsement maintenance. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included). This information also will be used to address the subcriterion on improvement (4b.1) under Usability and Use.*

Among patients with recognized CKD, use of ACEIs/ARBs is 56-57 percent, far below the 71-76 percent seen in those who also have hypertension or diabetes.

Among CKD patients with recognized cardiovascular disease, 61 percent use a lipid lowering agent.(1)

At two years prior to ESRD, 50–62 percent of CKD patients are using an ACEI, ARB, or renin inhibitor, and this falls to 33–44 percent in the three months before initiation.(1)

While use of ACEIs, ARBs, and renin inhibitors appears similar before and after initiation, analysis shows that half the patients using these drugs three months prior to ESRD are taken off them by one month after initiation, and new patients are started on these medications.(1)

Across age and race groups, approximately 60 percent of dialysis patients enrolled in Part D in 2007 used beta blockers, while angiotensin-converting enzyme inhibitors (ACEIs), angiotensin receptor blockers (ARBs), or renin inhibitors were used in approximately 50 percent.(1)

For both dialysis and transplant patients, beta blocker use predominated over ACEIs/ARBs/renin inhibitors.(1)

As of 2012 USRDS data, among both Medicare Part D enrollees and their younger MarketScan counterparts, approximately 60 percent of those with CKD and diagnosed diabetes receive an ACEI/ARB/renin inhibitor. Beta blocker use reaches 71–77 percent for patients with congestive heart failure and 59–73 percent in those with hypertension; the very high rates of cardiovascular events and of sudden death among CKD patients may provide a background for studies assessing the value of beta blockers across the board in the CKD population. Dihydropyridine calcium channel blockers are far more widely used to treat hypertension and cardiovascular disease in the MarketScan population than in Medicare Part D enrollees, and potassium-sparing diuretics or combination products are rarely used in CKD patients. Thiazide and loop diuretics, in contrast, receive much wider use in both populations.

Given the progressive clinical problems with fluid overload and hypertension in patients with Stage 4–5 CKD, it is puzzling to note in these patients the reduced use of ACEI/ARBs, drugs well known to help heart failure. Unfortunately, concerns about lower eGFRs and possible hyperkalemia have led physicians to reduce the use of these medications. More research is needed into the causes of lowered utilization of ACEIs/ARBs to determine the risks and benefits with advancing CKD. (2)

This measure was used in the CMS Physician Quality Reporting Initiative, in the claims option (2008).

There is a gap in care as shown by this 2008 data (3); 44.9 % of patients reported on did not receive the optimal care.

10th percentile: 11.36 %

25th percentile: 33.33 %

50th percentile: 62.50 %

75th percentile: 100.00 %

90th percentile: 100.00 %

1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.

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, 2010.

2. 1. U S Renal Data System, USRDS 2012 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, 2012.

3. Confidential CMS PQRI 2008 Performance Information by Measure. Jan-Sept TAP file.

1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability. (This is required for endorsement maintenance. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the subcriterion on improvement (4b.1) under Usability and Use.

African-Americans have the highest reported prevalence and incidence of treated ESRD. Overall, African-Americans are four times more likely to progress to ESRD compared to whites (988 vs. 254 patients per million) and at a higher-than-average risk for developing ESRD in the Southeastern US. Diabetes Mellitus (DM) is the leading cause of ESRD in all racial and ethnic groups, but occurs at a much higher rate among African-Americans, Hispanics and Native Americans (422,382.9, and 307.2 vs. 115 per million, respectively) compared to whites. In addition, African-Americans have the highest rate of hypertension-related ESRD, which far exceeds other racial and ethnic groups. As a result, hypertension remains a close second to DM as the leading cause of ESRD in the African-American community.(1)

In individuals with early CKD, African American women (odds ratio [OR], 1.47; 95% confidence interval [CI], 1.14 to 1.88), white men (OR, 1.85; 95% CI, 1.39 to 2.46), and white women (OR, 1.69; 95% CI, 1.28 to 2.22) had greater odds of hypertension control(blood pressure <130/80 mm Hg) than African American men. In individuals with late CKD, white men (OR, 1.66; 95% CI, 1.10 to 2.52) and white women (OR, 1.67; 95% CI, 1.13 to 2.46) had greater odds of hypertension control than African American men. No differences were seen between African American men and women with late CKD.(2)

In the United States, the incidence of ESRD from hypertensive CKD in African American men is 5 times that in white men and 1.4 times that in African American women.(2)

1b.5. If no or limited data on disparities from the measure as specified is reported in 1b4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations.

1. Alves TP, Lewis, J. Racial differences in chronic kidney disease (CKD) and end-stage renal disease (ESRD) in the United States: a social and economic dilemma. Clinical Nephrology.2010;74(1):S72-S77.

2. Duru OK, Li S, Jurkovitz C, Bakris G, et al. Race and Sex Differences in Hypertension Control in CKD: Results From the Kidney Early Evaluation Program (KEEP). Am J Kidney Dis. 2008 February;51(2):192-198.

1c. High Priority (previously referred to as High Impact)

The measure addresses:

- a specific national health goal/priority identified by DHHS or the National Priorities Partnership convened by NQF; OR
- a demonstrated high-priority (high-impact) aspect of healthcare (e.g., affects large numbers of patients and/or has a substantial impact for a smaller population; leading cause of morbidity/mortality; high resource use (current and/or future); severity of illness; and severity of patient/societal consequences of poor quality).

1c.1. Demonstrated high priority aspect of healthcare

Affects large numbers, A leading cause of morbidity/mortality, Frequently performed procedure, High resource use, Patient/societal consequences of poor quality, Severity of illness

1c.2. If Other:

1c.3. Provide epidemiologic or resource use data that demonstrates the measure addresses a high priority aspect of healthcare.

List citations in 1c.4.

Chronic kidney disease (CKD), affects approximately 13.1% of United States adults and leads to end-stage renal disease (ESRD), cardiovascular disease (CVD), and premature death.(1)

CKD affects up to 5% of the population and 25% of those aged 70 years or older. An additional 6% of the population has signs of kidney damage, which may progress to ESRD.(2)

CKD is now recognized as a major public health concern. It is estimated that approximately 26.3 million adults in the U.S. have nondialysis dependent kidney disease and over 470,000 have ESRD, collectively representing over 13% of the US population. In the next 20 years, the burden of CKD is expected to increase, with over 2 million individuals projected to be receiving renal replacement therapy (dialysis or kidney transplant) by 2030.(3)

CKD is a world-wide public health problem, with increasing incidence and prevalence, high cost, and poor outcomes. The major outcomes of CKD are loss of kidney function and development of cardiovascular disease (CVD). Increasing evidence indicates that the adverse outcomes of CKD can often be prevented or delayed through early detection and treatment. (4)

Currently, patients with CKD are five to 10 times more likely to die than to reach ESRD.(5)

Costs for CKD patients are now 23 percent of Medicare expenditures in the fee-for-service sector; when added to costs for ESRD patients, it appears that 31 percent of all Medicare expenditures are incurred by patients with a diagnosis of kidney disease.(6)

In 1993, costs for Medicare patients with CKD accounted for 3.8 percent of overall Medicare expenditures. By 2008, this had grown to 14.2 percent, in part reflecting growth in the number of recognized CKD patients.(6)

Hypertension is both a cause and a complication of CKD; more than 50% to 75% of patients with CKD have blood pressure >140/90mm Hg. In addition, hypertension is a risk factor for progression of kidney disease and for CVD. The goals of antihypertensive therapy in CKD are to lower blood pressure, reduce the risk of CVD, and slow progression of CKD (7).

Poorly controlled hypertension as either a cause or consequence of CKD predisposes to cardiovascular disease complications, as well as more rapid progression to ESRD.(7)

1c.4. Citations for data demonstrating high priority provided in 1a.3

1. Snyder JJ, Collins AJ. Association of Preventive Health Care with Atherosclerotic Heart Disease and Mortality in CKD. J Am Soc Nephrol. 2009 July; 20(7): 1614–1622.

2. Alves TP, Lewis, J. Racial differences in chronic kidney disease (CKD) and end-stage renal disease (ESRD) in the United States: a social and economic dilemma. Clinical Nephrology.2010;74(1):S72-S77.

3. Choi AI, Rodriguez RA, Bacchetti P, Bertenthal D, et al. White/Black Racial Differences in Risk of End-Stage Renal Disease and Death. Am J Med. 2009 July;122(7):672-678.

4. National Kidney Foundation. (2004) K/DOQI clinical practice guidelines on hypertension and antihypertensive agents in chronic kidney disease. Am J Kidney Dis. May;43(5 Suppl 1):S1-S290.

5. Gilbertson DT, Liu J, Xue JL, Louis TA, et al. Projecting the Number of Patients with End-Stage Renal Disease in the United States to the Year 2015. J Am Soc Nephrol 16:3736-3741, 2005.

6. 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, 2010.

7. Duru OK, Li S, Jurkovitz C, Bakris G, et al. Race and Sex Differences in Hypertension Control in CKD: Results From the Kidney Early Evaluation Program (KEEP). Am J Kidney Dis. 2008 February;51(2):192-198.

1c.5. If a PRO-PM (e.g. HRQoL/functional status, symptom/burden, experience with care, health-related behaviors), provide evidence that the target population values the measured PRO and finds it meaningful. (Describe how and from whom their input was obtained.)

2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. **Measures must be judged to meet the subcriteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.**

2a.1. Specifications The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

De.5. Subject/Topic Area (check all the areas that apply):

Renal, Renal : Chronic Kidney Disease (CKD)

De.6. Cross Cutting Areas (check all the areas that apply):

S.1. Measure-specific Web Page (Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)

<http://www.ama-assn.org/apps/listserv/x-check/qmeasure.cgi?submit=PCPI>

S.2a. If this is an eMeasure, HQMF specifications must be attached. Attach the zipped output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)

Attachment:

S.2b. Data Dictionary, Code Table, or Value Sets (and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)

Attachment Attachment: [ACE_or_ARB_data_file_-_2015.pdf](#)

S.3. For endorsement maintenance, please briefly describe any changes to the measure specifications since last endorsement date and explain the reasons.

S.4. Numerator Statement (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome)

IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm.

[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

S.5. Time Period for Data (What is the time period in which data will be aggregated for the measure, e.g., 12 mo, 3 years, look back to August for flu vaccination? Note if there are different time periods for the numerator and denominator.)

Once during the measurement period

S.6. Numerator Details (All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b) IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm.

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

S.7. Denominator Statement (Brief, narrative description of the target population being measured)

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

S.8. Target Population Category (Check all the populations for which the measure is specified and tested if any):

Senior Care

S.9. Denominator Details (All information required to identify and calculate the target population/denominator such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

See attached for EHR specifications.

For Claims/Administrative: See coding tables attached for coding (ICD-9-CM, ICD-10-CM, CPT)

S.10. Denominator Exclusions (Brief narrative description of exclusions from the target population)

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)

S.11. Denominator Exclusion Details (All information required to identify and calculate exclusions from the denominator such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1

page should be provided in an Excel or csv file in required format at S.2b)

[Append modifier to CPT II code 4009F-1P](#)

[Append modifier to CPT II code 4009F-2P](#)

S.12. Stratification Details/Variables (All information required to stratify the measure results including the stratification variables, definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b)

[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.](#)

S.13. Risk Adjustment Type (Select type. Provide specifications for risk stratification in S.12 and for statistical model in S.14-15)

[No risk adjustment or risk stratification](#)

If other:

S.14. Identify the statistical risk model method and variables (Name the statistical method - e.g., logistic regression and list all the risk factor variables. Note - risk model development and testing should be addressed with measure testing under Scientific Acceptability)

[As a process measure, no risk adjustment is necessary.](#)

S.15. Detailed risk model specifications (must be in attached data dictionary/code list Excel or csv file. Also indicate if available at measure-specific URL identified in S.1.)

Note: Risk model details (including coefficients, equations, codes with descriptors, definitions), should be provided on a separate worksheet in the suggested format in the Excel or csv file with data dictionary/code lists at S.2b.

S.15a. Detailed risk model specifications (if not provided in excel or csv file at S.2b)

S.16. Type of score:

[Rate/proportion](#)

If other:

S.17. Interpretation of Score (Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)

[Better quality = Higher score](#)

S.18. Calculation Algorithm/Measure Logic (Describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; aggregating data; risk adjustment; etc.)

[Calculation algorithm is included in data dictionary/code table attachment \(2a1.30\).](#)

S.19. Calculation Algorithm/Measure Logic Diagram URL or Attachment (You also may provide a diagram of the Calculation Algorithm/Measure Logic described above at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

S.20. Sampling (If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)

[IF a PRO-PM, identify whether \(and how\) proxy responses are allowed.](#)

[Our measure does not require sampling or a survey.](#)

S.21. Survey/Patient-reported data (If measure is based on a survey, provide instructions for conducting the survey and guidance on minimum response rate.)

[IF a PRO-PM, specify calculation of response rates to be reported with performance measure results.](#)

S.22. Missing data (specify how missing data are handled, e.g., imputation, delete case.)
Required for Composites and PRO-PMs.

S.23. Data Source (Check *ONLY* the sources for which the measure is SPECIFIED AND TESTED).
 If other, please describe in S.24.

[Administrative claims](#), [Electronic Clinical Data](#), [Electronic Clinical Data : Electronic Health Record](#), [Electronic Clinical Data : Registry](#), [Paper Medical Records](#)

S.24. Data Source or Collection Instrument (Identify the specific data source/data collection instrument e.g. name of database, clinical registry, collection instrument, etc.)

IF a PRO-PM, identify the specific PROM(s); and standard methods, modes, and languages of administration.

[N/A](#)

S.25. Data Source or Collection Instrument (available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

S.26. Level of Analysis (Check *ONLY* the levels of analysis for which the measure is SPECIFIED AND TESTED)

[Clinician : Group/Practice](#), [Clinician : Individual](#), [Clinician : Team](#)

S.27. Care Setting (Check *ONLY* the settings for which the measure is SPECIFIED AND TESTED)

[Ambulatory Care : Clinician Office/Clinic](#), [Dialysis Facility](#), [Home Health](#), [Other](#), [Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility](#)

If other: [Domiciliary](#), [Rest Home](#), or [Custodial Care Services](#)

S.28. COMPOSITE Performance Measure - Additional Specifications (Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)

2a. Reliability – See attached Measure Testing Submission Form

2b. Validity – See attached Measure Testing Submission Form

[MeasTesting_ACE_and_ARB-May_2015.docx](#)

3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

3a. Byproduct of Care Processes

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

3a.1. Data Elements Generated as Byproduct of Care Processes.

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

If other:

3b. Electronic Sources

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

3b.1. To what extent are the specified data elements available electronically in defined fields? (i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields)

[ALL data elements are in defined fields in electronic health records \(EHRs\)](#)

3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.

3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL.

Attachment:

3c. Data Collection Strategy

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

3c.1. Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.

IF a PRO-PM, consider implications for both individuals providing PROM data (patients, service recipients, respondents) and those whose performance is being measured.

It was determined that for patients who start out as Stage 3 and then change to Stage 4 or start out as Stage 4 and change to Stage 3, if the patient was in Stage 4 for 9 or more months consecutively within the measurement year, they would qualify for the measure.

There was clarification necessary in measure specifications related to documenting both hypertension and proteinuria simultaneously.

3c.2. Describe any fees, licensing, or other requirements to use any aspect of the measure as specified (e.g., value/code set, risk model, programming code, algorithm).

4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

4.1. Current and Planned Use

NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Planned	Current Use (for current use provide URL)
Public Reporting	Quality Improvement (Internal to the specific organization) RPA Kidney Quality Improvement Registry
Professional Certification or Recognition Program	https://www.medconcert.com/content/medconcert/RPAQIR/

4a.1. For each CURRENT use, checked above, provide:

- Name of program and sponsor

- Purpose
- Geographic area and number and percentage of accountable entities and patients included

This measure is included in the RPA Kidney Quality Improvement. The registry was approved as a 2014 Qualified Clinical Data Registry (QCDR). A QCDR is a CMS-approved entity that collects medical and/or clinical data for the purpose of patient and disease tracking to foster improvement in the quality of care provided to patients. It differs from a qualified PQRS registry in that it is not limited to measures within PQRS, thereby allowing for additional nephrology measures that are not currently included in PQRS. The RPA Kidney Quality Improvement is currently the only nephrology-specific QCDR. Data collection is still open for 2014; therefore number and percentages are not available at this time. The registry is open to nephrology professionals in the US.

4a.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons? (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)

4a.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement. (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.)

4b. Improvement

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4b.1. Progress on Improvement. (Not required for initial endorsement unless available.)

Performance results on this measure (current and over time) should be provided in 1b.2 and 1b.4. Discuss:

- **Progress (trends in performance results, number and percentage of people receiving high-quality healthcare)**
- **Geographic area and number and percentage of accountable entities and patients included**

Among patients with recognized CKD, use of ACEIs/ARBs is 56-57 percent, far below the 71-76 percent seen in those who also have hypertension or diabetes.

Among CKD patients with recognized cardiovascular disease, 61 percent use a lipid lowering agent.(1)

At two years prior to ESRD, 50–62 percent of CKD patients are using an ACEI, ARB, or renin inhibitor, and this falls to 33–44 percent in the three months before initiation.(1)

While use of ACEIs, ARBs, and renin inhibitors appears similar before and after initiation, analysis shows that half the patients using these drugs three months prior to ESRD are taken off them by one month after initiation, and new patients are started on these medications.(1)

Across age and race groups, approximately 60 percent of dialysis patients enrolled in Part D in 2007 used beta blockers, while angiotensin-converting enzyme inhibitors (ACEIs), angiotensin receptor blockers (ARBs), or renin inhibitors were used in approximately 50 percent.(1)

For both dialysis and transplant patients, beta blocker use predominated over ACEIs/ARBs/renin inhibitors.(1)

As of 2012 USRDS data, among both Medicare Part D enrollees and their younger MarketScan counterparts, approximately 60 percent of those with CKD and diagnosed diabetes receive an ACEI/ARB/renin inhibitor. Beta blocker use reaches 71–77 percent for patients with congestive heart failure and 59–73 percent in those with hypertension; the very high rates of cardiovascular events

and of sudden death among CKD patients may provide a background for studies assessing the value of beta blockers across the board in the CKD population. Dihydropyridine calcium channel blockers are far more widely used to treat hypertension and cardiovascular disease in the MarketScan population than in Medicare Part D enrollees, and potassium-sparing diuretics or combination products are rarely used in CKD patients. Thiazide and loop diuretics, in contrast, receive much wider use in both populations.

Given the progressive clinical problems with fluid overload and hypertension in patients with Stage 4–5 CKD, it is puzzling to note in these patients the reduced use of ACEI/ARBs, drugs well known to help heart failure. Unfortunately, concerns about lower eGFRs and possible hyperkalemia have led physicians to reduce the use of these medications. More research is needed into the causes of lowered utilization of ACEIs/ARBs to determine the risks and benefits with advancing CKD. (2)

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, 2010.
2. 1. U S Renal Data System, USRDS 2012 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, 2012.

4b.2. If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

4c. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

4c.1. Were any unintended negative consequences to individuals or populations identified during testing; OR has evidence of unintended negative consequences to individuals or populations been reported since implementation? If so, identify the negative unintended consequences and describe how benefits outweigh them or actions taken to mitigate them.

We are not aware of any unintended consequences related to this measurement.

5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

5. Relation to Other NQF-endorsed Measures

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.

No

5.1a. List of related or competing measures (selected from NQF-endorsed 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 (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)

0551 : Ace Inhibitor / Angiotensin Receptor Blocker Use and Persistence Among Members with Coronary Artery Disease at High Risk for Coronary Events

0594 : Post MI: ACE inhibitor or ARB therapy

0610 : Heart Failure - Use of ACE Inhibitor (ACEI) or Angiotensin Receptor Blocker (ARB) Therapy

0619 : Diabetes with Hypertension or Proteinuria - Use of an ACE Inhibitor or ARB

0621 : Non-Diabetic Nephropathy - Use of ACE Inhibitor or ARB Therapy

5.1b. If related or competing measures are not NQF endorsed please indicate measure title and steward.

5a. Harmonization

The measure specifications are harmonized with related measures;

OR

The differences in specifications are justified

5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):

Are the measure specifications completely harmonized?

5a.2. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.

5b. Competing Measures

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);

OR

Multiple measures are justified.

5b.1. If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):

Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)

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.

Appendix

A.1 Supplemental materials may be provided in an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.

Attachment:

Contact Information

Co.1 Measure Steward (Intellectual Property Owner): Renal Physicians Association

Co.2 Point of Contact: Dale, Singer, dsinger@renalmd.org, 301-468-3515-

Co.3 Measure Developer if different from Measure Steward: Renal Physicians Association

Co.4 Point of Contact: Dale, Singer, dsinger@renalmd.org, 301-468-3515-

Additional Information

Ad.1 Workgroup/Expert Panel involved in measure development

Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.

Louis H. Diamond, MBChB, FCP (SA), FACP, FHIMSS (Work Group Co-Chair) (Nephrology, Methodology) President, Quality Healthcare Consultants, Rockville, MD

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Jerry Yee, MD (Nephrology - Adult) Division Head, Nephrology and Hypertension, Henry Ford Hospital, Detroit, MI

PCPI measures are developed through cross-specialty, multi-disciplinary work groups. All medical specialties and other health care professional disciplines participating in patient care for the clinical condition or topic under study are invited to participate as equal contributors to the measure development process. In addition, the PCPI strives to include on its work groups individuals representing the perspectives of patients, consumers, private health plans, and employers. This broad-based approach to measure development ensures buy-in on the measures from all stakeholders and minimizes bias toward any individual specialty or stakeholder group. All work groups have at least two co-chairs who have relevant clinical and/or measure development expertise and who are responsible for ensuring that consensus is achieved and that all perspectives are voiced.

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 Year the measure was first released: 2007

Ad.3 Month and Year of most recent revision: 01, 2015

Ad.4 What is your frequency for review/update of this measure? Every 3 years or as new evidence becomes available that materially affects the measures.

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

Ad.6 Copyright statement:

Ad.7 Disclaimers:

Ad.8 Additional Information/Comments: The following updates were made on 11/07/11:

Specifications

De.2 The measure description was updated and "proteinuria" replaced "albuminuria."

2a1.4 The denominator language was updated, as indicated above. The definition of proteinuria was also updated.

Importance:

1c.1 Albuminuria was removed from Structure-Process-Outcome relationship text.

1c.4 Albuminuria was removed from the directness of evidence to the specified measure.