

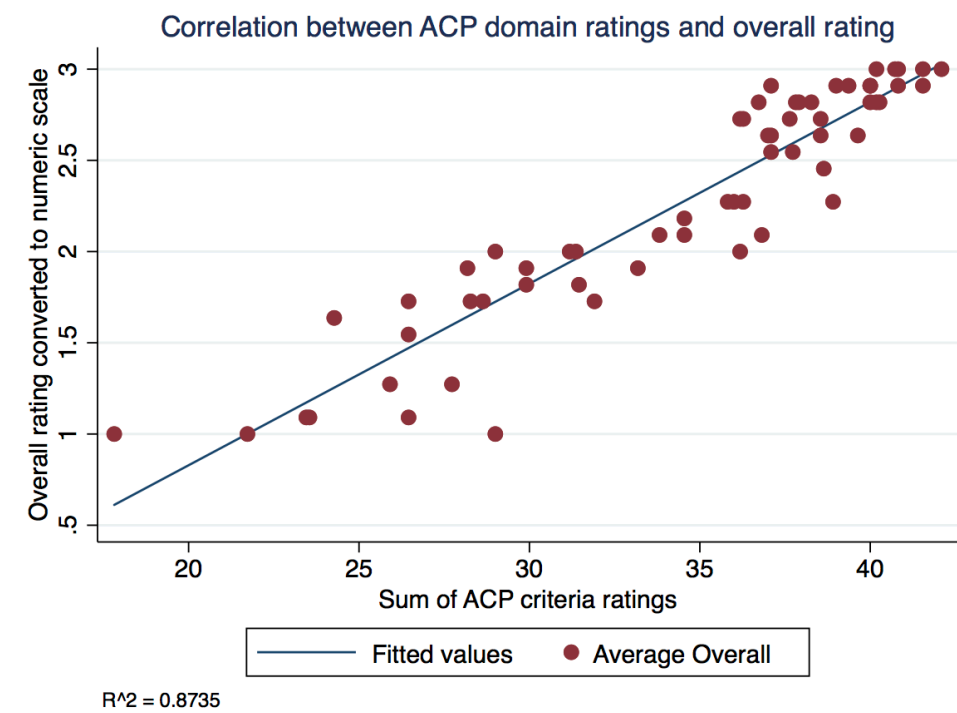
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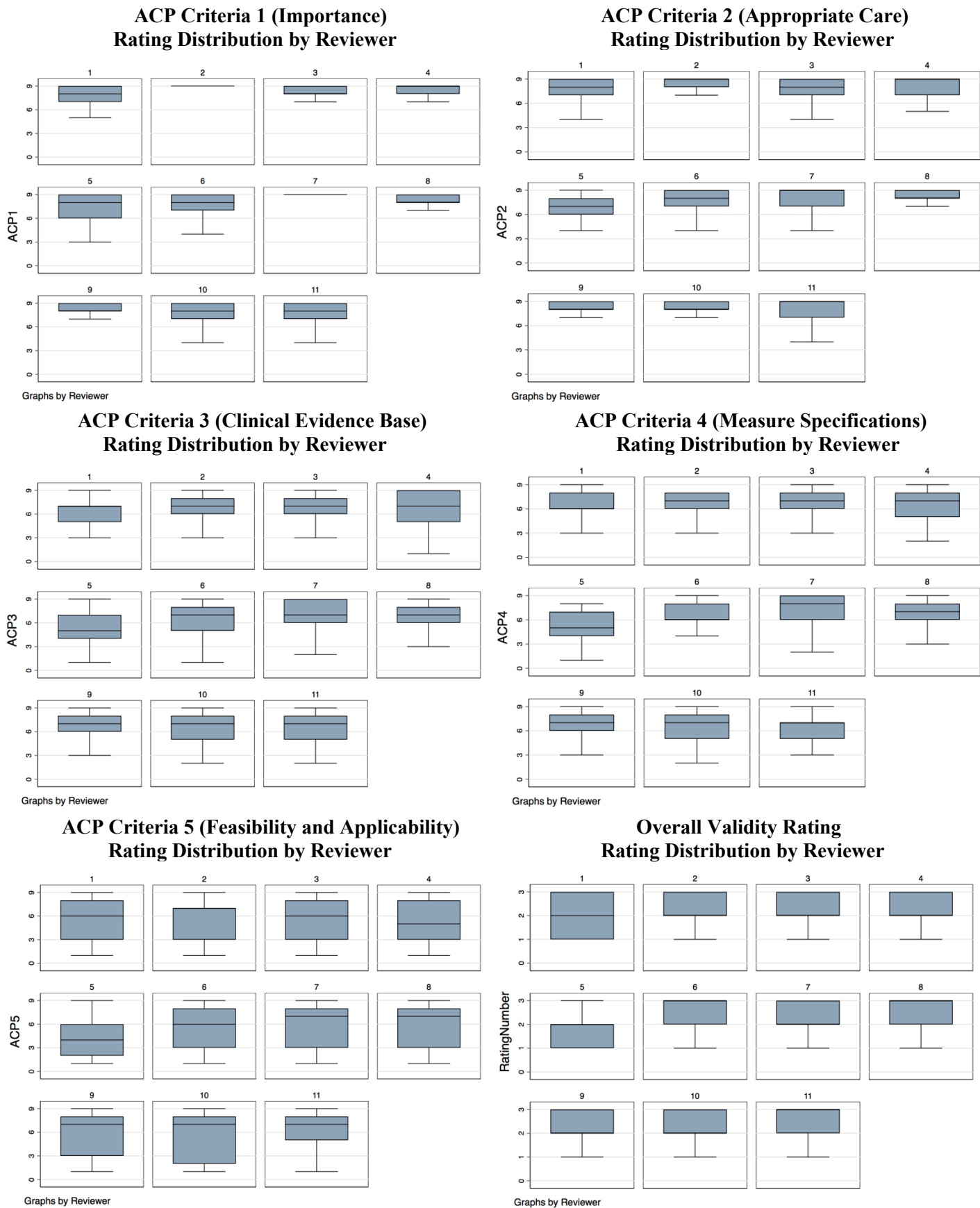
**Supplemental Table 1. ACP Measure Review Criteria.**

<b>DOMAIN 1. IMPORTANCE</b>
<ul style="list-style-type: none"> <li>• <i>Meaningful clinical impact:</i> Implementation of the measure will lead to a measurable and meaningful improvement in clinical outcomes.</li> <li>• <i>High impact:</i> Measure addresses a clinical condition that is high-impact (e.g., high prevalence, high morbidity or mortality, high severity of illness, and major patient or societal consequences).</li> <li>• <i>Performance gap:</i> Current performance does not meet best practices, and there is opportunity for improvement.</li> </ul>
<b>DOMAIN 2. APPROPRIATE CARE</b>
<ul style="list-style-type: none"> <li>• <i>Overuse:</i> Measure will promote stopping use of a test or treatment in general population or individuals where the potential harms outweigh the potential benefits.</li> <li>• <i>Underuse:</i> Measure will encourage use of a test or treatment in general population or individuals in whom the potential benefits outweigh the potential harms.</li> <li>• <i>Time interval:</i> Time interval to measure the intervention is evidence-based.</li> </ul>
<b>DOMAIN 3. CLINICAL EVIDENCE BASE</b>
<ul style="list-style-type: none"> <li>• <i>Source:</i> Evidence forming the basis of the measure is clearly defined with appropriate references.</li> <li>• <i>Evidence:</i> Evidence is high-quality, high-quantity, and consistent and represents current clinical knowledge.</li> </ul>
<b>DOMAIN 4. MEASURE SPECIFICATIONS</b>
<p><i>Clarity — numerator and denominator clearly defined:</i></p> <ul style="list-style-type: none"> <li>• For process measures, numerator includes a specific action that will benefit the patient, and denominator includes well-specified exclusions.</li> <li>• For outcome measures, numerators detail an outcome that is meaningful to the patient and under the influence of medical care.</li> <li>• Denominator includes well-specified and clinically appropriate exceptions to eligibility for the measure.</li> </ul> <p><i>Clarity — all components necessary to implement measure clearly defined:</i></p> <ul style="list-style-type: none"> <li>• <i>Validity:</i> The measure is correctly assessing what it is designed to measure, adequately distinguishing good and poor quality.</li> <li>• <i>Reliability:</i> Measurement is repeatable and precise, including when data are extracted by different people.</li> <li>• <i>Risk adjustment:</i> Risk adjustment is adequately specified for outcome measures.</li> </ul>
<b>DOMAIN 5. MEASURE FEASIBILITY AND APPLICABILITY</b>
<ul style="list-style-type: none"> <li>• <i>Attribution:</i> Level of attribution specified in the measure is appropriate (measure ties the outcomes to the appropriate unit of analysis) and is clearly stated.</li> <li>• <i>Physician's control:</i> Performance measure addresses an intervention that is under the influence of the physician being assessed.</li> <li>• <i>Usability:</i> Results of the measure provide information that will help the physician to improve care.</li> <li>• <i>Burden:</i> Data collection is feasible and burden is acceptable (low, moderate, or high)</li> </ul>

Supplemental Figure 1. Correlation between ACP domain ratings and overall rating.



**Supplemental Figure 2. Box plots showing median, interquartile ranges (IQR), and minimum and maximum values of American College of Physicians (ACP) domain ratings and overall rating across metrics by reviewer (1-11).**



**Supplemental Table 2. Median and interquartile ranges (IQR) of ACP domain ratings.**

Measure Category and Title	ACP 1: Importance Median [IQR]	ACP 2: Appropriateness Median [IQR]	ACP 3: Clinical Evidence Median [IQR]	ACP 4: Specifications Median [IQR]	ACP 5: Feasibility Median [IQR]
<b>CKD Prevention</b>					
Controlling High Blood Pressure	9 [9-9]	8 [5-9]	7 [7-8]	7 [6-7]	8 [6-8]
Preventive Care and Screening: Screening for High Blood Pressure and Follow-Up Documented	7 [7-8]	7 [7-8]	7 [7-8]	8 [8-9]	8 [8-8]
HEDIS-Controlling High Blood Pressure	8 [8-9]	6 [4-6]	2 [2-3]	6 [5-6]	7 [6-7]
Diabetes: Hemoglobin A1c Poor Control	9 [9-9]	9 [9-9]	9 [8-9]	6 [5-6]	3 [2-3]
Diabetes: Low Density Lipoprotein (LDL-C) Control (<100 mg/dL)	7 [5-8]	6 [6-6]	3 [3-4]	8 [7-8]	3 [2-3]
*HEDIS-Comprehensive Diabetes Care	9 [8-9]	8 [8-9]	9 [8-9]	6 [5-7]	2 [2-3]
*Diabetes: Medical Attention for Nephropathy	8 [8-9]	8 [8-9]	7 [6-9]	6 [5-7]	4 [2-6]
<b>Slowing CKD Progression</b>					
Adult Kidney Disease: Blood Pressure Management	9 [9-9]	8 [8-9]	8 [7-8]	7 [7-8]	8 [8-8]
Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy	9 [9-9]	9 [8-9]	8 [7-9]	5 [4-6]	6 [5-8]
<b>CKD Management</b>					
Advance Directives Completed	9 [9-9]	9 [9-9]	8 [7-8]	7 [7-8]	8 [8-9]
Adult Kidney Disease: Laboratory Testing (Lipid Profile)	4 [4-5]	4 [4-5]	5 [3-5]	6 [5-7]	5 [4-6]
<b>Advanced CKD and Kidney Replacement Planning</b>					
Optimal End Stage Renal Disease (ESRD) Starts	9 [9-9]	9 [8-9]	8 [6-8]	8 [7-9]	7 [7-8]
<b>Dialysis Management</b>					
Adult Kidney Disease: Catheter Use for Greater Than or Equal to 90 Days	9 [9-9]	8 [8-9]	9 [8-9]	8 [7-8]	8 [8-8]
Vascular Access Type (VAT) Measure Topic – Catheter > 90 Days Clinical Measure	9 [9-9]	8 [8-8]	9 [8-9]	7 [7-8]	8 [8-8]
Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement	9 [9-9]	8 [8-8]	9 [7-9]	8 [7-8]	7 [7-8]
Adult Kidney Disease: Catheter Use at Initiation of Hemodialysis	9 [9-9]	8 [8-9]	9 [8-9]	7 [6-8]	7 [5-7]
Arteriovenous Fistula Rate	9 [9-9]	7 [6-8]	7 [6-7]	7 [5-8]	7 [7-8]
Vascular Access Type (VAT) Measure Topic – Arteriovenous Fistula (AVF) Clinical Measure	9 [9-9]	8 [7-8]	7 [7-7]	6 [5-7]	7 [7-8]

Peritoneal Dialysis Catheter Exit Site Infection Rate	9 [9-9]	9 [9-9]	7 [7-8]	7 [7-8]	6 [5-6]
†Peritoneal Dialysis Catheter Success Rate	8 [8-8]	8 [7-8]	5 [5-6]	5 [4-6]	2[1-2]
†Arterial Complication Rate Following Arteriovenous Access Intervention	7 [7-8]	8 [7-8]	6 [5-7]	3 [3-5]	1 [1-1]
†Arteriovenous Fistulae Thrombectomy Success Rate	7 [6-8]	6 [6-7]	4 [3-5]	5 [4-6]	1 [1-1]
†Arteriovenous Graft Thrombectomy Success Rate	7 [7-8]	6 [6-7]	4 [3-5]	5 [3-6]	1 [1-1]
Adult Kidney Disease: Hemodialysis Adequacy: Solute	8 [7-9]	8 [8-9]	7 [6-7]	8 [7-8]	8 [8-8]
Kt/V Dialysis Adequacy Comprehensive Clinical Measure	8 [8-8]	8 [7-8]	7 [7-7]	7 [7-8]	8 [8-8]
Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute	8 [8-9]	8 [7-8]	6 [6-7]	8 [8-8]	8 [8-8]
Adequacy of Volume Management	9 [8-9]	9 [8-9]	1 [1-2]	2 [1-2]	5 [5-6]
Pediatric Kidney Disease: Adequacy of Volume Management	9 [9-9]	9 [8-9]	2 [1-3]	2 [2-4]	7 [7-7]
ESRD Patients Receiving Dialysis: Hemoglobin Level <9g/dL	8 [7-9]	9 [8-9]	7 [6-8]	8 [8-9]	8 [8-9]
Anemia Management Reporting Measure	8 [8-9]	8 [8-9]	7 [6-9]	7 [7-9]	7 [7-8]
Standardized Transfusion Ratio (STrR) Clinical Measure	8 [8-8]	9 [8-9]	7 [7-7]	6 [6-7]	6 [6-7]
Pediatric Kidney Disease: ESRD Patients Receiving Dialysis Hemoglobin Level < 10g/dL	8 [8-9]	9 [8-9]	8 [8-9]	8 [8-9]	8 [8-9]
Mineral Metabolism Reporting Measure	8 [7-9]	8 [8-8]	7 [7-7]	8 [8-9]	9 [8-9]
Standardized Readmission Ratio (SRR) Clinical Measure	9 [8-9]	9 [9-9]	7 [7-8]	7 [6-8]	7 [6-8]
Avoidance of Utilization of High Ultrafiltration Rate (>= 13 ml/kg/hour)	8 [8-8]	7 [7-8]	7 [6-7]	8 [7-8]	8 [7-8]
Infection Monitoring: National Healthcare Safety Network (NHSN) Bloodstream Infection in Hemodialysis Patients Clinical Measure	9 [8-9]	9 [9-9]	8 [7-8]	6 [5-6]	6 [5-6]
Transplant Referral	9 [9-9]	9 [8-9]	8 [8-9]	4 [4-5]	8 [8-9]
Adult Kidney Disease: Referral to Hospice	8 [8-9]	8 [8-9]	6 [5-6]	6 [6-7]	7 [7-7]
Rate of Timely Documentation Transmission to Dialysis Unit/Referring Physician	9 [9-9]	9 [9-9]	5 [3-5]	7 [6-8]	1 [1-2]
Advance Care Planning (Pediatric Kidney Disease)	9 [9-9]	9 [8-9]	7 [7-7]	7 [5-7]	7 [6-7]
<b>Broad Measures</b>					
Pneumonia Vaccination Status for	9 [9-9]	9 [9-9]	9 [9-9]	8 [6-9]	7 [6-8]

Older Adults					
Preventive Care and Screening: Influenza Immunization	9 [9-9]	9 [9-9]	9 [9-9]	7 [6-8]	7 [6-8]
*Preventive Care and Screening: Tobacco Use: Screening and Cessation Intervention	9 [8-9]	9 [9-9]	9 [9-9]	7 [6-8]	7 [6-8]
One-Time Screening for Hepatitis C Virus (HCV) for Patients at Risk	9 [9-9]	9 [9-9]	6 [5-7]	8 [7-8]	7 [7-8]
*Diabetes Mellitus: Diabetic Foot and Ankle Care, Peripheral Neuropathy – Neurological Evaluation	8 [8-9]	8 [8-9]	8 [8-8]	6 [5-6]	3 [3-4]
*Diabetes Mellitus: Diabetic Foot and Ankle Care, Ulcer Prevention – Evaluation of Footwear	8 [7-9]	8 [8-9]	6 [5-7]	5 [4-6]	1 [1-1]
*Preventive Care and Screening: Body Mass Index (BMI)	7 [6-8]	7 [6-7]	5 [5-6]	6 [5-6]	3 [3-4]
Medication Reconciliation Post-Discharge	8 [8-9]	9 [8-9]	8 [8-8]	8 [8-9]	8 [7-9]
Documentation of Current Medications in the Medical Record	8 [8-9]	8 [8-9]	6 [5-7]	8 [7-8]	6 [6-7]
*Use of High-Risk Medications in the Elderly	6 [5-7]	5 [4-5]	5 [4-5]	4 [3-6]	1 [1-3]
Advance Care Plan	9 [9-9]	9 [9-9]	8 [7-8]	7 [5-7]	7 [6-7]
*Falls: Plan of Care	8 [7-8]	8 [7-8]	7 [5-7]	7 [7-8]	3 [2-5]
*Falls: Risk Assessment	8 [7-9]	8 [7-9]	6 [5-6]	8 [7-8]	3 [2-3]
*Falls: Screening for Future Fall Risk	9 [9-9]	9 [8-9]	5 [5-5]	7 [6-7]	2 [2-3]
†Prevention of Catheter-Related Bloodstream Infections (CRBSI): Central Venous Catheter (CVC) Insertion Protocol	9 [9-9]	9 [9-9]	9 [9-9]	7 [7-8]	2 [1-3]
†Surgical Site Infection (SSI)	7 [7-8]	7 [6-8]	7 [7-8]	6 [6-7]	1 [1-1]
†Radiology: Exposure Time Reported for Procedures Using Fluoroscopy	7 [7-8]	7 [7-8]	6 [5-6]	5 [4-5]	1 [1-1]
†Hospitalization Rate Following Procedures Performed under Procedure Sedation Analgesia	5 [3-5]	5 [3-5]	5 [5-5]	4 [2-4]	1 [1-1]
<b>Patient Reported Outcome Measures</b>					
Patient Experience of Care: In-Center Hemodialysis Consumer Assessment of Healthcare Providers and Systems (ICH CAHPS) Survey Clinical Measure	7 [6-8]	6 [6-7]	5 [4-6]	6 [6-7]	6 [4-7]
Functional Outcome Assessment	7 [6-7]	6 [6-7]	6 [5-6]	6 [5-7]	6 [3-7]

\*Metric is PCP-focused.

†Metric should not be attributable to nephrologists.

## Supplemental Appendix 1. Supplemental methods.

The American Society of Nephrology Quality Committee is composed of 11 volunteer nephrologists, encompassing full-time clinicians and clinician-researchers from varied regions of the country. The committee has representation from academic medical centers, community-based practice, adult and pediatric nephrology, and transplant nephrology. Several committee members are researchers with expertise in quality measurement.

A comprehensive assessment of quality measures related to kidney disease were obtained from multiple established kidney and quality metric organizations as described in the methods section. The list of quality measures was compiled by multiple committee members and verified by other members for accuracy and comprehensiveness. Two rounds of metric ratings were conducted. In the first round in spring 2019, members were e-mailed the list of measures containing the category, description, measure specifications, and additional publicly available information for each quality measure. For each measure, members independently rated the five ACP criteria (importance, appropriate care, clinical evidence base, measure specifications, and measure feasibility and applicability) as yes/no. Members assigned an overall high/medium/low rating and provided comments of their global assessment of the measure and any unintended consequences. The second round of ratings was conducted during an in-person meeting in July 2019 using a formal group process. Members were provided an aggregate summary of the first round of ratings. Measures were discussed as a group, which was moderated by the former committee chair who did not submit ratings. Following a group discussion of each measure, members submitted individual ratings of the measure. The ACP criteria were rated on a 9-point scale, with 1 to 3 indicating “does not meet criteria,” 4 to 6 “meets some criteria,” and 7 to 9 “meets criteria.” Each measure also received an overall high/medium/low rating. All ratings were anonymous and had equal weight from each committee member.

The median ACP ratings and average high/medium/low ratings were calculated for the two rounds of ratings. The overall ratings of high/medium/low did not change between the first and second round. Results presented are from the second round of ratings. The ACP criteria ratings were compared to the global high/medium/low ratings. In a few cases, the ACP ratings were higher than the overall rating (e.g. the median ACP criteria were 4 or 5 or “meets some criteria,” but the measure was rated as overall low validity). Individual comments from the first round and group discussion comments from the second round were summarized and listed in Table 1 and the supplemental tables.

We assessed internal validity by calculating the mean rating for each ACP criteria and the overall ratings by reviewer. No members were systematically stricter than other raters, within a margin of 1 point (Supplemental Figure 2). We examined the relationship between ACP criteria ratings and overall ratings and found a high correlation ( $R^2 = 0.8735$ , Supplemental Figure 1). We calculated intraclass correlation coefficients (ICC) to assess absolute agreement and consistency of agreement among multiple raters for multiple targets, using a two-way random-effects model. There was moderate agreement of ACP criteria ratings (ACP1 ICC = 0.59; ACP2 ICC = 0.63; ACP3 ICC = 0.73; ACP4 ICC = 0.60; ACP5 ICC = 0.82) and overall ratings (ICC = 0.68) among committee members.



**Supplemental Table 3a. CKD prevention measures.**

Measure 1:	*Controlling High Blood Pressure									
Category:	CKD Prevention, Hypertension									
Description:	Percentage of patients 18 through 85 years of age who had a diagnosis of hypertension and whose blood pressure was adequately controlled (< 140/90 mmHg) during the measurement period.									
RPA Non-PQRS Measure Number or PQRS Number  236				NQF Number if endorsed  0018			eCQM 2019 Number if applicable  165v7		MIPS Nephrology 2018 or ESRD QIP 2019 Measure  No	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
HIGH	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• BP goals potentially lower based on ACC/AHA Guideline, which recommend &lt;130/80 mm Hg in both elderly and non-elderly patients.</li><li>• Masked HTN and white coat HTN is not accounted for. Office BP measurement may not be valid or reliable.</li><li>• Does not incorporate home BP or ABPM.</li><li>• Unclear BP goal in dialysis patients.</li></ul>	
	0/11	4/11	7/11	9/9	8/9	7/9	7/9	8/9		

Measure 2:	*Preventive Care and Screening: Screening for High Blood Pressure and Follow-Up Documented									
Category:	CKD Prevention, Hypertension									
Description:	Percentage of patients aged 18 years and older seen during the reporting period who were screened for high blood pressure AND a recommended follow-up plan is documented based on the current blood pressure(BP) reading as indicated.									
RPA Non-PQRS Measure Number or PQRS Number  317				NQF Number if endorsed  N/A			eCQM 2019 Number if applicable  22v7		MIPS Nephrology 2018 or ESRD QIP 2019 Measure  MIPS	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
HIGH	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	• Well accepted part of high quality patient care, but may be already universally practiced. • Not clear what constitutes a recommended follow-up plan, so may add documentation burden without meaningfully improving clinical care.	
	$\frac{0}{11}$	$\frac{4}{11}$	$\frac{7}{11}$	$\frac{7}{9}$	$\frac{7}{9}$	$\frac{7}{9}$	$\frac{8}{9}$	$\frac{8}{9}$		

Measure 3:	*HEDIS-Controlling High Blood Pressure									
Category:	CKD Prevention, Hypertension									
Description:	Adults 18-59 years of age whose blood pressure was <140/90 mm Hg. Adults 60-85 years of age, with a diagnosis of diabetes, whose blood pressure was <140/90 mm Hg. Adults 60-85 years of age, without a diagnosis of diabetes, whose blood pressures was <150/90 mm Hg.									
RPA Non-PQRS Measure Number or PQRS Number  N/A				NQF Number if endorsed  N/A			eCQM 2019 Number if applicable  N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure  N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• BP goals potentially lower based on ACC/AHA Guideline, which recommend &lt;130/80 mm Hg in both elderly and non-elderly patients.</li><li>• Goal of SBP &lt;130 mm Hg may be difficult to achieve in patients with very wide pulse pressures.</li><li>• Stated BP goal may not be appropriate for everyone, need to consider appropriate exceptions for denominator.</li><li>• Masked HTN and white coat HTN are not accounted for. Non-rigorous office BP measurement may not be valid or reliable.</li><li>• Sitting vs. standing BP and measurement technique is important to specify.</li></ul>	
	$\frac{2}{11}$	$\frac{8}{11}$	$\frac{1}{11}$	$\frac{8}{9}$	$\frac{6}{9}$	$\frac{2}{9}$	$\frac{6}{9}$	$\frac{7}{9}$		

Measure 4:	Diabetes: Hemoglobin A1c Poor Control									
Category:	CKD Prevention, Diabetes									
Description:	Percentage of patients 18 -75 years of age with diabetes who had hemoglobin A1c > 9.0% during the measurement period.									
RPA Non-PQRS Measure Number or PQRS Number  001				NQF Number if endorsed  0059			eCQM 2019 Number if applicable  122v7		MIPS Nephrology 2018 or ESRD QIP 2019 Measure  MIPS	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	• Important part of high quality care and relevant to kidney outcomes, but typically the primary	

	$\frac{1}{11}$	$\frac{8}{11}$	$\frac{2}{11}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{6}{9}$	$\frac{3}{9}$	responsibility of PCP or endocrinologist. • Consider adequate adjustment for patient factors, otherwise may result in dropping sick patients from care. • May not be accurate in late-stage CKD patients receiving erythropoiesis-stimulating agents.
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Measure 5:	Diabetes: Low Density Lipoprotein (LDL-C) Control (<100 mg/dL)									
Category:	CKD Prevention, Diabetes									
Description:	Percentage of patients 18–75 years of age with diabetes whose LDL-C was adequately controlled (<100 mg/dL) during the measurement period.									
RPA Non-PQRS Measure Number or PQRS Number				NQF Number if endorsed			eCQM 2015 Number if applicable		MIPS Nephrology 2018 or ESRD QIP 2019 Measure	
2				0064			163v3		No	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Newer evidence and guidelines recommend that management should be independent of cholesterol levels.</li><li>• Unclear delineation between nephrologist and PCP.</li><li>• Dialysis patients should be excluded from denominator, as evidence shows no benefit for statins in this population.</li></ul>	
	$\frac{3}{11}$	$\frac{8}{11}$	$\frac{0}{11}$	$\frac{7}{9}$	$\frac{6}{9}$	$\frac{3}{9}$	$\frac{8}{9}$	$\frac{3}{9}$		

<b>Measure 6:</b>	*HEDIS-Comprehensive Diabetes Care								
<b>Category:</b>	CKD Prevention, Diabetes								
<b>Description:</b>	Assesses adults 18–75 years of age with diabetes (type 1 and type 2) who had each of the following: <ul style="list-style-type: none"> <li>• Hemoglobin A1c (HbA1c) testing.</li> <li>• HbA1c poor control (&gt;9.0%).</li> <li>• HbA1c control (&lt;8.0%).</li> <li>• HbA1c control (&lt;7.0%) for a selected population.</li> <li>• Eye exam (retinal) performed.</li> <li>• Medical attention for nephropathy.</li> <li>• BP control (&lt;140/90 mm Hg).</li> </ul>								
RPA Non-PQRS Measure Number			NQF Number			eCQM 2019 Number			MIPS Nephrology 2018 or

or PQRS Number N/A				if endorsed 0731		if applicable N/A			ESRD QIP 2019 Measure N/A
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	• Should be dominant responsibility of PCP or endocrinologist. • BP goals uncertain after recent ACC/AHA guideline. • Consider exclusion for dialysis, as HbA1c not reliable and BP goal is unclear.
	$\frac{1}{11}$	$\frac{7}{11}$	$\frac{3}{11}$	$\frac{9}{9}$	$\frac{8}{9}$	$\frac{9}{9}$	$\frac{6}{9}$	$\frac{2}{9}$	

Measure 7:	*Diabetes: Medical Attention for Nephropathy								
Category:	CKD Prevention, Diabetes								
Description:	The percentage of patients 18-75 years of age with diabetes who had a nephropathy screening test or evidence of nephropathy during the measurement period.								
RPA Non-PQRS Measure Number or PQRS Number 119				NQF Number if endorsed 0062		eCQM 2019 Number if applicable 134v7		MIPS Nephrology 2018 or ESRD QIP 2019 Measure MIPS	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• If seeing a nephrologist, likely has already undergone kidney disease screening tests.</li><li>• American Diabetes Association guidelines recommend both eGFR and UACR testing.</li><li>• ACE-I/ARB use should not count as screening for nephropathy.</li><li>• Denominator not adjusted for patients with limited life expectancy in which nephropathy workup may not improve care.</li></ul>
	$\frac{1}{11}$	$\frac{8}{11}$	$\frac{2}{11}$	$\frac{8}{9}$	$\frac{8}{9}$	$\frac{7}{9}$	$\frac{6}{9}$	$\frac{4}{9}$	

**Supplemental Table 3b. Slowing CKD progression measures.**

Measure 8:	Adult Kidney Disease: Blood Pressure Management									
Category:	Slowing CKD Progression, Hypertension									
Description:	Percentage of patient visits for those 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]) with a blood pressure < 140/90 mm Hg OR ≥ 140/90 mm Hg with a documented plan of care.									
RPA Non-PQRS Measure Number or PQRS Number 122				NQF Number if endorsed N/A			eCQM 2019 Number if applicable N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure MIPS	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
HIGH	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Very important metric as a primary factor affecting CVD events and mortality.</li><li>• Goal of &lt;140/90 mm Hg not reflective of more recent ACC/AHA guidelines, recommending &lt;130/80 mm Hg.</li><li>• Denominator should include exclusions. Goal may not be appropriate for patients with advanced CKD 5 nearing dialysis.</li><li>• Issues surrounding nonadherence to medications.</li></ul>	
	0/11	1/11	10/11	9/9	8/9	8/9	7/9	8/9		

Measure 9:	Angiotensin Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy (PCPI Measure #: AKID-2)									
Category:	Slowing CKD Progression, Hypertension/CKD									
Description:	Percentage of patients aged 18 years and older with a diagnosis of CKD (Stages 1-5, not receiving RRT) and proteinuria who were prescribed ACE inhibitor or ARB therapy within a 12-month period.									
RPA Non-PQRS Measure Number or PQRS Number  AKID-2				NQF Number if endorsed  1662			eCQM 2019 Number if applicable  N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure  N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
HIGH	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	• Strong evidence for ACEi/ARB use in delaying CKD progression; evidence stronger with higher proteinuria and earlier CKD stages. • Does not specify quantity of proteinuria, or proteinuria versus albuminuria.	
	$\frac{0}{11}$	$\frac{1}{11}$	$\frac{10}{11}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{8}{9}$	$\frac{5}{9}$	$\frac{6}{9}$		

									<ul style="list-style-type: none"><li>• May cause increased rates of hyperkalemia and/or creatinine elevation, particularly in advanced CKD stages, and requires monitoring.</li></ul>
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**Supplemental Table 3c. CKD management measures.**

Measure 10:	Advance Directives Completed									
Category:	CKD Management, Advance Care Planning									
Description:	Percentage of patients aged 18 years and older with a diagnosis of Stage 3, 4 & 5 chronic kidney disease (CKD) who have advance directives or end of life medical orders completed based on their preferences.									
RPA Non-PQRS Measure Number or PQRS Number RPAQIR18				NQF Number if endorsed N/A			eCQM 2019 Number if applicable N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
HIGH	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Important part of high quality care.</li><li>• Unclear need in young patients with mild CKD.</li><li>• Would favor attributing to nephrologist only for CKD Stages 4 and 5. Otherwise, should be dominant responsibility of PCP.</li><li>• Documentation burden may misdirect provider time away from other patient needs, and documentation may not reflect meaningful discussions.</li></ul>	
	0 11	1 11	10 11	9 9	9 9	8 9	7 9	8 9		

Measure 11:	Adult Kidney Disease: Laboratory Testing (Lipid Profile)									
Category:	CKD Management, Lipid Testing									
Description:	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.									
RPA Non-PQRS Measure Number or PQRS Number 121				NQF Number if endorsed 1668			eCQM 2019 Number if applicable N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Checking the lipid panel may not lead to or inform appropriate management of cardiovascular risk if statins are indicated irrespective of the LDL level.</li><li>• Testing not necessary every 12 months.</li><li>• Not necessary in patients already on high dose statins.</li></ul>	
	$\frac{4}{11}$	$\frac{7}{11}$	$\frac{0}{11}$	$\frac{4}{9}$	$\frac{4}{9}$	$\frac{5}{9}$	$\frac{6}{9}$	$\frac{5}{9}$		

									<ul style="list-style-type: none"><li>• The 2013 KDIGO Lipid Management Guideline recommends statin use in all persons with CKD age <math>\geq</math> 50 years regardless of lipid levels.</li></ul>
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**Supplemental Table 3d. Advanced CKD and kidney replacement planning measures.**

Measure 12:	Optimal End Stage Renal Disease (ESRD) Starts									
Category:	Advanced CKD and Kidney Replacement Planning, Dialysis Access									
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.									
RPA Non-PQRS Measure Number or PQRS Number				NQF Number if endorsed			eCQM 2019 Number if applicable		MIPS Nephrology 2018 or ESRD QIP 2019 Measure	
N/A				2594			N/A		N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
HIGH	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Current catheter rate at HD start is extremely high, increasing the risk of bloodstream infections. This metric is all-encompassing towards improving quality of initiation of dialysis care.</li><li>• Needs appropriate risk adjustment. May encourage patient selection towards healthier persons with fewer social risk factors.</li><li>• Dialysis units in rural areas where access to vascular access surgeons, transplant evaluation centers, and peritoneal dialysis may be unfairly penalized.</li><li>• Very applicable to new payment models, such as the ESRD Treatment Choices Model.</li></ul>	
	0/11	0/11	11/11	9/9	9/9	8/9	8/9	7/9		





Category:	Dialysis Management, Dialysis Access									
Description:	<p>Percentage of patients aged 18 years and older with a diagnosis of End Stage Renal Disease (ESRD) who initiate maintenance hemodialysis during the measurement period, whose mode of vascular access is a catheter at the time maintenance hemodialysis is initiated.</p> <p>NOTE: This is a two part measure which is paired with Measure #330: Adult Kidney Disease: Catheter Use for Greater Than or Equal to 90 Days. If there is documentation that the patient initiated hemodialysis with a catheter, then Measure #330 should also be reported.</p>									
RPA Non-PQRS Measure Number or PQRS Number 329				NQF Number if endorsed N/A			eCQM 2019 Number if applicable N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure MIPS	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
HIGH	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Attributable to providers delivering care prior to dialysis initiation, if seen by a nephrologist.</li><li>• Needs appropriate risk adjustment.</li><li>• Denominator appropriately excludes for patients whom a long-term vascular access is not appropriate (e.g. elderly, imminent transplantation) and patients that decline AVG/AVF.</li></ul>	
	$\frac{0}{11}$	$\frac{1}{11}$	$\frac{10}{11}$	$\frac{9}{9}$	$\frac{8}{9}$	$\frac{9}{9}$	$\frac{7}{9}$	$\frac{7}{9}$		

Measure 17:	Arteriovenous Fistula Rate (PCPI Measure #: AKID-8)									
Category:	Dialysis Management, Dialysis Access									
Description:	Percentage of calendar months within a 12-month period during which patients aged 18 years and older with a diagnosis of ESRD and receiving maintenance hemodialysis are using an autogenous arteriovenous (AV) fistula with two needles.									
RPA Non-PQRS Measure Number or PQRS Number AKID-8				NQF Number if endorsed N/A			eCQM 2019 Number if applicable N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Important metric and addresses relevant performance gap.</li><li>• Needs adequate adjustment for patient factors.</li><li>• Appropriately excludes populations such as older patients in whom AVGs may be preferable, or those expecting imminent transplantation, such as from a living donor.</li></ul>	
	$\frac{1}{11}$	$\frac{9}{11}$	$\frac{1}{11}$	$\frac{9}{9}$	$\frac{7}{9}$	$\frac{7}{9}$	$\frac{7}{9}$	$\frac{7}{9}$		

									<ul style="list-style-type: none"> <li>• Relies on availability of vascular surgeons. Vascular access type may depend on surgeon preference.</li> <li>• Does not reflect most recent KDOQI Vascular Access guidelines. Should support care individualization &amp; shared decision making.</li> </ul>
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Measure 18:	Vascular Access Type (VAT) Measure Topic – Arteriovenous Fistula (AVF) Clinical Measure								
Category:	Dialysis Management, Dialysis Access								
Description:	Percentage of patient-months on hemodialysis during the last hemodialysis treatment of the month using an autogenous AV fistula with two needles. Numerator: Patient-months in the denominator where an autogenous AV fistula with two needles was the means of access. Denominator: Number of Medicare patient-months at the facility during the measurement period.								
RPA Non-PQRS Measure Number or PQRS Number  N/A				NQF Number if endorsed  0257		eCQM 2019 Number if applicable  N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure  QIP	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	• Supported by evidence and there is a performance gap, but it may not be the best option for all patients (e.g. elderly, those expecting imminent transplantation). • Needs to adequately account for patient-related factors and access to vascular surgery. • Should support role for patient individualization and shared decision making.
	0 11	8 11	3 11	9 9	8 9	7 9	6 9	7 9	

<b>Measure 19:</b>	Peritoneal Dialysis Catheter Exit Site Infection Rate								
<b>Category:</b>	Dialysis Management, Dialysis Access								
<b>Description:</b>	Percentage of patients aged 18 years and older with an exit site infection within 2 weeks of a peritoneal dialysis (PD) catheter invasive intervention.								
RPA Non-PQRS Measure Number or PQRS Number RPAQIR17				NQF Number if endorsed N/A		eCQM 2019 Number if applicable N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure N/A	

Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments
<b>HIGH</b>	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"> <li>• Measure of PD catheter complication is important for high quality care, but is not attributable to the nephrologist.</li> <li>• May result in more standardization of catheter placement, however may discourage surgeons from placing PD catheters.</li> </ul>
	$\frac{0}{11}$	$\frac{5}{11}$	$\frac{6}{11}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{7}{9}$	$\frac{7}{9}$	$\frac{6}{9}$	

Measure 20:	†Peritoneal Dialysis Catheter Success Rate									
Category:	Dialysis Management, Dialysis Access									
Description:	Percentage of clinically successful peritoneal dialysis (PD) catheter placements.									
RPA Non-PQRS Measure Number or PQRS Number RPAQIR16				NQF Number if endorsed N/A			eQCM 2019 Number if applicable N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
LOW	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Not appropriately attributed to nephrologist.</li><li>• Unsure whether there is meaningful variation in success rates.</li><li>• Definition of successful is not clear, so reporting may be subjective.</li></ul>	
	$\frac{8}{11}$	$\frac{3}{11}$	$\frac{0}{11}$	$\frac{8}{9}$	$\frac{8}{9}$	$\frac{5}{9}$	$\frac{5}{9}$	$\frac{2}{9}$		

Measure 21:	†Arterial Complication Rate Following Arteriovenous Access Intervention								
Category:	Dialysis Management, Dialysis Access								
Description:	Percentage of arterial complications following angiography, angioplasty or thrombectomy procedures.								
RPA Non-PQRS Measure Number or PQRS Number RPAQIR12				NQF Number if endorsed N/A		eQCM 2019 Number if applicable N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments
LOW	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	• Unclear how these will be identified, and likely will require self-reporting.

	$\frac{8}{11}$	$\frac{3}{11}$	$\frac{0}{11}$	$\frac{7}{9}$	$\frac{8}{9}$	$\frac{6}{9}$	$\frac{3}{9}$	$\frac{1}{9}$	<ul style="list-style-type: none"> <li>• Not appropriately attributed to nephrologist, unless interventional nephrology.</li> <li>• Interventionalists may decrease intervention rate or decrease reporting of complications.</li> <li>• Measure specification needs to be fully described (what qualifies as complication).</li> </ul>
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Measure 22:	†Arteriovenous Fistulae Thrombectomy Success Rate									
Category:	Dialysis Management, Dialysis Access									
Description:	Percentage of clinically successful arteriovenous fistulae (AVF) thrombectomies.									
RPA Non-PQRS Measure Number or PQRS Number RPAQIR15				NQF Number if endorsed N/A			eCQM 2019 Number if applicable N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
LOW	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Not appropriately attributed to nephrologist, unless interventional nephrology.</li><li>• Could result in faster referrals of clotted fistulas to vascular surgeons, but may result in more abandoned fistulas.</li><li>• Thrombectomy success may more likely to be related to underlying patient factors rather than quality of the interventionalist.</li><li>• Unclear definition of successful, which may change reporting.</li></ul>	
	$\frac{10}{11}$	$\frac{1}{11}$	$\frac{0}{11}$	$\frac{7}{9}$	$\frac{6}{9}$	$\frac{4}{9}$	$\frac{5}{9}$	$\frac{1}{9}$		

Measure 23:	†Arteriovenous Graft Thrombectomy Success Rate				
Category:	Dialysis Management, Dialysis Access				
Description:	Percentage of clinically successful arteriovenous graft (AVG) thrombectomies.				
RPA Non-PQRS Measure Number or PQRS Number RPAQIR14		NQF Number if endorsed N/A		eCQM 2019 Number if applicable N/A	MIPS Nephrology 2018 or ESRD QIP 2019 Measure N/A
Overall Rating	Number of ratings per category	Median Rating by ACP Domain			Committee Comments

<b>LOW</b>	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"> <li>• Could result in faster referrals of clotted grafts to vascular surgeons, but may result in more abandoned grafts.</li> <li>• Thrombectomy success may more likely to be related to underlying patient factors rather than quality of the interventionalist.</li> <li>• Unclear definition of successful, which may change reporting.</li> </ul>
	$\frac{10}{11}$	$\frac{1}{11}$	$\frac{0}{11}$	$\frac{7}{9}$	$\frac{6}{9}$	$\frac{4}{9}$	$\frac{5}{9}$	$\frac{1}{9}$	

Measure 24:	Adult Kidney Disease: Hemodialysis Adequacy: Solute										
Category:	Dialysis Management, Adequacy										
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.										
RPA Non-PQRS Measure Number or PQRS Number				NQF Number if endorsed			eCQM 2019 Number if applicable		MIPS Nephrology 2018 or ESRD QIP 2019 Measure		
N/A				0323			N/A		N/A		
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments		
HIGH	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Generally accepted as standard of practice; reasonable evidence base although not a large amount.</li><li>• Certain select situations when care individualized for a given patient may result in Kt/V &lt;1.2.</li><li>• Should be an allowance for residual kidney function. Measure likely topped out so less meaningful.</li></ul>		
	$\frac{1}{11}$	$\frac{1}{11}$	$\frac{9}{11}$	$\frac{8}{9}$	$\frac{8}{9}$	$\frac{7}{9}$	$\frac{8}{9}$	$\frac{8}{9}$			

<b>Measure 25:</b>	Kt/V Dialysis Adequacy Comprehensive Clinical Measure
<b>Category:</b>	Dialysis Management, Adequacy
<b>Description:</b>	<p>Percentage of all patient months for patients whose delivered dose of dialysis (either hemodialysis or peritoneal dialysis) met the specified threshold during the reporting period.</p> <p>Numerator: Number of patient months in the denominator for patients whose delivered dose of dialysis met the specified thresholds. The thresholds are as follows:</p> <ul style="list-style-type: none"> <li>• Hemodialysis (all ages): <math>\text{spKt/V} \geq 1.2</math> (calculated from the last measurement of the month using UKM or Daugirdas II)</li> <li>• Peritoneal dialysis (pediatric = 18 years): <math>\text{Kt/V} \geq 1.7</math> (dialytic + residual, measured within the past 4 months)</li> </ul> <p>Denominator:</p> <ul style="list-style-type: none"> <li>• All adult hemodialysis patients who received dialysis greater than two and less than four times a week (adults, <math>\geq 18</math> years), and all pediatric in</li> </ul>



	–center hemodialysis patients who received dialysis greater than two and less than four times a week (pediatric, <18 years), and did not indicate frequent dialysis. • All patients (both HD and PD) who are assigned to the facility for the entire month, and have had ESRD for 90 days or more.								
RPA Non-PQRS Measure Number or PQRS Number N/A				NQF Number if endorsed N/A		eCQM 2019 Number if applicable N/A			MIPS Nephrology 2018 or ESRD QIP 2019 Measure QIP
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments
HIGH	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	• Generally accepted as standard of practice, reasonable evidence base although not a large amount. • More comprehensive measure than other adequacy measures. • Certain select situations when care individualized for a given patient may result in Kt/V lower than these thresholds. • No inclusion of residual kidney function for hemodialysis, for example the consideration of incremental dialysis. • May disadvantage PD facilities.
	0 11	2 11	9 11	8 9	8 9	7 9	7 9	8 9	

Measure 26:	Adult Kidney Disease: Peritoneal Dialysis Adequacy: Solute									
Category:	Dialysis Management, Adequacy									
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.									
RPA Non-PQRS Measure Number or PQRS Number N/A				NQF Number if endorsed 0321			eCQM 2019 Number if applicable N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
HIGH	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Generally accepted as standard of practice but no clinical trial evidence base.</li><li>• Certain select situations when care individualized for a given patient may result in a weekly Kt/V &lt;1.7.</li><li>• Targeting a weekly Kt/V of 1.7 without room for individualization may lead to conversion to hemodialysis.</li></ul>	
	1/11	2/11	8/11	8/9	8/9	6/9	8/9	8/9		

Measure 27:	Adequacy of Volume Management (PCPI Measure #: AKID-4)								
Category:	Dialysis Management, Adequacy								
Description:	Percentage of calendar months within a 12-month period during which patients aged 18 years and older with a diagnosis of ESRD undergoing maintenance hemodialysis in an outpatient dialysis facility have an assessment of the adequacy of volume management from a nephrologist.								
RPA Non-PQRS Measure Number or PQRS Number  AKID-4				NQF Number if endorsed  N/A		eCQM 2019 Number if applicable  N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure  N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• No standardized definition of what constitutes an adequate volume management assessment; methodology needs to be specified.</li><li>• Given lack of strong supporting evidence, may pose documentation &amp; monitoring burden without substantial patient benefit.</li><li>• Unclear if meaningful, as volume assessment is likely already assessed in all dialysis patients, so measure may be topped out.</li></ul>
	$\frac{5}{11}$	$\frac{6}{11}$	$\frac{0}{11}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{1}{9}$	$\frac{2}{9}$	$\frac{5}{9}$	

Measure 28:	Pediatric Kidney Disease: Adequacy of Volume Management									
Category:	Dialysis Management, Adequacy									
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) undergoing maintenance hemodialysis in an outpatient dialysis facility have an assessment of the adequacy of volume management from a nephrologist.									
RPA Non-PQRS Measure Number or PQRS Number  327				NQF Number if endorsed  N/A			eCQM 2019 Number if applicable  N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure  MIPS	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	• Given lack of strong supporting evidence, may pose documentation & monitoring burden without	







RPA Non-PQRS Measure Number or PQRS Number				NQF Number if endorsed		eCQM 2019 Number if applicable			MIPS Nephrology 2018 or ESRD QIP 2019 Measure	
N/A				2496		N/A			QIP	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
HIGH	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Accepted quality metric and incentivizes to improve care coordination. Readmission high in ESRD population so addresses a large performance gap.</li><li>• Readmissions to the hospital in ESRD patients are often unrelated to the index admission and physicians or facilities may have limited control.</li><li>• May delay necessary readmissions.</li><li>• Should be rate vs. ratio in order to benchmark over time.</li><li>• Does not account for outliers and requires adequate risk adjustment for social factors.</li></ul>	
	$\frac{0}{11}$	$\frac{3}{11}$	$\frac{8}{11}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{7}{9}$	$\frac{7}{9}$	$\frac{7}{9}$		

Measure 35:	Avoidance of Utilization of High Ultrafiltration Rate (>= 13 ml/kg/hour)									
Category:	Dialysis Management, Dialysis-related complications									
Description:	Percentage of adult in-center hemodialysis patients in the facility whose average ultrafiltration rate (UFR) is >= 13 ml/kg/hour.									
RPA Non-PQRS Measure Number or PQRS Number  N/A				NQF Number if endorsed  2701		eCQM 2019 Number if applicable  N/A			MIPS Nephrology 2018 or ESRD QIP 2019 Measure  N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
HIGH	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Good observational data evidence base for metric. Difficult to implement in practice because it is easier to increase the ultrafiltration rate rather than extend treatment time (logistically and patient preference).</li><li>• May encourage patient selection towards those more adherent to fluid restriction.</li><li>• May result in too little fluid being taken off if patient does not agree to longer sessions, which is also associated with worse outcomes.</li></ul>	
	0/11	5/11	6/11	8/9	7/9	7/9	8/9	8/9		

Measure 36:	Infection Monitoring: National Healthcare Safety Network (NHSN) Bloodstream Infection in Hemodialysis Patients Clinical Measure								
Category:	Dialysis Management, Dialysis-related complications								
Description:	<p>The Standardized Infection Ratio (SIR) of Bloodstream Infections (BSI) will be calculated among patients receiving hemodialysis at outpatient hemodialysis centers.</p> <p>Numerator: 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.</p> <p>Denominator: Number of maintenance hemodialysis patients treated in the outpatient hemodialysis center on the first 2 working days of the month.</p>								
RPA Non-PQRS Measure Number or PQRS Number  N/A			NQF Number if endorsed  1460			eCQM 2019 Number if applicable  N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure  QIP	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Bloodstream infection rate important part of hemodialysis care and modifiable based on dialysis unit practices.</li><li>• May encourage under-checking of blood cultures. Self-reported metric markedly limits effectiveness.</li><li>• Difficult to differentiate dialysis vs. nondialysis-related infections.</li><li>• Unclear why home hemodialysis patients are excluded.</li><li>• Should exclude contaminants such as <i>Staphylococcus epidermidis</i>.</li></ul>
	0 11	8 11	3 11	9 9	9 9	8 9	6 9	6 9	

Measure 37:	Transplant Referral (PCPI Measure #: AKID-13)		
Category:	Dialysis Management, Transplant Referral, Care Coordination, Advance Care Planning		
Description:	Percentage of patients aged 18 years and older with a diagnosis of ESRD on hemodialysis or peritoneal dialysis for 90 days or longer who are referred to a transplant center for kidney transplant evaluation within a 12- month period.		
RPA Non-PQRS Measure Number or PQRS Number N/A		NQF Number if endorsed N/A	eCQM 2019 Number if applicable N/A
		MIPS Nephrology 2018 or ESRD QIP 2019 Measure N/A	
Overall Rating	Number of ratings per category	Median Rating by ACP Domain	Committee Comments

	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	
<b>HIGH</b>	$\frac{0}{11}$	$\frac{2}{11}$	$\frac{9}{11}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{8}{9}$	$\frac{4}{9}$	$\frac{8}{9}$	<ul style="list-style-type: none"> <li>• Important measure for high quality dialysis care, as it provides an incentive to refer to transplant.</li> <li>• Recognizes that transplant is the best option for most (albeit not all) patients with ESRD but does not articulate shared decision-making.</li> <li>• Denominator allows for exclusion of patients who are not eligible, for reasons of age, co-morbidities, or social factors.</li> <li>• Nephrologists can assess eligibility to some extent. With time accruing at the onset of dialysis, it may not always be necessary to refer right away.</li> <li>• Some risk of inappropriate referrals, which can slow system for evaluating appropriate candidates.</li> <li>• Does not address that patients should be referred prior to ESRD and dialysis at an eGFR of 20mL/min/1.73 m<sup>2</sup>.</li> <li>• May disadvantage units serving populations with medical and social risk factors that may not be eligible for transplant. Requires risk adjustment.</li> </ul>

Measure 38:	Adult Kidney Disease: Referral to Hospice									
Category:	Dialysis Management, Transplant Referral, Care Coordination, Advance Care Planning									
Description:	Percentage of patients age 18 years and older with a diagnosis of ESRD who withdraw from hemodialysis or peritoneal dialysis who are referred to hospice care.									
RPA Non-PQRS Measure Number or PQRS Number 403				NQF Number if endorsed N/A			eCQM 2019 Number if applicable N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure MIPS	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	• Hospice care may not be appropriate or chosen by every individual at the end of life. Appropriately excludes patients that decline. • Low number of patients for this measure.	
	0/11	8/11	3/11	8/9	8/9	6/9	6/9	7/9		



Measure 39:	Rate of Timely Documentation Transmission to Dialysis Unit/Referring Physician									
Category:	Dialysis Management, Transplant Referral, Care Coordination, Advance Care Planning									
Description:	Percentage of patients aged 18 years and older for whom documentation is sent to the dialysis unit or referring physician within two days of the procedure completion or consultation.									
RPA Non-PQRS Measure Number or PQRS Number RPAQIR13				NQF Number if endorsed N/A			eCQM 2019 Number if applicable N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Likely important for high quality care, despite lack of evidence base.</li><li>• Responsibility of documentation transmission should not be solely on the physician but rather on healthcare system, EHR vendor, informatics.</li><li>• Difficult to measure and report.</li><li>• Not appropriately attributed to nephrologist.</li><li>• May send incomplete documentation to meet 2-day timeframe.</li></ul>	
	$\frac{1}{11}$	$\frac{9}{11}$	$\frac{1}{11}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{5}{9}$	$\frac{7}{9}$	$\frac{1}{9}$		

Measure 40:	Advance Care Planning (Pediatric Kidney Disease) (PCPI Measure #: PKID-4)									
Category:	Dialysis Management, Transplant Referral, Care Coordination, Advance Care Planning									
Description:	Percentage of patients aged 17 years and younger with a diagnosis of ESRD on hemodialysis or peritoneal dialysis for whom there is documentation of a discussion regarding advance care planning.									
RPA Non-PQRS Measure Number or PQRS Number  PKID-4				NQF Number if endorsed  N/A			eCQM 2019 Number if applicable  N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure  N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
HIGH	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Important for patients with organ failure.</li><li>• The elements involved in an acceptable documentation of the discussion are not fully defined.</li><li>• Documentation may not reflect meaningful discussion.</li></ul>	
	$\frac{0}{11}$	$\frac{2}{11}$	$\frac{9}{11}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{7}{9}$	$\frac{7}{9}$	$\frac{7}{9}$		

**Supplemental Table 3f. Broad measures.**

<b>Measure 41:</b>	Pneumonia Vaccination Status for Older Adults									
<b>Category:</b>	Broad measures, Preventive Care									
<b>Description:</b>	Percentage of patients 65 years of age and older who have ever received a pneumococcal vaccine.									
RPA Non-PQRS Measure Number or PQRS Number 111				NQF Number if endorsed 0043			eCQM 2019 Number if applicable 127v7			MIPS Nephrology 2018 or ESRD QIP 2019 Measure MIPS
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
<b>HIGH</b>	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"> <li>• Evidence-based. Shared responsibility with PCP.</li> <li>• Denominator appropriately adjusted excludes patients who decline to receive the vaccination or have medical contraindication.</li> <li>• Pneumonia vaccination recommendation was recently updated, so should reflect current recommendations.</li> </ul>	
	$\frac{0}{11}$	$\frac{0}{11}$	$\frac{11}{11}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{8}{9}$	$\frac{7}{9}$		

<b>Measure 42:</b>	Preventive Care and Screening: Influenza Immunization									
<b>Category:</b>	Broad measures, Preventive Care									
<b>Description:</b>	Percentage of patients aged 6 months and older seen for a visit between October 1 and March 31 who received an influenza immunization OR who reported previous receipt of an influenza immunization.									
RPA Non-PQRS Measure Number or PQRS Number 110				NQF Number if endorsed 0041			eCQM 2019 Number if applicable 147v8			MIPS Nephrology 2018 or ESRD QIP 2019 Measure MIPS
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
<b>HIGH</b>	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"> <li>• Important measure with good evidence base.</li> <li>• Shared responsibility with PCP.</li> <li>• Denominator appropriately adjusted excludes patients who decline to receive the vaccination or have medical contraindication.</li> </ul>	
	$\frac{0}{11}$	$\frac{2}{11}$	$\frac{9}{11}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{7}{9}$	$\frac{7}{9}$		

Measure 43:	*Preventive Care and Screening: Tobacco Use: Screening and Cessation Intervention									
Category:	Broad measures, Preventive Care									
Description:	Percentage of patients aged 18 years and older who were screened for tobacco use one or more times within 24 months AND who received tobacco cessation intervention if identified as a tobacco user.									
RPA Non-PQRS Measure Number or PQRS Number				NQF Number if endorsed			eCQM 2019 Number if applicable		MIPS Nephrology 2018 or ESRD QIP 2019 Measure	
226				0028			138v7		N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
HIGH	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Smoking is a critically important CKD and CVD risk factor.</li><li>• Nephrologist should co-own measure along with PCP.</li><li>• Unclear that meeting measure is the result of a meaningful patient discussion and cessation intervention, or just “box checking.”</li></ul>	
	$\frac{0}{11}$	$\frac{2}{11}$	$\frac{9}{11}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{7}{9}$	$\frac{7}{9}$		

Measure 44:	One-Time Screening for Hepatitis C Virus (HCV) for Patients at Risk									
Category:	Broad measures, Preventive Care									
Description:	Percentage of patients aged 18 years and older with one or more of the following: a history of injection drug use, receipt of a blood transfusion prior to 1992, receiving maintenance hemodialysis, OR birthdate in the years 1945-1965 who received one-time screening for hepatitis C virus (HCV) infection.									
RPA Non-PQRS Measure Number or PQRS Number 400				NQF Number if endorsed N/A			eCQM 2019 Number if applicable N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure MIPS	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	• Important measure given antiviral treatments for HCV. • Shared responsibility with PCP.	
	0 11	8 11	3 11	9 9	9 9	6 9	8 9	7 9		

Measure 45:	*Diabetes Mellitus: Diabetic Foot and Ankle Care, Peripheral Neuropathy – Neurological Evaluation										
Category:	Broad measures, Preventive Care										
Description:	Percentage of patients aged 18 years and older with a diagnosis of diabetes mellitus who had a neurological examination of their lower extremities within 12 months.										
RPA Non-PQRS Measure Number or PQRS Number				NQF Number if endorsed			eCQM 2019 Number if applicable		MIPS Nephrology 2018 or ESRD QIP 2019 Measure		
126				0417			N/A		N/A		
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments		
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	• High correlation with falls, moderate with progressive vascular complications; easy to perform and document. • Should be dominant responsibility of PCP or endocrinologist.		
	$\frac{1}{11}$	$\frac{10}{11}$	$\frac{0}{11}$	$\frac{8}{9}$	$\frac{8}{9}$	$\frac{8}{9}$	$\frac{6}{9}$	$\frac{3}{9}$			

<b>Measure 46:</b>	*Diabetes Mellitus: Diabetic Foot and Ankle Care, Ulcer Prevention – Evaluation of Footwear									
<b>Category:</b>	Broad measures, Preventive Care									
<b>Description:</b>	Percentage of patients aged 18 years and older with a diagnosis of diabetes mellitus who were evaluated for proper footwear and sizing.									
RPA Non-PQRS Measure Number or PQRS Number				NQF Number if endorsed			eCQM 2019 Number if applicable		MIPS Nephrology 2018 or ESRD QIP 2019 Measure	
127				0416			N/A		N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
<b>MEDIUM</b>	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"> <li>• Should be dominant responsibility of PCP, endocrinologist, or podiatrist.</li> <li>• May not be necessary in all patients in the absence of neuropathy.</li> <li>• Not appropriate to attribute this measure to providers not trained in the evaluation of footwear.</li> </ul>	
	$\frac{3}{11}$	$\frac{8}{11}$	$\frac{0}{11}$	$\frac{8}{9}$	$\frac{8}{9}$	$\frac{6}{9}$	$\frac{5}{9}$	$\frac{1}{9}$		

<b>Measure 47:</b>	*Preventive Care and Screening: Body Mass Index (BMI)
<b>Category:</b>	Broad measures, Preventive Care
<b>Description:</b>	Percentage of patients aged 18 years and older with a BMI documented during the current encounter or during the previous twelve months

	AND with a BMI outside of normal parameters, a follow-up plan is documented during the encounter or during the previous twelve months of the current encounter. Normal Parameters: Age 18 years and older BMI $\geq 18.5$ and $< 25 \text{ kg/m}^2$ .								
RPA Non-PQRS Measure Number or PQRS Number 128				NQF Number if endorsed 0421		eCQM 2019 Number if applicable 69v7			MIPS Nephrology 2018 or ESRD QIP 2019 Measure N/A
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Now obesity is increasingly recognized as risk factor for CKD, and is also a modifiable risk factor for diabetes.</li><li>• May not apply to dialysis patients; risk-relationships are complex/controversial in dialysis population.</li><li>• Unclear if documentation will meaningfully impact clinical care or outcomes.</li><li>• BMI in some cases may be a poor estimate of body composition or risk of adverse outcomes.</li></ul>
	$\frac{3}{11}$	$\frac{8}{11}$	$\frac{0}{11}$	$\frac{7}{9}$	$\frac{7}{9}$	$\frac{5}{9}$	$\frac{6}{9}$	$\frac{3}{9}$	

Measure 48:	Medication Reconciliation Post-Discharge									
Category:	Broad measures, Medication Reconciliation and Safety									
Description:	<p>The percentage of discharges from any inpatient facility (e.g. hospital, skilled nursing facility, or rehabilitation facility) for patients 18 years and older of age seen within 30 days following discharge in the office by the physician, prescribing practitioner, registered nurse, or clinical pharmacist providing on-going care for whom the discharge medication list was reconciled with the current medication list in the outpatient medical record.</p> <p>This measure is reported as three rates stratified by age group:</p> <ul style="list-style-type: none"><li>• Reporting Criteria 1: 18-64 years of age</li><li>• Reporting Criteria 2: 65 years and older</li><li>• Total Rate: All patients 18 years of age and older</li></ul>									
RPA Non-PQRS Measure Number or PQRS Number  046				NQF Number if endorsed  0097			eCQM 2019 Number if applicable  N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure  MIPS	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
HIGH	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	• Important for high quality care. May spur more interoperability between disparate EHR systems.	

	$\frac{0}{11}$	$\frac{1}{11}$	$\frac{10}{11}$	$\frac{8}{9}$	$\frac{9}{9}$	$\frac{8}{9}$	$\frac{8}{9}$	$\frac{8}{9}$	<ul style="list-style-type: none"> <li>• Attribution is not clearly assigned to a provider who is familiar with the patient.</li> <li>• May result in "box checking," as it is hard to verify accuracy.</li> </ul>
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Measure 49:	Documentation of Current Medications in the Medical Record									
Category:	Broad measures, Medication Reconciliation and Safety									
Description:	Percentage of visits for patients aged 18 years and older for which the eligible professional attests to documenting a list of current medications using all immediate resources available on the date of the encounter. This list must include ALL known prescriptions, over-the-counters, herbals, and vitamin/mineral/dietary (nutritional) supplements AND must contain the medications’ name, dosage, frequency and route of administration.									
RPA Non-PQRS Measure Number or PQRS Number				NQF Number if endorsed			eCQM 2019 Number if applicable		MIPS Nephrology 2018 or ESRD QIP 2019 Measure	
130				0419			68v8		MIPS	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
HIGH	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Correct medication list is critical for high quality medical care.</li><li>• Physician documentation of the medication list does not necessarily translate into accuracy of medication lists or patients taking medications.</li><li>• Non-interoperable EHR and pharmacy systems make this challenging for the physician.</li></ul>	
	$\frac{0}{11}$	$\frac{3}{11}$	$\frac{8}{11}$	$\frac{8}{9}$	$\frac{8}{9}$	$\frac{6}{9}$	$\frac{8}{9}$	$\frac{6}{9}$		

Measure 50:	*Use of High-Risk Medications in the Elderly			
Category:	Broad measures, Medication Reconciliation and Safety			
Description:	Percentage of patients 65 years of age and older who were ordered high- risk medications. Two rates are reported. 1) Percentage of patients who were ordered at least one high-risk medication. 2) Percentage of patients who were ordered at least two of the same high- risk medications.			
RPA Non-PQRS Measure Number or PQRS Number 238		NQF Number if endorsed 0022	eCQM 2019 Number if applicable 156v7	MIPS Nephrology 2018 or ESRD QIP 2019 Measure N/A
Overall Rating	Number of ratings per category	Median Rating by ACP Domain		Committee Comments

LOW	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"> <li>• Long list of high-risk medications. Allowing only one medication does not offer sufficient opportunity to individualize patient care.</li> <li>• May result in beneficial medications being withheld.</li> <li>• Difficult for nephrologist to ascertain when and who ordered the medication. Medication list may have important omissions and inappropriate additions.</li> <li>• Defining what is high risk is difficult in advanced kidney disease.</li> </ul>
	$\frac{11}{11}$	$\frac{0}{11}$	$\frac{0}{11}$	$\frac{6}{9}$	$\frac{5}{9}$	$\frac{5}{9}$	$\frac{4}{9}$	$\frac{1}{9}$	

Measure 51:	Advance Care Plan									
Category:	Broad measures, Advance Care Planning									
Description:	Percentage of patients aged 65 years and older who have an advance care plan or surrogate decision maker documented in the medical record or documentation in the medical record that an advance care plan was discussed but the patient did not wish or was not able to name a surrogate decision maker or provide an advance care plan.									
RPA Non-PQRS Measure Number or PQRS Number				NQF Number if endorsed			eCQM 2019 Number if applicable		MIPS Nephrology 2018 or ESRD QIP 2019 Measure	
047				0326			N/A		MIPS	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
HIGH	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Reasonable for patients age 65 years and older, but may not be relevant to care in low acuity patients.</li><li>• Should be dominant responsibility of PCP in earlier stage kidney disease.</li><li>• The elements involved in an acceptable documentation of the discussion are not fully defined.</li></ul>	
	$\frac{0}{11}$	$\frac{2}{11}$	$\frac{9}{11}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{8}{9}$	$\frac{7}{9}$	$\frac{7}{9}$		

<b>Measure 52:</b>	*Falls: Plan of Care								
<b>Category:</b>	Broad measures, Falls								
<b>Description:</b>	<p>Percentage of patients aged 65 years and older with a history of falls that had a plan of care for falls documented within 12 months.</p> <p>NOTE: This is a two-part measure which is paired with Measure #154: Falls: Risk Assessment. This measure should be reported if CPT II code 1100F "Patient screened for future falls risk; documentation of two or more falls in the past year or any fall with injury in the past year" is submitted for Measure #154.</p>								
RPA Non-PQRS Measure Number				NQF Number		eCQM 2019 Number		MIPS Nephrology 2018 or	

or PQRS Number 155				if endorsed 0101		if applicable N/A			ESRD QIP 2019 Measure N/A
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	• Important, however not attributable to nephrologist (PCP responsible). • Assessment and plan of care documentation may not translate into actual benefits for patients. • May be documented by medical assistants or other clinic staff leading to documentation burden without improvement in care.
	$\frac{3}{11}$	$\frac{8}{11}$	$\frac{0}{11}$	$\frac{8}{9}$	$\frac{8}{9}$	$\frac{7}{9}$	$\frac{7}{9}$	$\frac{3}{9}$	

Measure 53:	*Falls: Risk Assessment									
Category:	Broad measures, Falls									
Description:	Percentage of patients aged 65 years and older with a history of falls that had a risk assessment for falls completed within 12 months.  NOTE: This is a two-part measure which is paired with Measure #155: Falls: Plan of Care. If the falls risk assessment indicates the patient has documentation of two or more falls in the past year or any fall with injury in the past year (CPT II code 1100F is submitted), #155 should also be reported.									
RPA Non-PQRS Measure Number or PQRS Number  154				NQF Number if endorsed  0101			eCQM 2019 Number if applicable  N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure  N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Falls are associated with mortality and other complications.</li><li>• Important, however not attributable to nephrologist (PCP responsible). Nephrologists often lack knowledge to do falls assessments.</li><li>• Assessment and plan of care documentation may not translate into actual benefits for patients.</li><li>• May be documented by medical assistants or other clinic staff leading to documentation burden without improvement in care.</li></ul>	
	$\frac{2}{11}$	$\frac{9}{11}$	$\frac{0}{11}$	$\frac{8}{9}$	$\frac{8}{9}$	$\frac{6}{9}$	$\frac{8}{9}$	$\frac{3}{9}$		



Measure 54:	*Falls: Screening for Future Fall Risk									
Category:	Broad measures, Falls									
Description:	Percentage of patients 65 years of age and older who were screened for future fall risk during the measurement period.									
RPA Non-PQRS Measure Number or PQRS Number  318				NQF Number if endorsed  0101			eCQM 2019 Number if applicable  139v7		MIPS Nephrology 2018 or ESRD QIP 2019 Measure  N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Falls are associated with mortality and other complications. Documenting that they are being recorded and acted on is important.</li><li>• Not within nephrology practice; should be dominant responsibility of PCP.</li><li>• May be documented by medical assistants or other clinic staff leading to documentation burden without improvement in care.</li></ul>	
	0 11	11 11	0 11	9 9	9 9	5 9	7 9	2 9		

Measure 55:	†Prevention of Catheter-Related Bloodstream Infections (CRBSI): Central Venous Catheter (CVC) Insertion Protocol									
Category:	Broad measures, Complications/Misc.									
Description:	Percentage of patients, regardless of age, who undergo central venous catheter (CVC) insertion for whom CVC was inserted with all elements of maximal sterile barrier technique, hand hygiene, skin preparation and, if ultrasound is used, sterile ultrasound techniques followed.									
RPA Non-PQRS Measure Number or PQRS Number				NQF Number if endorsed			eCQM 2019 Number if applicable		MIPS Nephrology 2018 or ESRD QIP 2019 Measure	
076				0464			N/A		N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Important high quality care, however not usually relevant to nephrology (except temporary dialysis placement which is often not performed by nephrologist).</li><li>• Difficult to objectively collect this information, as it is likely to be self-reported.</li><li>• Might result in more standardization of CVC "bundles" and documentation.</li></ul>	
	$\frac{2}{11}$	$\frac{6}{11}$	$\frac{3}{11}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{9}{9}$	$\frac{7}{9}$	$\frac{2}{9}$		

Measure 56:	†Surgical Site Infection (SSI)									
Category:	Broad measures, Complications/Misc.									
Description:	Percentage of patients aged 18 years and older who had a surgical site infection (SSI).									
RPA Non-PQRS Measure Number or PQRS Number  357				NQF Number if endorsed  N/A			eCQM 2019 Number if applicable  N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure  N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
LOW	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	• Not appropriately attributed to nephrologist. • Surgical centers and hospitals are already required to report SSIs.	
	$\frac{11}{11}$	$\frac{0}{11}$	$\frac{0}{11}$	$\frac{7}{9}$	$\frac{7}{9}$	$\frac{7}{9}$	$\frac{6}{9}$	$\frac{1}{9}$		

Measure 57:	†Radiology: Exposure Time Reported for Procedures Using Fluoroscopy									
Category:	Broad Measures, Complications/Misc.									
Description:	Percentage of final reports for procedures using fluoroscopy that include documentation of radiation exposure or exposure time.									
RPA Non-PQRS Measure Number or PQRS Number  145				NQF Number if endorsed  0510			eCQM 2019 Number if applicable  N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure  N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
LOW	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	• Important to track cumulative ionizing radiation exposure. • Not appropriately attributed to nephrologist, unless interventional nephrology.	
	$\frac{10}{11}$	$\frac{1}{11}$	$\frac{0}{11}$	$\frac{7}{9}$	$\frac{7}{9}$	$\frac{6}{9}$	$\frac{5}{9}$	$\frac{1}{9}$		

<b>Measure 58:</b>	†Hospitalization Rate Following Procedures Performed under Procedure Sedation Analgesia								
<b>Category:</b>	Broad Measures, Complications/Misc.								
<b>Description:</b>	Percentage of inpatient hospitalizations immediately following procedures performed under procedure sedation analgesia.								
RPA Non-PQRS Measure Number			NQF Number			eCQM 2019 Number			MIPS Nephrology 2018 or

or PQRS Number RPAQIR11				if endorsed N/A		if applicable N/A			ESRD QIP 2019 Measure N/A	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
LOW	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Not appropriately attributed to nephrologist.</li><li>• Unknown evidence base for established acceptable rate in literature.</li><li>• Disincentivizes hospitalizations that are necessary.</li></ul>	
	$\frac{11}{11}$	$\frac{0}{11}$	$\frac{0}{11}$	$\frac{5}{9}$	$\frac{5}{9}$	$\frac{5}{9}$	$\frac{4}{9}$	$\frac{1}{9}$		

**Supplemental Table 3g. Patient reported outcome measures (PROMs).**

Measure 59:	Patient Experience of Care: In-Center Hemodialysis Consumer Assessment of Healthcare Providers and Systems (ICH CAHPS) Survey Clinical Measure									
Category:	Patient Reported Outcome Measures									
Description:	The proportion of respondents answering each response option by item, summed across all items within a composite. Composites include: Nephrologists’ Communication and Caring, Quality of Dialysis Center Care and Operations, and Providing Information to Patients, Overall Rating: a summation of responses to the rating items grouped into 3 levels.									
RPA Non-PQRS Measure Number or PQRS Number N/A				NQF Number if endorsed 0258, QIP			eCQM 2019 Number if applicable N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure QIP	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Important to include patient-reported outcomes.</li><li>• Survey has 60+ questions and twice-yearly administration, which may lead to survey fatigue.</li><li>• Results may be biased due to low response rate.</li><li>• May apply more to the dialysis facility and medical director, rather than the individual nephrologist.</li></ul>	
	$\frac{2}{11}$	$\frac{8}{11}$	$\frac{1}{11}$	$\frac{7}{9}$	$\frac{6}{9}$	$\frac{5}{9}$	$\frac{6}{9}$	$\frac{6}{9}$		

Measure 60:	Functional Outcome Assessment									
Category:	Patient Reported Outcome Measures									
Description:	Percentage of visits for patients aged 18 years and older with documentation of a current functional outcome assessment using a standardized functional outcome assessment tool on the date of encounter AND documentation of a care plan based on identified functional outcome deficiencies on the date of the identified deficiencies.									
RPA Non-PQRS Measure Number or PQRS Number 182				NQF Number if endorsed 2624			eCQM 2019 Number if applicable N/A		MIPS Nephrology 2018 or ESRD QIP 2019 Measure MIPS	
Overall Rating	Number of ratings per category			Median Rating by ACP Domain					Committee Comments	
MEDIUM	LOW	MED	HIGH	Importance	Appropriateness	Clinical Evidence	Specifications	Feasibility	<ul style="list-style-type: none"><li>• Should be dominant responsibility of PCP.</li><li>• Should target older patients, such as those ≥ 65, and those who are more vulnerable.</li><li>• Not currently routinely done in nephrology practice.</li></ul>	
	$\frac{2}{11}$	$\frac{9}{11}$	$\frac{0}{11}$	$\frac{7}{9}$	$\frac{6}{9}$	$\frac{6}{9}$	$\frac{6}{9}$	$\frac{6}{9}$		

									<ul style="list-style-type: none"> <li>• Validity will depend on which current functional assessment scale is used.</li> </ul>
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\*Metric is PCP-focused.

†Metric should not be attributable to nephrologists.

ACP domains displayed in the above tables were as follows: Domain 1: Importance. Domain 2: Appropriate Care. Domain 3: Clinical Evidence Base. Domain 4: Measure Specifications. Domain 5: Measure Feasibility and Applicability.

Abbreviations:

ACP = American College of Physicians

eCQM = Electronic clinical quality measures.

EHR = Electronic health records

ESRD QIP = End-stage Renal Disease Quality Incentive Program

MIPS = Merit-based Incentive Payment System

NQF = National Quality Forum

PCP = Primary care physician

RPA PQRS = Renal Physician Association Physicians Quality Reporting System