CBE ID

5611e

Title

Rate of annual Kidney Health Evaluation among adults with diabetes and/or hypertension

Project

Initial Recognition and Management

Endorsement Status

New

Is Under Review

Yes

Next Maintenance Cycle

Spring 2026

Steward

National Kidney Foundation

1.0 New or Maintenance

New

1.1 Measure Structure

Single Measure

1.3 Electronic Clinical Quality Measure (eCQM)

Yes

1.6 Measure Description

Percentage of patients aged 18-85 years with a diagnosis of diabetes and/or hypertension who received a kidney health evaluation defined by an Estimated Glomerular Filtration Rate (eGFR) AND Urine Albumin-Creatinine Ratio (uACR) within the measurement period.

1.7 Measure Type

Process

1.8 Level of Analysis

Clinician: Group/Practice, Clinician: Individual

1.9 Care Setting

Ambulatory Care: Clinic, Ambulatory Care: Clinician Office, Ambulatory Care: Office, Clinician Office/Clinic

1.10 Measure Rationale

Chronic Kidney Disease (CKD) is a major driver of morbidity, mortality and high healthcare costs in the United States. Currently, 35.5 million American adults have CKD and millions of others are at increased risk (CDC, 2023), with an estimated population prevalence growing to nearly 17% among Americans aged 30 years and older by the year 2030 (Hoerger, 2015; USRDS, 2025). Total Medicare spending in 2023 on both CKD and End-Stage Kidney Disease (ESKD) was over $196 billion, comprising 36% of total Medicare fee-for-service spending overall with costs increasing exponentially with advancing CKD (Nichols, 2020; USRDS, 2025). In the US from 2002-2016, the burden of CKD, defined as years of life lost, years living with disability, disability-adjusted life years, and deaths, outpaced changes in the burden of disease for other conditions (Bowe, 2018). Patients with CKD experience hospitalization and readmissions more frequently than those without diagnosed CKD (USRDS, 2025). CKD is the 9th leading cause of death in the US and is the fastest growing non-communicable disease in terms of in burden largely due to death (Hoerger, 2015; Bowe, 2018). This public health issue is driven largely by the impact of diabetes and hypertension - the most common comorbid risk factors for CKD (Bowe, 2018; USRDS, 2025).

The intent of this process measure is to improve rates of guideline-concordant kidney health evaluation in patients with diabetes and/or hypertension to more consistently identify and potentially treat or delay progression of CKD in this high-risk population. Annual kidney health evaluation in patients with diabetes and/or hypertension to determine risk of CKD using estimated glomerular filtration rate (eGFR) and urine albumin-creatinine ratio (uACR) is recommended by clinical practice guidelines (American Diabetes Association, 2026; American College of Cardiology, 2025; KDIGO, 2024; American Heart Association, 2023; de Boer, 2022; National Kidney Foundation, 2007; National Kidney Foundation, 2012) and has been a focus of various local and national health care quality improvement initiatives, including Healthy People 2030 (Healthy People 2030, 2023; American Heart Association, 2023). There is variability in the performance of these tests in patients with diabetes and/or hypertension. Rates of testing vary by payer type and by comorbidity. Medicare Advantage members with diabetes are tested most frequently (59.6%) whereas Medicare Fee-For-Service members with hypertension only are tested least (8.0%) (USRDS, 2024, Stempneiwicz, 2021). Low rates of detection of CKD in a population of patients with diabetes have been demonstrated to be associated with low patient awareness of their own kidney health status (Szczech, 2014). Indeed, 90% of individuals with CKD are unaware of their condition due to under-recognition and under-diagnosis (CDC, 2023). Currently, an individual's lifetime probability of developing CKD is relatively high, reaching 54% for someone currently aged 30-49 years (Hoerger, 2015). As CKD is associated with an elevated risk of cardiovascular events and mortality even in its earliest stages, eGFR and uACR are strong predictors of adverse cardiovascular events (Khan, 2023). Regular kidney health evaluations, utilizing both eGFR and uACR, provide an opportunity to improve identification of CKD and reduce progression of CKD and its associated cardiovascular risk, particularly in high-risk populations, such as those with diabetes and/or hypertension.

References:

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Nichols GA, Ustyugova A, Déruaz-Luyet A, O'Keeffe-Rosetti M, Brodovicz KG. Health Care Costs by Type of Expenditure across eGFR Stages among Patients with and without Diabetes, Cardiovascular Disease, and Heart Failure. *J Am Soc Nephrol*. Jul 2020;31(7):1594-1601. doi:10.1681/asn.2019121308

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Stevens PE, Ahmed SB, Carrero JJ, et al. KDIGO 2024 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease. *Kidney International*. 2024;105(4):S117-S314. doi:10.1016/j.kint.2023.10.018

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Writing Committee M, Jones DW, Ferdinand KC, et al. 2025 AHA/ACC/AANP/AAPA/ABC/ACCP/ACPM/AGS/AMA/ASPC/NMA/PCNA/SGIM Guideline for the Prevention, Detection, Evaluation and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. *Circulation*. 2025/09/16 2025;152(11):e114-e218. doi:10.1161/CIR.0000000000001356

1.12 eCQM Data Model

Quality Data Model (QDM) and Clinical Quality Language (CQL), Fast Healthcare Interoperability Resources (FHIR)

1.12a Attach MADiE Output

5611e-v0.0.001-QDM-Spring-2026.zip , 5611e-FHIR-v0.0.000-FHIR-Spring-2026.zip

1.13 Data Dictionary

Attached

1.13a Attach Data Dictionary

5611e-Kidney-Health-Evaluation-For-People-W-QDM-value-sets-Spring-2026.zip

1.14 Numerator

Patients who received a kidney health evaluation during the measurement period. Kidney health evaluation is defined by an eGFR AND uACR within the measurement period OR an eGFR and a Urine Albumin and Urine Creatinine result documented less than or equal to four days apart.

1.14a Numerator Details

Patients who received a kidney health evaluation during the measurement period.

Kidney health evaluation is defined by an:

- Estimated Glomerular Filtration Rate (eGFR) and
- Urine Albumin-Creatinine Ratio (uACR).

OR

- An eGFR and
- A Urine Albumin and Urine Creatinine result documented less than or equal to four days apart.

Specific codes required to calculate the numerator are outlined in the attached value set data dictionary and eCQM package (Quality Data Model - QDM output).

1.15 Denominator

All patients aged 18-85 years with a diagnosis of diabetes and/or hypertension at the start of the measurement period with a visit during the measurement period.

1.15a Denominator Details

All patients:

- Aged 18-85 years and
- A diagnosis of diabetes and/or hypertension at the start of the measurement period and
- Has at least one visit during the measurement period

Specific codes required to calculate the denominator are outlined in the attached value set data dictionary and eCQM package (Quality Data Model - QDM output).

1.15b Denominator Exclusions

Patients with a diagnosis of ESRD active during the measurement period

Patients with a diagnosis of CKD Stage 5 active during the measurement period

Patients who have an order for or are receiving hospice or palliative care

1.15c Denominator Exclusions Details

Patients who meet the following criteria during the measurement period:

- Patients with a diagnosis of ESRD active during the measurement period
- Patients with a diagnosis of CKD Stage 5 active during the measurement period
- Patients who have an order for or are receiving hospice or palliative care

Specific codes required to calculate the denominator exclusions are outlined in the attached value set data dictionary and eCQM package (Quality Data Model - QDM output).

1.15d Age Group

Adults (18-64 years), Other

1.15e Age Range in Years

18 - 85

1.16 Type of Score

Rate/proportion

1.17 Measure Score Interpretation

Better performance = Higher score

1.18 Calculation of Measure Score

The measure calculation diagram is attached to this submission.

Performance Rate = (Numerator)/ (Denominator - Exclusions)

1. Find the patient visits that qualify for the denominator (i.e., the patients who meet the age, diagnosis and encounter requirements).
2. Remove those patients who meet the exclusion criteria from the denominator.
3. Identify whether the patients received both the eGFR and uACR tests during the measurement period.

1.18a Attach measure score calculation diagram

NKF-Kidney-Health-Evaluation-MeasureCalculation-Spring-2026.2.pdf

1.19 Measure Stratification Details

Not applicable - this measure is not stratified.

1.20 Types of Data Sources

Electronic Health Records

1.21a Data Collection Tool URL(s)

http://example.com

1.25 Data Source Details

Practices collect EHR data using certified electronic health record technology (CEHRT). The MAT output, which includes the human readable and XML artifacts of the clinical quality language (CQL) for the measure are contained in the eCQM specifications attached. No additional tools are used for data collection for eCQMs.

1.26 Minimum Sample Size

A minimum sample size of 20 patients at the individual clinician level was used to demonstrate that the performance scores were reliable. A minimum was not needed at the group level to ensure that the scores were reliable.

2.1 Attach Logic Model

5611e-NKF-KEH-Logic-Model-Spring-2026.pdf

2.2 Evidence of Measure Importance

As discussed in section 1.10, the intent of this process measure is to improve rates of guideline-concordant kidney health evaluation in patients with diabetes and/or hypertension to more consistently identify and potentially treat or delay progression of CKD in this high-risk population. Rates of CKD diagnoses continue to increase with one estimate indicating that it will be in the top five causes of years of life lost and contribute to increasing healthcare costs across the world within the next fifteen years (Li, 2020). In the United States, 14% of adults live with chronic kidney disease, with older, rural, and underserved communities bearing a higher burden of disease (CDC, 2026). Detecting patients at risk as early as possible allows clinicians the opportunity to offer lifestyle and treatment strategies to slow or prevent the progression to end-stage kidney disease (ESKD) and reduce cardiovascular events (e.g., myocardial infarction) (de Boer, 2022; Kahn, 2024).

This clinical quality measure is based on several evidence-based clinical guidelines ((American Diabetes Association, 2026; American College of Cardiology, 2025; KDIGO, 2024; National Kidney Foundation, 2007; National Kidney Foundation, 2012). These guidelines explicitly recommended eGFR and uACR laboratory testing in patients with a diagnosis of diabetes and/or hypertension.

Kidney health evaluations, utilizing both eGFR and uACR tests, among patients with a diagnosis of diabetes and/or hypertension, provides an opportunity to improve identification of CKD and reduce cardiovascular morbidity and prevent worsening kidney function.

The following evidence statements are quoted verbatim from the referenced clinical guidelines and other sources, where applicable:American Diabetes Association, Chronic Kidney Disease and Risk Management: Standards of Care in Diabetes—2026:

Assess kidney function with random urine albumin-to-creatinine ratio (UACR) and estimated glomerular filtration rate (eGFR) at least annually in people with type 1 diabetes with duration of ≥5 years and in all people with type 2 diabetes regardless of treatment. Level of Evidence: B

KDOQI Clinical Practice Guidelines and Clinical Practice Recommendations for Diabetes and Chronic Kidney Disease, 2007 and 2012 Update:Patients with diabetes should be screened annually for Diabetic Kidney Disease (DKD). Initial screening should commence:· 5 years after the diagnosis of type 1 diabetes; (Quality of Evidence: A) or· From diagnosis of type 2 diabetes. (Quality of Evidence: B)Screening should include:· Measurements of urinary albumin-creatinine ratio (ACR) in a spot urine sample; (Quality of Evidence: B)· Measurement of serum creatinine and estimation of GFR. (Quality of Evidence: B)

KDIGO 2024 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease:

Practice Point 1.1.1.1: Test people at risk for and with chronic kidney disease (CKD) using both urine albumin measurement and assessment of glomerular filtration rate (GFR).

AHA/ACC/AANP/AAPA/ABC/ACCP/ACPM/AGS/AMA/ASPC/NMA/PCNA/SGIM Guideline for the Prevention, Detection, Evaluation and Management of High Blood Pressure in Adults, 2025

For adults who are diagnosed with hypertension, laboratory tests (ie, complete blood count, serum electrolytes, serum creatinine, lipid pro le, glucose or hemoglobin A1c [HbA1c], thyroid-stimulating hormone, urinalysis, and urine albumin-to-creatinine ratio) and diagnostic procedures (12-lead ECG) should be performed to optimize management. (COR: 1, LOE: C-EO)

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KDOQI Clinical Practice Guideline for Diabetes and CKD: 2012 Update. *American Journal of Kidney Diseases*. 2012;60(5):850-886. doi:10.1053/j.ajkd.2012.07.005

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2.3 Anticipated Impact

CKD is asymptomatic at onset. Clinicians and patients can only learn about the presence of CKD through routine testing for CKD among people who are at risk.

Eighty percent of people living with chronic kidney disease remain undetected in primary care settings (Maciejewski, 2020; Shang, 2021). Overarching care for people with a CKD diagnosis is

also suboptimal as most people do not receive guideline directed medical therapy (GDMT) (Nicholas, 2023). Only 54% of people with advanced CKD receive nephrology care (USRDS, 2025).

Recent publications suggest that improvements in CKD testing, particularly the use of urine albumin-creatinine ratio, impacts the probability of people with CKD receiving GDMT in primary care settings (Chu, 2023). Studies regarding the impact of new interventions, such as sodium-glucose transporter 2 inhibitors (SGLT2i) (Heerspink, 2020; Herrington, 2023; Perkovic, 2019) or non-steroidal mineralocorticoid receptor agonists (nsMRA) (Bakris, 2020), have demonstrated significant reductions in CKD progression, associated cardiovascular events, and related utilization. A recent retrospective cohort study illustrated that good CKD disease management in CKD Stage 3 and Stage 4 (defined as CKD testing, diagnosis, risk factor management, and use of basic interventions to address proteinuria) could yield as much as a 40% reduction in inpatient hospitalization, a 30% reduction in emergency room visits, and an decrease in monthly healthcare costs by as much as 17% (Li, 2023).

While the opportunity to slow CKD progression, reduce the rising cardiovascular risk associated with it, and reduce utilization are opportunities that arise from improved CKD testing, there are few adverse events that are associated with the use of the two widely available, inexpensive tests associated with this measure.

References:

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Chu CD, Xia F, Du Y, et al. Estimated Prevalence and Testing for Albuminuria in US Adults at Risk for Chronic Kidney Disease. JAMA Netw Open 2023;6(7):e2326230. (In eng). DOI: 10.1001/jamanetworkopen.2023.26230.

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Li Y, Barve K, Cockrell M, et al. Managing comorbidities in chronic kidney disease reduces utilization and costs. BMC Health Serv Res 2023;23(1):1418. (In eng). DOI: 10.1186/s12913-023-10424-8.

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United States Renal Data System. 2025 *USRDS Annual Data Report: Epidemiology of kidney disease in the United States.* National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, 2025.

2.4 Performance Gap

The data used for testing in this submission (described in Section 5.1) demonstrates that there is a gap in care for routine testing for CKD in patients with a diagnosis of diabetes and/or hypertension. Specifically, performance scores at the individual clinician and group levels were calculated for the period of January 1 to December 31, 2025, for 374 individual clinicians across six clinics within a large health system in the Northeast (Tables 1 and 2 in the supplemental attachment).

Table 1. Performance Scores by Decile

Table 1: Mean performance scores by decile, clinician-level, 2025, sample size >=20

	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Mean Performance Score	**24.59%**	**0.00%**	**8.69%**	**15.53%**	**16.81%**	**19.70%**	**22.86%**	**26.29%**	**27.96%**	**33.57%**	**37.91%**	**44.43%**	**52.63%**
N of Entities	**82**	**1**	**9**	**8**	**7**	**9**	**8**	**9**	**8**	**7**	**9**	**8**	**1**
N of Persons / Encounters / Episodes	**4,725**	**20**	**482**	**1,119**	**257**	**258**	**315**	**557**	**377**	**307**	**432**	**621**	**403**

Table 2: Distribution of performance scores, group-level, 2025

# of Clinics	# of patients	Min	P10	P25	Median	P75	P90	Max	Mean	Std Deviation
6	7,885	14.28%	14.28%	14.37%	24.56%	33.65%	34.84%	34.84%	24.38%	0.0893

2.5 Health Care Quality Landscape

This measure, which expands the population to include patients with a diagnosis of hypertension, will be submitted to the Centers for Medicare & Medicaid Services (CMS) to be considered to replace the existing Merit-Based Incentive Program (MIPS) Kidney Health Evaluation measure (Quality ID #488). The rationale provided in section 1.10 provides additional context on why this measure is needed.

2.6 Meaningfulness to Target Population

This measure was developed with input from a technical expert panel (TEP), which included patient and caregiver representation. These individuals were also trained in measure development prior to participating on the TEP. Generally, patients express the wish to have been made aware of their kidney health or diagnosed with CKD earlier as it would have allowed them opportunities for better lifestyle choices and engage in decision-making.

3.1 Contributions Towards Closing Care Gaps

As discussed in section 1.10, research demonstrates that the number of patients with diabetes and/or hypertension who receive routine testing for CKD remains less than optimal and testing

varies by payer type and by comorbidity. Medicare Advantage members with diabetes are tested most frequently (59.6%) whereas Medicare Fee-For-Service members with hypertension only are tested least (8.0%) (USRDS, 2024, Stempneiwicz, 2021). Low rates of detection of CKD in a population of patients with diabetes have been demonstrated to be associated with low patient awareness of their own kidney health status (Szczech, 2014). In fact, 90% of individuals with CKD are unaware of their condition due to under-recognition and under-diagnosis (CDC, 2023).

Using the same data described in section 2.4 Performance Gap**,** we also calculated mean performance score overall (i.e., all patients with diabetes), and by patient's characteristics (sex, race, and Hispanic), hypertension status, type of insurance, and clinics. Through these estimations, we seek to identify potential performance differences within subgroups (Table 3 in the supplemental attachment). The overall performance score across all patients from the six clinics is 23.8%. Performance differed between male (25.6%) and female (22.6%), different race categories (e.g., 22.9% for White and 26.8% for Asian), type of insurance (e.g., 25.7% for commercial insurance and 22.4% for managed Medicaid program), and across clinics (ranged from 14.3% to 34.8%). As shown in below Table 3, there are statistically significant differences in subgroups by sex ($p=0.002$), race ($p=0.0302$), and clinics ($p<0.0001$).

Based on published research and data from the six clinics, we believe that clinicians should be aware that potential differences in care decisions can exist, especially on those individuals matching those characteristics that may be less likely to receive these tests and develop quality improvement strategies at the point of care to drive further improvements.

References:

Centers for Disease Control & Prevention (CDC). Chronic Kidney Disease in the United States, 2023. Accessed March 30, 2026 https://www.cdc.gov/kidney-disease/php/data-research/index.html

Stempniewicz N, Vassalotti JA, Cuddeback JK, et al. Chronic Kidney Disease Testing Among Primary Care Patients With Type 2 Diabetes Across 24 U.S. Health Care Organizations. *Diabetes Care*. Sep 2021;44(9):2000-2009. doi:10.2337/dc20-2715

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United States Renal Data System. *2024 USRDS Annual Data Report: Epidemiology of kidney disease in the United States*, 2024. Accessed March 30, 2026. https://usrds-adr.niddk.nih.gov/2024

Table 3. Mean performance score performance score overall (i.e., all patients with diabetes), and by patient's characteristics (sex, race, and Hispanic), hypertension status, type of insurance, and clinics, clinician-level, 2025

	Denominator N	Numerator N	Performance score %	P-value
Total	**7,885**	**1,875**	**23.8**	
Stratification Variables				
Hypertension				0.4071
Yes	**6,613**	1,561	23.6	
No	**1,272**	314	24.7	
Sex				0.002
Female	4,736	1,069	22.6	
Male	3,149	806	25.6	
Race				0.0302
White	1,871	429	22.9	
Black	3,033	679	22.4	
Asian	575	154	26.8	
Multi Races	1,555	395	25.4	
Others	851	218	25.6	
Hispanic				0.6281
Hispanic	1,720	420	24.4	
Non Hispanic	5,061	1,186	23.4	
Others	1,104	269	24.4	
Payer				0.1331
Commercial Insurance	1,966	505	25.7	
Managed Medicaid	1,111	249	22.4	
Managed Medicare	905	210	23.2	
Medicaid	2,409	555	23.0	
Medicare	1,479	355	24.0	
Others	15	1	6.7	
Clinics				<0.0001
Clinic 1	835	120	14.4	
Clinic 2	1,386	198	14.3	
Clinic 3	3,240	771	23.8	
Clinic 4	537	136	25.3	

	Denominator N	Numerator N	Performance score %	P-value
Clinic 5	1,260	439	34.8	
Clinic 6	627	211	33.7	

4.1a Data Structure and Availability

This measure's feasibility of data capture using electronic health record systems (EHRs) was assessed in one vendor system (Epic) used by two clinics within a large health system in the Northeast and the results evaluating the measure's 30 data elements are captured in 5611e NKF KEH eCQM feasibility scorecard. Twenty-three data elements are documented in discrete fields using data standards and are routinely captured within the clinics. Of the seven data elements with a score of 0, these clinical concepts are captured using other data elements defined within the specifications. The measure is defined using multiple combinations of code systems to allow EHRs flexibility in capturing the required data elements and the continued inclusion of these data elements were considered important to facilitate ease of implementation regardless of the vendor system used and setting in which the measure is implemented.

4.1b Implementation Costs and Burden

While any implementation of an eCQM requires time and resources to map the clinical concepts as defined by the measure specifications within the EHRs, the feasibility assessment demonstrates that the data required for the measure can be captured within existing clinical workflows. No other costs to implement and report the measure are required. In addition, clinicians and practices can successfully capture and report the data needed for the existing Kidney Health Evaluation measure (Quality ID# 488), which uses the same data elements as this new measure.

4.1c Confidentiality

This measure leverages structured data from EHRs, which supports secure and confidential data collection. No patient-identifiable data are needed to report the measure, and the measure does not rely on patient surveys.

4.2 Attach Feasibility Scorecard

5611e-NKF-KEH-eCQM-Feasibility-Scorecard-Spring-2026.xlsx

4.3 Feasibility Informed Final Measure

Initial feasibility testing demonstrated that the measure can be readily captured using data from the EHRs. In addition, this measure leverages past implementation experience from the previous version of the measure that is currently in use in the Merit Incentive-based Payment System (MIPS) (Quality ID# 488).

4.4 Proprietary Information

Proprietary measure or components (e.g., risk model, codes), without fees

4.4a Fees, Licensing, or Other Requirements

Physician Performance Measures (Measures) and related data specifications developed by the National Kidney Foundation (NKF) are intended to facilitate quality improvement activities by health care professionals. These Measures are intended to assist health care professionals in enhancing quality of care.

These Measures are not clinical guidelines and do not establish a standard of medical care and have not been tested for all potential applications. NKF encourages testing and evaluation of its Measures.

Measures are subject to review and may be revised or rescinded at any time by NKF. The measures may not be altered without prior written approval from NKF. The measures, while copyrighted, can be reproduced and distributed, without modification, for noncommercial purposes. Commercial use is defined as the sale, license, or distribution of the measures for commercial gain, or incorporation of the measures into a product or service that is sold, licensed, or distributed for commercial gain. Commercial uses of the measures require a license agreement between the user and NKF. Neither NKF nor its members shall be responsible for any use of the measures.

THESE MEASURES AND SPECIFICATIONS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND.

Limited proprietary coding is contained in the Measure specifications for convenience. Users of the proprietary code sets should obtain all necessary licenses from the owners of these code sets.

5.1.1 Data Used for Testing

Data on 7,885 unique patients from six primary care clinics within a large health system in the Northeast that uses Epic for their electronic health record system from January 1 to December 31, 2025. The six clinics included 374 clinicians and the practice sizes ranged from six to 179 clinicians. The clinics were located across New York City, providing comprehensive outpatient adult care, preventive services and chronic disease management for a diverse set of individuals and included two resident/teaching clinics. These data were used for calculating performance gap, reliability, and validity.

5.1.1a Dates of Testing Data

From 01/01/2025 through 12/31/2025

5.1.2 Differences in Data

Data element validity testing used the same data described in section 5.1.1 but only a sample 85 patients were randomly selected from Clinics 3 and 4.

5.1.3 Characteristics of Measured Entities

There is a total of 374 entities (i.e., clinicians) from the six clinics. The number of entities who provided data in each of these six clinics are 6, 12, 13, 34, 130, and 179. The number of patients attributed to each clinician (measured by number of unique patients) varied with a minimum number of patients of 1, 25% quantile of 4, median of 10, 75% of quantile of 18, and maximum of 403.

5.1.4 Characteristics of Units of the Eligible Population

Initially, there were 11,431 unique patients and 2.4% of these patients were removed when exclusions (i.e., patients with ESRD or CKD stage 5 or have an order or are receiving hospice or palliative care) were applied. We then excluded the duplicate patients who were defined as individuals who had one or more visits with two or more different clinicians across the clinics. The final data set used for testing included 7,885 unique patients. The distribution of patient characteristics by hypertension status, demographic variables (sex, race, and ethnicity), type of insurance, and clinics are presented in Table 4 in the supplemental attachment.

Table 4. Characteristics of denominators

	Denominator N	**Numerator N**	**P-value**
Total	**7,885**	**1,875**	
Stratification Variables			
Hypertension			0.4071
Yes	**6,613**	1,561	
No	**1,272**	314	
Sex			0.002
Female	4,736	1,069	
Male	3,149	806	
Race			0.0302
White	1,871	429	
Black	3,033	679	
Asian	575	154	
Multi Races	1,555	395	
Others	851	218	
Hispanic			0.6281
Hispanic	1,720	420	
Non Hispanic	5,061	1,186	
Others	1,104	269	
Payer			0.1331
Commercial Insurance	1,966	505	
Managed Medicaid	1,111	249	
Managed Medicare	905	210	
Medicaid	2,409	555	
Medicare	1,479	355	
Others	15	1	
Clinics			<0.0001
Clinic 1	835	120	

	Denominator N	Numerator N	P-value
Clinic 2	1,386	198	
Clinic 3	3,240	771	
Clinic 4	537	136	
Clinic 5	1,260	439	
Clinic 6	627	211	

5.2.1 Level(s) of Reliability Testing Conducted

Accountable entity level (i.e., measure score) (e.g., signal-to-noise analysis)

5.2.2 Method(s) of Reliability Testing

To assess signal-to-noise, we employed the beta-binomial model as described by JL Adams in "The Reliability of Provider Profiling" (Adams, JL. The reliability of provider profiling: A tutorial. RAND Health, 2009). Using the techniques detailed in that document, we estimated the Clinician-to-Clinician variance (the signal) and the within-Clinician variance (the noise). The ratio of these estimates then produced an estimate of the reliability at each clinician, where a reliability of 0 implies that all variability is due to measurement error, while a reliability of 1 indicates that all variability is due to real differences in performance. The distribution of reliability estimates across all clinicians was examined. The equation of reliability is as below.

$$\text{Reliability} = [\sigma^2_{\text{provider-to-provider}}/(\sigma^2_{\text{provider-to-provider}} + \sigma^2_{\text{error}})]$$

$$\sigma^2_{\text{provider-to-provider}} = \alpha\beta/[(\alpha+\beta+1)(\alpha+\beta)^2]$$

$$\sigma^2_{\text{error}} = p(1-p)/n$$

5.2.3 Reliability Testing Results

Table 5 provides the clinician-level reliability by denominator decile and Table 6 includes the clinician-level reliability by reliability score decile. Both used a minimum sample size of >= 20.

Table 7 provides the distribution of reliability at the group level with no minimum samples applied. All tables can be found in the supplemental attachment.

5.2.4 Interpretation of Reliability Results

Reliability is the measure of whether you can distinguish one provider from another. A reliability of 1 indicates that all variability is due to real differences in performance. Our result of mean reliability is 0.69 for patients with a diagnosis of diabetes and/or hypertension among individual clinicians with 20 or more patients in the denominator in Table 5. Results in Table 6 show the distribution of reliabilities by reliability decile at the individual clinician level. When we limited the sample size to 20 patients and greater, 96% (79 out of 82) of entities have a reliability of ≥ 0.4; 88% (72 out of 82) of entities have a reliability of ≥ 0.5; and 63% (52 out of 82) of entities have a reliability of ≥ 0.6. Lastly, the mean reliability at the group level across all six clinics was 0.971 and the interquartile range is narrow, demonstrating that variability is due to real differences in group performance rather than noise (Table 7).

To understand what may have contributed to the lower reliability scores at the individual clinician level (i.e., at least 70% of clinicians did not achieve reliability of ≥0.6), we compared the factors affecting reliability between clinician groups with reliabilities < and ≥0.6: sample size, performance score, and within variance (i.e., noise).

- The median sample size is 25 in those clinicians with reliability <0.6 **VS.** 76 in those clinicians with reliability ≥0.6. When holding other factors unchanged, reliability decreases with decreasing sample size.
- The performance score is 27% in those clinicians with reliability <0.6 **VS**. 24% in those clinicians with reliability ≥0.6. When holding other factors unchanged, reliability decreases with probability (i.e., performance score) increasing before reaching 50%.
- The mean within variance is 0.0074 in those clinicians with reliability <0.6 **VS**. 0.0025 in those clinicians with reliability ≥0.6. Based on the formula, when within variance (i.e., noise) is larger, the reliability is smaller.

Table 2a. Accountable Entity Level Reliability Testing Results by Denominator, Target Population Size

Table 5: Reliability by denominator decile, clinician-level, 2025, sample size >= 20

	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Reliability	**0.6920**	0.4829	0.5615	0.6135	0.5608	0.6170	0.6272	0.7239	0.7506	0.7739	0.8125	0.9177	0.9547
Mean Performance Score	**24.59%**	3.85%	18.38%	16.30%	26.92%	25.04%	29.19%	22.57%	26.27%	30.53%	31.48%	18.48%	45.88%

N of Entities	68	1	7	7	7	8	6	6	7	7	7	6	1
N of Persons / Encounters / Episodes	4,480	21	153	173	206	283	243	297	486	591	767	1,281	342

Note on Table 5: The sample size (i.e., N of persons per entity) is calculated based on number of persons with both diabetes and hypertension. As a result, total 68 entities are included for this table.

Table 2b. Accountable Entity Level Reliability Testing Results by Reliability Score

Table 6: Reliability by reliability score decile, clinician-level, 2025, sample size >= 20

	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Reliability	**0.6920**	0.4829	0.5022	0.5397	0.5802	0.6213	0.6722	0.7195	0.7561	0.7928	0.8392	0.9279	0.9547

Table 7: Distribution of reliability, group-level, 2025

# of Clinics	# of patients	Min	P10	P25	Median	P75	P90	Max	Mean	Std Deviation
6	7,885	0.948	0.948	0.949	0.976	0.987	0.991	0.992	0.971	0.0186

5.3.1 Level(s) of Validity Testing Conducted

Person or encounter level (i.e., data element) (e.g., sensitivity and specificity)

5.3.2 Type of Accountable Entity Level Validity Testing Conducted

Systematic assessment of face validity of the measure’s performance score as an indicator of quality or resource use

5.3.3 Method(s) of Validity Testing

Data element validity testing

We performed data element validity test for two clinics with Epic as their EHRs. An electronic report of the data elements as defined by the eCQM specification was produced and the medical record was then reviewed by a clinician for the presence or absence of the same data elements on

a randomly selected set of patients. The results of the electronic report were then compared against the medical record (gold standard). The sample size for this analysis was 85 patients randomly selected.

First, we calculated percentage of agreement of data used in the analysis with data from the gold standard. We defined “agreement” if both are reported same. Second, we calculated a Kappa coefficient, which is a measure of interrater agreement. When there is perfect agreement between the two ratings, the kappa coefficient equals +1. When the observed agreement exceeds chance agreement, the value of kappa is positive, and its magnitude reflects the strength of agreement. The minimum value of kappa is between –1 and 0, depending on the marginal proportions. A value of kappa higher than 0.75 can be considered (arbitrarily) as "excellent" agreement, while lower than 0.4 will indicate "poor" agreement.

In addition, we also calculated sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) for the individual data elements. Using the diabetes diagnosis data element as an example, these analyses tell us the following:

- Sensitivity is the probability that a person is reported as having a diagnosis of diabetes among those who truly have that diagnosis documented in the “gold standard.”
- Specificity is fraction of those reporting that they do not have the diabetes diagnosis who actually do not have the diagnosis documented in the “gold standard.”
- PPV is the probability of true patients with a diagnosis of diabetes among those who reported diabetes.
- NPV is the probability of true patients without a diagnosis of diabetes among those who reported that they did not have that diagnosis.

Face validity testing

As we considered expanding the denominator for the existing measure in MIPS (Quality ID# 488) to include patients with a diagnosis of hypertension in addition to diabetes, we distributed a survey to 23 individuals (19 clinicians and 4 patients) to formally assess the face validity of the updated measure. Information on the updated measure was provided, and we systematically assessed the face validity of the measure score as an indicator of quality based on the responses received to the following questions:

- The scores obtained from the measure as specified can be used to distinguish good and poor quality.
- The measure specifications are appropriate and align with current evidence.

Respondents were asked to indicate their agreement based on a five-point scale, where 1= Strongly Disagree; 2 = Agree; 3=Neither Agree nor Disagree; 4 – Agree; 5=Strongly Agree. They were also asked to provide further information on why they may disagree or strongly disagree

with a statement.

5.3.4 Validity Testing Results

Data element validity testing

Results by each data element are presented in Table 8 in the supplemental attachment. Analysis of the individual data elements demonstrated that the range of percentage of agreement is from 88.1% to 100%. The range of Kappa is from 0.729 to 1.00.

Table 8. Validity testing on data elements

Data element		Manual abstraction (gold standard)	EHR automated report	Percentage of agreement^	Kappa	Sensitivity %	Specificity %	PPV %	NPV %
Elements for Supplemental Data	Ethnicity	100.00	100.00	100.00		100.00	n.a.	100.00	n.a.
	Payer	100.00	100.00	100.00		100.00	n.a.	100.00	n.a.
	Race	100.00	100.00	100.00		100.00	n.a.	100.00	n.a.
	Sex/Gender	100.00	100.00	100.00		100.00	n.a.	100.00	n.a.
	Age	100.00	100.00	100.00		100.00	n.a.	100.00	n.a.
Elements for Initial Population	Diabetes diagnosis	53.57	52.38	98.81	0.976	97.78	100.00	100.00	97.50
	Hypertension diagnosis	90.48	90.48	97.62	0.862	98.68	87.50	98.68	87.50
	At least 1 outpatient visit	100.00	100.00	100.00		100.00	n.a.	100.00	n.a.
	CKD Stage 5	100.00	100.00	100.00		100.00	n.a.	100.00	n.a.
Elements for Denominator Exclusions	ESRD	100.00	100.00	100.00		100.00	n.a.	100.00	n.a.
	Hospice	100.00	100.00	100.00		100.00	n.a.	100.00	n.a.
	Palliative Care	100.00	100.00	100.00		100.00	n.a.	100.00	n.a.
Elements for Numerator	eGFR	100.00	100.00	100.00		100.00	n.a.	100.00	n.a.
	UACR	35.71	28.57	88.10	0.729	73.33	96.30	91.67	86.67

^Agreement: "Yes" for manual abstraction and "1" for the electronic report OR "No" for manual abstraction and "0" for the electronic report.

Face validity testing

Twelve out of 23 individuals responded to the survey (52%) and at least one respondent was a patient. All agreed (25%) or strongly agreed (75%) that the scores obtained from this measure can distinguish between high and low-quality performance. Thirty-three percent agreed and 67% strongly agreed that the measure specifications were appropriate and aligned with current

evidence.

5.3.5 Interpretation of Validity Results

Data element validity testing

Analysis of the individual data elements demonstrated that the range of percentage of agreement is from 88.1% to 100%. The range of Kappa is from 0.729 to 1.00. These results show very good agreement.

Face validity testing

There was 100% agreement that the scores obtained from this measure can distinguish between high and low-quality performance and the measure as specified is aligned with current evidence. These responses support the use of this measure to evaluate the quality of care provided on routine testing for CKD.

5.4.1 Methods Used to Address Risk Factors

No risk adjustment or stratification

6.1.1 Current Status

Not in use

6.1.2 Current or Planned Use(s)

Public Reporting, Payment Program, Quality Improvement with Benchmarking (external benchmarking to multiple organizations), Quality Improvement (Internal to the specific organization)

6.1.4 Attributes for Accountability Use

The existing measures Quality ID #488: Kidney Health Evaluation and the National Committee for Quality Assurance (NCQA) measure Kidney Health Evaluation for Patients With Diabetes (KED) are used in numerous government and quasi-governmental accountability programs. Both measures have the same quality target: closing the gap in the percentage of persons 18–85 years of age with diabetes (type 1 or type 2) who received a kidney health evaluation, defined by an estimated glomerular filtration rate (eGFR) and a urine albumin-creatinine ratio (uACR), during the measurement period. The measures were developed and specified for use in accountability programs at the clinician level (i.e., the Merit-Based Incentive Payment System (MIPS)) and the health plan level (i.e., the Healthcare Effectiveness Data and Information Set (HEDIS)). As a result of this strategy, we can align health programs around the measures by advocating for their inclusion in accountability programs of various designs. Our advocacy strategy has been successful, demonstrated by the adoption of Kidney Health Evaluation in the Quality Payment Program (QPP) including both traditional MIPS and MIPS Value Pathways, interest in the measure

for the APM Performance Pathway (APP) Plus quality measure set, and accountability for measure performance in both HEDIS and the Medicare Advantage Star Ratings.

The strategy for the expanded measure with the inclusion of hypertension in the clinician and group levels is similar. We are already in discussions with the Centers for Medicare and Medicaid Services (CMS) about the use of the expanded measure in MIPS and how the addition of hypertension would enhance other accountability programs like MIPS Value Pathways. The addition of hypertension to the denominator will support development of a health plan measure, which will be suitable for the Medicaid and Children's Health Insurance Program (CHIP) Core Set and for the quality measure set for Federally Qualified Health Centers (FQHCs), the Uniform Data System.

The expanded measure is a process measure for which we do not anticipate any differential performance by either clinicians or health plans based on medical or social risk factors. The clinical practice guidelines upon which the measure is based also does not suggest that performance should vary by unmodifiable structural factors. Therefore, the measure specification does not include risk adjustment.

6.2.1 Actions of Measured Entities to Improve Performance

Two actions entities must take to ensure successful performance on this measure include education of cross-functional clinical care teams and engagement with laboratory leadership to ensure accurate calculation and reporting of kidney testing results.

Previous testing of the KEH measure (Quality ID# 488) for measured entities was approximately under 40% for the population with diabetes who should be receiving annual eGFR and uACR testing according to clinical practice guideline recommendations. The inclusion of patients with a diagnosis of hypertension strengthens the usefulness of the measure by addressing an equally important and high-risk population. To increase compliance, clinical care team education on the importance of screening at risk populations and targeted albuminuria testing is important. Once clinical care teams are engaged, collaboration with laboratory leadership is essential to clarify measured values are being captured accurately as issues may arise in the calculation of the uACR if urine albumin levels are below a detectable range.

If measured entities have created electronic health record-based best practice alerts or similar tools to improve performance on the Kidney Health Evaluation measure (Quality ID# 488), working with the institutional informatics teams to add the additional ICD-10 codes to the current algorithms, order sets, standing orders, etc., will facilitate improved performance on this new measure.

Reference:

Ferrè S, Storfer-Isser A, Kinderknecht K, et al. Fulfillment and Validity of the Kidney Health Evaluation Measure for People with Diabetes. *Mayo Clin Proc Innov Qual Outcomes*. 2023;7(5):382-391. Published 2023 Aug 29. doi:10.1016/j.mayocpiqo.2023.07.002

6.2.5a Potential Unintended Consequences

No unintended consequences with the use of the previous version of the measure in MIPS (Quality ID# 488) has been identified and we do not anticipate that the expansion of the denominator will create any potential new concerns. NKF will continue to monitor for unintended consequences.

7.1 Supplemental Attachment

5611e-NKF-KEH-Supplemental-Attachment-Spring-2026.1.pdf

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