NATIONAL QUALITY FORUM

Measure Information

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

Brief Measure Information

NQF #: 2988
Corresponding Measures:
De.2. **Measure Title:** Medication Reconciliation for Patients Receiving Care at Dialysis Facilities
Co.1.1. **Measure Steward:** Kidney Care Quality Alliance (KCQA)
De.3. **Brief Description of Measure:** Percentage of patient-months for which medication reconciliation* was performed and documented by an eligible professional.**

* "Medication reconciliation" is defined as the process of creating the most accurate list of all home medications that the patient is taking, including name, indication, dosage, frequency, and route, by comparing the most recent medication list in the dialysis medical record to one or more external list(s) of medications obtained from a patient or caregiver (including patient-/caregiver-provided "brown bag" information), pharmacotherapy information network (e.g., Surescripts), hospital, or other provider.

** For the purposes of medication reconciliation, "eligible professional" is defined as: physician, RN, ARNP, PA, pharmacist, or pharmacy technician.
1b.1. **Developer Rationale:** Medication management is a critical safety issue for all patients, but especially so for patients with ESRD, who often require 10 or more medications and take an average of 17-25 doses per day, have numerous comorbid conditions, have multiple healthcare providers and prescribers, and undergo frequent medication regimen changes(1,2,3,4). Medication-related problems (MRPs) contribute significantly to the approximately $40 billion in public and private funds spent annually on ESRD care in the United States(5,6), and it is believed that medication management practices focusing on medication documentation, review, and reconciliation could systematically identify and resolve MRPs, improve ESRD patient outcomes, and reduce total costs of care. As most hemodialysis patients are seen at least thrice weekly and peritoneal dialysis patients monthly, the dialysis facility has been suggested as a reasonable locale for medication therapy management(7).

S.4. **Numerator Statement:** Number of patient-months for which medication reconciliation was performed and documented by an eligible professional during the reporting period.

The medication reconciliation MUST:
• Include the name or other unique identifier of the eligible professional;

AND

• Include the date of the reconciliation;

AND

• Address ALL known home medications (prescriptions, over-the-counters, herbals, vitamin/mineral/dietary (nutritional) supplements, and medical marijuana);

AND

• Address for EACH home medication: Medication name(1), indication(2), dosage(2), frequency(2), route of administration(2), start and end date (if applicable)(2), discontinuation date (if applicable)(2), reason medication was stopped or discontinued (if

applicable)(2), and identification of individual who authorized stoppage or discontinuation of medication (if applicable)(2);

AND

• List any allergies, intolerances, or adverse drug events experienced by the patient.

_____

1. For patients in a clinical trial, it is acknowledged that it may be unknown as to whether the patient is receiving the therapeutic agent or a placebo.

2. "Unknown" is an acceptable response for this field.

S.7. **Denominator Statement:** Total number of patient-months for all patients permanently assigned to a dialysis facility during the reporting period.

S.10. **Denominator Exclusions:** In-center patients who receive < 7 hemodialysis treatments in the facility during the reporting month.

De.1. **Measure Type:** Process

S.23. **Data Source:** Electronic Health Record (Only), Other

S.26. **Level of Analysis:** Facility

IF Endorsement Maintenance – Original Endorsement Date: Jan 26, 2017 **Most Recent Endorsement Date:** Jan 26, 2017

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

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

De.4. **IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results?** Not applicable.

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

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

1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form
MM-2_NQF_EvidenceAttachment05-10-16FINAL.pdf

1b. Performance Gap

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

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

1b.1. **Briefly explain the rationale for this measure** *(e.g., the benefits or improvements in quality envisioned by use of this measure)*
Medication management is a critical safety issue for all patients, but especially so for patients with ESRD, who often require 10 or more medications and take an average of 17-25 doses per day, have numerous comorbid conditions, have multiple healthcare providers and prescribers, and undergo frequent medication regimen changes(1,2,3,4). Medication-related problems (MRPs) contribute significantly to the approximately $40 billion in public and private funds spent annually on ESRD care in the United States(5,6), and it is believed that medication management practices focusing on medication documentation, review, and reconciliation could systematically identify and resolve MRPs, improve ESRD patient outcomes, and reduce total costs of care. As most hemodialysis patients are seen at least thrice weekly and peritoneal dialysis patients monthly, the dialysis facility has been suggested as a reasonable locale for medication therapy management(7).

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

Medication Reconciliation for Patients Receiving Care at Dialysis Facilities is new measure that is not yet in use, so performance scores over time are not available. However, the measure was tested using data from three KCQA member dialysis organizations, each with the capacity to provide retrospective analyses from a data warehouse/repository. All pertinent data from all eligible (i.e., adult and pediatric in-center and home hemodialysis and peritoneal dialysis) patients of the participating organizations during the testing period were included in the dataset. The number of patients and contributing facilities varied by month, but approximately 325,000 patients and 5,292 facilities across the three organizations were included in each of the six months of the study. The study was conducted on data from April 1-September 30, 2015.

Performance scores obtained during testing are as follows:

- Mean Performance Score = 52.62%
- Standard Deviation = 32.83
- Standard Error = 0.197
- 95% Confidence Interval = 52.24 to 53.01
- Median Score = 48.18
- Mode of Scores = 100
- Range of Scores = 0 to 100
- Interquartile Range = 27.59 to 87.62

Results show a significant spread between both the minimum and maximum scores, as well as the median and minimum and maximum scores, indicating there is significant room for improvement in this aspect of care and that the measure identifies clinically and practically meaningful differences in performance among the measured entities.

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

Testing data are presented in 1b.2. Contemporary literature supports our findings documenting variations in performance and room for improvement in medication management practices in dialysis facilities.

As previously noted, ESRD patients often are prescribed 10 or more medications, have multiple comorbidities and numerous healthcare providers, and undergo frequent medication regimen changes, putting them at high risk for medication errors, discrepancies, and other medication-related problems (MRPs)(1,2,3,4). While there is a paucity of peer-reviewed empirical studies addressing medication management specifically in dialysis facilities, those that have been published provide convincing evidence for the need for increased focus in this area.

One small prospective observational study (2003) in a single outpatient hemodialysis center identified discrepancies in 60% of participating patients' home medications lists when compared to those documented in the dialysis facility medical record(8). A 2009 randomized controlled trial demonstrated an association between increased focus on medication management in dialysis facilities and the identification of real and potential MRPs, as well as a decrease in the numbers of drugs taken by ESRD patients and a reduction in all-cause hospitalization rates and hospital lengths-of-stay(1,9,10). Likewise, the Identifying Best Practices in Dialysis (IBPiD) Study, a cross-sectional staff survey of three dialysis organizations comparing the perceived quality of patient-, provider-, and facility-level practices with Standardized Mortality Ratio (SMR) scores from U.S. Renal Data Service (USRDS) facility reports, found units with lower-than-expected mortality rates convene multidisciplinary conferences sooner after dialysis patients return to the facility after hospitalization and perform medication reconciliation more frequently than high-mortality units(11).

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

Not applicable—new measure; not yet in use.

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

Again, empirical studies addressing medication management remain limited, and those focusing on dialysis patients or on sociodemographic discrepancies even more so. Two publications tangentially addressing such disparities among population groups were identified; only one was specific to the dialysis setting. Specifically, the previously mentioned 2003 observational study by

Manley et al. reported a negative correlation between age and the number of drug record discrepancies identified (r = -0.27, p = 0.04) in hemodialysis patients(8). The authors noted this was a reversal from what had previously been reported in medication adherence studies(14,15), and speculated sample size, follow-up period, or random phenomenon might apply. The other publication reported findings from a small 2014 Duquesne University study at an urban indigent primary care clinic, wherein medication discrepancies were more likely to persist in Caucasian subjects when compared to African Americans, despite pharmacist-led medication reconciliation. The authors theorized this finding might stem from variations in providers' communication styles with the two patient groups, but noted additional investigations in this area are needed(13).

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

The measure addresses:

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

1c.1. **Demonstrated high priority aspect of healthcare**

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

1c.2. **If Other:**

1c.3. **Provide epidemiologic or resource use data that demonstrates the measure addresses a high priority aspect of healthcare. List citations in 1c.4.**

Medication management is a widely acknowledged problem in health care, generally(12-17), but is especially important for patients with ESRD, who often require 10 or more medications and take an average of 17-25 doses per day(1). Reducing MRPs has the potential to significantly reduce morbidity and mortality in dialysis-dependent patients. While there is a general paucity of pertinent randomized controlled trials (RCTs) in this area, one such study demonstrated an association between an increased focus on medication management practices and the identification of actual and potential MRPs, a decrease in the mean numbers of drugs taken by patients, and a reduction in all-cause hospitalization rates and hospital lengths-of-stay(1,9). Likewise, the IBPiD Study, a cross-sectional staff survey of three dialysis organizations comparing the perceived quality of patient-, provider-, and facility-level practices with SMR scores from USRDS facility reports, revealed units with lower-than-expected mortality rates convene multidisciplinary conferences sooner after dialysis patients return to the facility after hospitalization and perform medication reconciliation more frequently than high-mortality units(9). Finally, improved medication management practices will likely reduce healthcare costs. For example, a 2002 report estimated that every dollar spent on detecting and addressing MRPs in the dialysis population might ultimately save the healthcare system four dollars(10). More recently, a Minnesota study observed the reduction in total annual health expenditures exceeded the cost of providing MTM services by more than 12 to 1 in the general population. These savings would accrue from decreased prescription costs, from avoidance of unnecessary and/or inappropriate medications, and fewer hospitalizations(11).

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

1. Hakim RM, Collins AJ. Reducing avoidable rehospitalization in ESRD: A shared accountability. JASN. 2014;25(9):1891-1893.

2. Cardone KE, Bacchus S, Assimon MM, Pai AB, Manley HJ. Medication-related problems in CKD. Adv Chronic Kidney Dis. 2010;17(5):404-412.

3. Shoemaker SJ, Hassoi A. Understanding the landscape of MTM programs for Medicare Part D: Results from a study for the Centers for Medicare & Medicaid Services. J Am Pharm Assoc. 2011;51(4):520-526.

4. Forum of ESRD Networks' Medical Advisory Council. Medication Reconciliation Toolkit. 2009. Available at: http://esrdnetworks.org. Accessed March 22, 2016.

5. Parker WM and Cardone KE. Medication Management Services in a Dialysis Center: Patient and Dialysis Staff Perspectives. Albany College of Pharmacy and Health Services. January 2015. Available at: http://www.acphs.edu. Accessed March 22, 2016.

6. National Kidney and Urologic Diseases Information Clearinghouse. Kidney Disease Statistics for the United States. June 2012.

7. Pai AB, Cardone KE, Manley HJ, St. Peter WL, Shaffer R, Somers M, Mehrotra R. Dialysis Advisory Group of American Society of Nephrology. Medication reconciliation and therapy management in dialysis-dependent patients: Need for a systematic approach. CJASN. 2013;8(11):1988-1999.

8. Manley HJ, Drayer DK, McClaran M, Bender W, Muther RS. Drug record discrepancies in an outpatient electronic medical record: Frequency, type, and potential impact on patient care at a hemodialysis center. Pharmacotherapy. 2003;23(2):231-239.

9. Pai AB, Boyd A, Depczynski J, Chavez IM, Khan N, Manley H. Reduced drug use and hospitalization rates in patients undergoing hemodialysis who received pharmaceutical care: A 2-year, randomized, controlled study. Pharmacotherapy. 2009; 29: 1433–1440.

10. Spiegel B, Bolus R, Desai AA, Zagar P, Parker T, Moran J, Solomon MD, Khawar O, Gitlin M, Talley J, Nissenson A. Dialysis practices that distinguish facilities with below- versus above-expected mortality. CJASN. 2010;5:2024-2033.

11. Manley HJ, Carroll CA. The clinical and economic impact of pharmaceutical care in end-stage renal disease patients. Semin Dial. 2002;15:45–49.

12. Isetts BJ, Schondelmeyer SW, Artz MB, Lenarz LA, Heaton AH, Wadd WB, Brown LM, Cipolle RJ. Clinical and economic outcomes of medication therapy management services: The Minnesota experience. J Am Pharm Assoc. 2008;48:203–211.

13. Stewart AL, Lynch KJ. Medication discrepancies despite pharmacist led medication reconciliation: The challenges of maintaining an accurate medication list in primary care. Pharm Pract. 2014;12(1)360.

14. Bedell SF, Jabbour S, Goldberg R et al. Discrepancies in the use of medications: Their extent and predictors in an outpatient practice. Arch Intern Med. 2000;160:2129-2134.

15. Wagner MM, Hogan WR. The accuracy of medication data in an outpatient electronic medical record. J Am Med Inform Assoc. 1996;3:61-68.

16. Cipolle RJ. Clinical and economic outcomes of medication therapy management services: The Minnesota experience. J Am Pharm Assoc. 2008;48:203–211.

17. Tache SV, Sonnichsen A, Ashcrof, DM. Prevalence of adverse drug events in ambulatory care: A systematic review. The Annals of Pharmacotherapy. 2001; 45(7-8):977-989.

1c.5. **If a PRO-PM (e.g. HRQoL/functional status, symptom/burden, experience with care, health-related behaviors), provide evidence that the target population values the measured PRO and finds it meaningful.** *(Describe how and from whom their input was obtained.)*
Not applicable.

2. Reliability and Validity—Scientific Acceptability of Measure Properties

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

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

De.5. **Subject/Topic Area** *(check all the areas that apply):*
Renal, Renal : End Stage Renal Disease (ESRD)

De.6. **Non-Condition Specific** *(check all the areas that apply):*
Care Coordination, Safety, Safety : Medication

S.1. **Measure-specific Web Page** *(Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)*
http://www.kidneycarepartners.com/files2/94

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

S.2b. **Data Dictionary, Code Table, or Value Sets** *(and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)*
No data dictionary **Attachment:**

S.3. **For endorsement maintenance**, please briefly describe any changes to the measure specifications since last endorsement date and explain the reasons.
Not applicable; new measure.

S.4. **Numerator Statement** *(Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome)*
IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm.
Number of patient-months for which medication reconciliation was performed and documented by an eligible professional during the reporting period.

The medication reconciliation MUST:
• Include the name or other unique identifier of the eligible professional;

AND

• Include the date of the reconciliation;

AND

• Address ALL known home medications (prescriptions, over-the-counters, herbals, vitamin/mineral/dietary (nutritional) supplements, and medical marijuana);

AND

• Address for EACH home medication: Medication name(1), indication(2), dosage(2), frequency(2), route of administration(2), start and end date (if applicable)(2), discontinuation date (if applicable)(2), reason medication was stopped or discontinued (if applicable)(2), and identification of individual who authorized stoppage or discontinuation of medication (if applicable)(2);

AND

• List any allergies, intolerances, or adverse drug events experienced by the patient.

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1. For patients in a clinical trial, it is acknowledged that it may be unknown as to whether the patient is receiving the therapeutic agent or a placebo.

2. “Unknown” is an acceptable response for this field.

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

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

NUMERATOR STEP 1. For each patient meeting the denominator criteria in the given calculation month, identify all patients with each of the following three numerator criteria (a, b, and c) documented in the facility medical record to define the numerator for that month:

A. Facility attestation that during the calculation month:

1. The patient's most recent medication list in the dialysis medical record was reconciled to one or more external list(s) of medications obtained from the patient/caregiver (including patient-/caregiver-provided "brown-bag" information), pharmacotherapy information network (e.g., Surescripts®), hospital, or other provider AND that ALL known medications (prescriptions, OTCs, herbals, vitamin/mineral/dietary [nutritional] supplements, and medical marijuana) were reconciled;

AND

2. ALL of the following items were addressed for EACH identified medication:
   a) Medication name;
   b) Indication (or "unknown");
   c) Dosage (or "unknown");
   d)Frequency (or "unknown");
   e) Route of administration (or "unknown");
   f) Start date (or "unknown");
   g) End date, if applicable (or "unknown");
   h) Discontinuation date, if applicable (or "unknown");
   i) Reason medication was stopped or discontinued, if applicable (or "unknown"); and
   j) Identification of individual who authorized stoppage or discontinuation of medication, if applicable (or "unknown");

AND

3. Allergies, intolerances, and adverse drug events were addressed and documented.

B. Date of the medication reconciliation.

C. Identity of eligible professional performing the medication reconciliation.

NUMERATOR STEP 2. Repeat "Numerator Step 1" for each month of the one-year reporting period to define the final numerator (patient-months).

S.7. **Denominator Statement** *(Brief, narrative description of the target population being measured)*
Total number of patient-months for all patients permanently assigned to a dialysis facility during the reporting period.

S.8. **Target Population Category** *(Check all the populations for which the measure is specified and tested if any):*
Populations at Risk, Populations at Risk : Individuals with multiple chronic conditions

S.9. **Denominator Details** *(All information required to identify and calculate the target population/denominator such as definitions, specific data collection items/responses , code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)*
DENOMINATOR STEP 1. Identify all in-center and home hemodialysis and peritoneal dialysis patients permanently assigned to the dialysis facility in the given calculation month.

DENOMINATOR STEP 2. For all patients included in the denominator in the given calculation month in "Denominator Step 1", identify and remove all in-center hemodialysis patients who received < 7 dialysis treatments in the calculation month.

DENOMINATOR STEP 3. Repeat "Denominator Step 1" and "Denominator Step 2" for each month of the one-year reporting period.

S.10. **Denominator Exclusions** *(Brief narrative description of exclusions from the target population)*
In-center patients who receive < 7 hemodialysis treatments in the facility during the reporting month.

S.11. **Denominator Exclusion Details** *(All information required to identify and calculate exclusions from the denominator such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)*
As detailed in "Denominator Step 2" above, transient patients, defined as in-center patients who receive < 7 hemodialysis treatments in the facility during the reporting month, are excluded from the measure.

S.12. **Stratification Details/Variables** *(All information required to stratify the measure results including the stratification variables, definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b)*
Not applicable.

S.13. **Risk Adjustment Type** (Select type. Provide specifications for risk stratification in S.12 and for statistical model in S.14-15)
No risk adjustment or risk stratification
If other:

S.14. **Identify the statistical risk model method and variables** *(Name the statistical method - e.g., logistic regression and list all the risk factor variables. Note - risk model development and testing should be addressed with measure testing under Scientific Acceptability)*
Not applicable.

S.15. **Detailed risk model specifications** *(must be in attached data dictionary/code list Excel or csv file. Also indicate if available at measure-specific URL identified in S.1.)*
Note: Risk model details (including coefficients, equations, codes with descriptors, definitions), should be provided on a separate worksheet in the suggested format in the Excel or csv file with data dictionary/code lists at S.2b.

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

S.16. **Type of score:**
Rate/proportion
If other:

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

S.18. **Calculation Algorithm/Measure Logic** *(Describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; aggregating data; risk adjustment; etc.)*
Scores are calculated using the following algorithm. For each calculation month in the one-year reporting period:

1. IDENTIFY THE "RAW DENOMINATOR POPULATION"
Identify all in-center and home hemodialysis and peritoneal dialysis patients permanently assigned to the dialysis facility during the given calculation month.

2. REMOVE PATIENTS MEETING MEASURE EXCLUSION CRITERIA TO DEFINE THE "FINAL DENOMINATOR POPULATION" FOR THE CALCULATION MONTH

For all patients included in the denominator during the given calculation month in Step 1 above, identify and remove all in-center patients who received < 7 hemodialysis treatments during the given calculation month.

3. IDENTIFY THE "NUMERATOR POPULATION" FOR THE CALCULATION MONTH
For each patient remaining in the denominator during the given calculation month after Step 2, identify all patients with each of the following three numerator criteria (a, b, and c) documented in the facility medical record to define the numerator for that month:

A. Facility attestation that during the calculation month:

1. The patient's most recent medication list in the dialysis medical record was reconciled to one or more external list(s) of medications obtained from the patient/caregiver (including patient-/caregiver-provided "brown-bag" information), pharmacotherapy information network (e.g., Surescripts®), hospital, or other provider AND that ALL known medications (prescriptions, OTCs, herbals, vitamin/mineral/dietary [nutritional] supplements, and medical marijuana) were reconciled;

AND

2. ALL of the following items were addressed for EACH identified medication:
a) Medication name;
b) Indication (or "unknown");
c) Dosage (or "unknown");
d) Frequency (or "unknown");
e) Route of administration (or "unknown");
f) Start date (or "unknown");
g) End date, if applicable (or "unknown");
h) Discontinuation date, if applicable (or "unknown");
i) Reason medication was stopped or discontinued, if applicable (or "unknown"); and
j) Identification of individual who authorized stoppage or discontinuation of medication, if applicable (or "unknown");

AND

3. Allergies, intolerances, and adverse drug events were addressed and documented.

B. Date of medication reconciliation.

C. Identity of eligible professional performing medication reconciliation.

4. CALCULATE THE PERFORMANCE SCORE FOR THE CALCULATION MONTH
Calculate the facility's performance score for the given calculation month as follows:

Month's Performance Score = Month's Final Numerator Population ÷ Month's Final Denominator Population

5. CALCULATE THE ANNUAL PERFORMANCE SCORE
Calculate the facility's annual performance score as follows:

Facility's Annual Performance Score = (Facility's Month 1 Score + Month 2 Score +..... + Month 12 Score) ÷ 12

S.19. **Calculation Algorithm/Measure Logic Diagram URL or Attachment** *(You also may provide a diagram of the Calculation Algorithm/Measure Logic described above at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)*
No diagram provided

S.20. **Sampling** *(If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)*
IF a PRO-PM, identify whether (and how) proxy responses are allowed.
Not applicable.

S.21. **Survey/Patient-reported data** *(If measure is based on a survey, provide instructions for conducting the survey and guidance on minimum response rate.)*
IF a PRO-PM, specify calculation of response rates to be reported with performance measure results.
Not applicable.

S.22. **Missing data** (specify how missing data are handled, e.g., imputation, delete case.)
Required for Composites and PRO-PMs.
Medication Reconciliation for Patients Receiving Care at Dialysis Facilities is constructed as an "all or nothing" measure, such that a medication reconciliation event for which any of the numerator data elements are missing does not meet the measure criteria and is counted as a measure "fail" for that calculation month. Consequently, there is no missing data to report on this measure.

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

S.24. **Data Source or Collection Instrument** *(Identify the specific data source/data collection instrument e.g. name of database, clinical registry, collection instrument, etc.)*
IF a PRO-PM, identify the specific PROM(s); and standard methods, modes, and languages of administration.
Dialysis facility medical record; intended for use by CMS in its CROWNWeb ESRD Clinical Data Repository.

S.25. **Data Source or Collection Instrument** *(available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)*
No data collection instrument provided

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

S.27. **Care Setting** *(Check ONLY the settings for which the measure is SPECIFIED AND TESTED)*
Dialysis Facility
If other:

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

2a. Reliability – See attached Measure Testing Submission Form
2b. Validity – See attached Measure Testing Submission Form
MM-2_NQF_TestingAttachment05-10-16FINAL.pdf

3. Feasibility

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

3a. Byproduct of Care Processes

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

3a.1. **Data Elements Generated as Byproduct of Care Processes.**
Generated or collected by and used by healthcare personnel during the provision of care (e.g., blood pressure, lab value, diagnosis, depression score)
If other:

3b. Electronic Sources

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

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

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

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

3c. Data Collection Strategy

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

3c.1. **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.**
IF a PRO-PM, consider implications for both individuals providing PROM data (patients, service recipients, respondents) and those whose performance is being measured.
MEDICATION MANAGEMENT DEFINITIONAL DISCREPANCIES. When developing the measure specifications and operationalizing the specifications for testing, it was noted while all three dialysis organizations that participated in testing have identified and engage in the same three components of medication management—i.e., documentation, reconciliation, and review—one organization defined reconciliation and review in reverse to those detailed in the KCQA measure specifications. Specifically, "medication reconciliation" is defined within that organization as "the process of creating the most accurate list of all medications that the patient is taking by comparing the most recent medication list in the medical record to one or more external list(s) of medications obtained from a patient or caregiver," while "medication review" is defined as "a process of evaluating a patient's medications and confirming them as being appropriate, safe, and convenient for the patient; a review with the patient may be included."
Based on other KCQA Workgroup member input and our outreach to the other two testing organizations and KCQA members, however, this appeared to be an outlier situation—albeit a significant one. Our final approach to the medication management definitions was ultimately agreed upon because the majority of dialysis organizations use this convention, as do hospitals, pharmacists, and the existing NQF-endorsed measures in the area.

DATA SYSTEM DISCREPANCIES. Again, when developing the measure specifications and operationalizing the specifications for testing, variations between the electronic medical record systems of the three large dialysis organizations that participated in testing were identified. For instance, a given data element (e.g., indication, start date, name of eligible professional) might not be present or might be available only as a free text field. It was further noted that this variability might be even greater in the medium and small dialysis organizations. Given the variability among electronic systems and because some medications are prescribed by other entities for which "indication" may be unknown, for example, it was determined that "unknown" must be an allowable response to many data elements so as to maintain the measure's feasibility.

3c.2. **Describe any fees, licensing, or other requirements to use any aspect of the measure as specified** *(e.g., value/code set, risk model, programming code, algorithm)*.
Not applicable.

4. Usability and Use

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

4a. Accountability and Transparency

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

4.1. Current and Planned Use

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

Planned	Current Use (for current use provide URL)
Public Reporting Payment Program Quality Improvement (Internal to the specific organization) Not in use	

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

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

Not applicable; this is a new measure that is not yet in use as specified. Variants of the measure are currently in use by KCQA member dialysis organizations for internal quality improvement, prompting KCQA to develop this measure to standardize the specifications and definitions for accountability purposes.

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

This is a new measure undergoing initial endorsement assessment. The measure is not yet in use as specified; however, variants of the measure are currently in use by KCQA member dialysis organizations for internal quality improvement, prompting KCQA to develop this measure to standardize the specifications and definitions for accountability purposes.

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

The measure was developed for use by CMS for its accountability initiatives. We note the measure requires a number of data fields not currently available in the CROWNWeb ESRD clinical data repository, and would require a system update for implementation. As we have done for other KCQA measures, we intend to commence discussions with CMS in this regard, specifically to request that the measure be included in the Measures Under Consideration for Use in Federal Programs List submitted to NQF's Measure Applications Partnership (MAP) in an upcoming cycle and that a CROWNWeb System Change form be created to commence building the necessary data elements into the system.

4b. Improvement

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

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

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

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

Not applicable; new measure undergoing initial endorsement review.

4b.2. **If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.**
The measure is new and is not yet in use. However, variants of the measure are currently in use by KCQA member dialysis organizations for internal quality improvement. Standardizing specifications and definitions for accountability purposes will improve and expedite identification and resolution of real and potential medication-related problems (MRPs) in ESRD patients. Associated hospitalization, readmissions, mortality, and health care costs should consequently be minimized.

4c. Unintended Consequences

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

4c.1. **Were any unintended negative consequences to individuals or populations identified during testing; OR has evidence of unintended negative consequences to individuals or populations been reported since implementation? If so, identify the negative unintended consequences and describe how benefits outweigh them or actions taken to mitigate them.**
No unintended consequences were identified during testing.

5. Comparison to Related or Competing Measures

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

5. Relation to Other NQF-endorsed Measures

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

5.1a. **List of related or competing measures (selected from NQF-endorsed measures)**
0097 : Medication Reconciliation Post-Discharge
0554 : Medication Reconciliation Post-Discharge (MRP)
2456 : Medication Reconciliation: Number of Unintentional Medication Discrepancies per Patient

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

5a. Harmonization

The measure specifications are harmonized with related measures;
OR
The differences in specifications are justified

5a.1. **If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):**
Are the measure specifications completely harmonized?
No

5a.2. **If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.**
Medication Reconciliation for Patients Receiving Care at Dialysis Facilities is harmonized with existing NQF-endorsed medication reconciliation measures in that all similarly specify that the medication reconciliation must address ALL prescriptions, over-the-counters,herbals,vitamin/mineral/dietary (nutritional) supplements AND must contain the medications' name, dosage, frequency, and route. The KCQA measure, however, is unique among the currently endorsed medication reconciliation measures in that the level of analysis is the dialysis facility. The KCQA measure also moves beyond a single "check/box", specifying multiple components

that must be met to be counted as a "success." It requires the following additional information on each medication, where applicable and known: indication, start and end date, discontinuation date, reason the medication was stopped or discontinued, and identification of the individual who authorized stoppage or discontinuation of the medication. Additionally, given the increasing frequency with which medical marijuana is prescribed, the KCQA measure specifies that this pharmacotherapeutic agent must be addressed during the reconciliation. KCQA believes these additional foci are necessary to ensure the medication reconciliation process is as comprehensive as possible to better identify and effectively address potential sources of adverse drug-related events and not function merely as a single "check-box" measure. Testing demonstrated these data elements are effectively captured and recorded in facility's electronic medical record systems during the routine medication reconciliation process.

5b. Competing Measures

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

5b.1. **If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):**
Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)
Not applicable; this medication management measure is unique in its specific focus on the ESRD population.

Appendix

A.1 Supplemental materials may be provided in an appendix. All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.
Attachment **Attachment:** tbKCQA_Specs-TestingData05-10-16FINAL.pdf

Contact Information

Co.1 **Measure Steward (Intellectual Property Owner):** Kidney Care Quality Alliance (KCQA)
Co.2 **Point of Contact:** Lisa, McGonigal, lmcgon@msn.com, 203-530-9524-
Co.3 **Measure Developer if different from Measure Steward:** Kidney Care Quality Alliance (KCQA)
Co.4 **Point of Contact:** Lisa, McGonigal, lmcgon@msn.com, 203-530-9524-

Additional Information

Ad.1 **Workgroup/Expert Panel involved in measure development**
Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
The KCQA Steering Committee guides the measure development process. Steering Committee members are:

- Edward Jones, MD; KCQA Co-Chair — Renal Physicians Association
- Allen Nissenson, MD; KCQA Co-Chair — DaVita
- Jason Spangler, MD, MPH — Amgen
- Donna Bednarski, RN, MSN — American Nephrology Nurses Association
- Barbara Fivush, MD — American Society of Pediatric Nephrology
- Raymond Hakim, MD, PhD — American Society of Nephrology
- Scott Ash, MHA — Fresenius Medical Care North America
- Chris Lovell, RN, MSN — Dialysis Clinics, Inc.
- Thomas Manley, RN, BSN — National Kidney Foundation
- Gail Wick, MHSA, BSN, RN — American Kidney Fund
- Shari M. Ling, MD, Chief Medical Officer, Centers for Medicare and Medicaid Services, Center for Clinical Standards and Quality (CCSQ) – CMS Liaison Member

The KCQA Measure Feasibility/Testing Workgroup provided technical expertise and guidance to develop the specifications. Workgroup members were:

- Richard Faris, PhD, MSc, RPh — DaVita
- James Guffey — Dialysis Patient Citizens
- Jeffrey Hymes, MD — Fresenius Medical Care North America
- Len Usvyat, PhD — Fresenius Medical Care Renal Therapies Group
- Harold Manley, PharmD, FASN, FCCP — Dialysis Clinics, Inc.
- Paul Miller, MD — Renal Physicians Association
- Donald Molony, MD — Forum of ESRD Networks
- Glenda Payne, MS, RN, CNN — American Nephrology Nurses Association
- Sharon Perlman, MD — American Society of Pediatric Nephrology
- Wendy St. Peter, PharmD, FASN, FCCP, FNKF — National Kidney Foundation
- Gail Wick, MHSA, BSN, RN; KCQA Steering Committee Liaison — American Kidney Fund

KCQA Lead (Voting) Representatives identify KCQA's measure development foci, review the Workgroup's output and testing results, and approve major milestones during the development of the process, including and assessment of the face validity of the measure and submission to NQF. KCQA Lead Representatives are:

- Michael Heiffets, MD — AbbVie
- Qing Zuraw, MD, MBA — Akebia Therapeutics, Inc.
- Gail Wick, MHSA, BSN, RN — American Kidney Fund
- Glenda Payne, MS, RN, CNN — American Nephrology Nurses' Association
- Richard Cronin, MD — American Renal Associates, Inc.
- Raymond Hakim, MD, PhD — American Society of Nephrology
- Barbara Fivush, MD — American Society of Pediatric Nephrology
- Jason Spangler, MD, MPH — Amgen
- Maggie Gellens — Baxter Healthcare Corporation
- RJ Picciano — Board of Nephrology Examiners and Technology
- Peter DeOreo, MD — Centers for Dialysis Care
- LeAnne Zumwalt — DaVita Healthcare Partners, Inc.
- James Michael Guffey — Dialysis Patient Citizens
- Doug Johnson, MD — Dialysis Clinic, Inc.
- Jeffrey Hymes, MD — Fresenius Medical Care North America
- Robert Kossman, MD — Fresenius Medical Care Renal Therapies Group
- Jennifer Holcomb/William Poire — Greenfield Health Systems
- Thomas Nusbickel — Hospira
- Greg Madison — Keryx Biopharmaceuticals, Inc.
- Cherilyn Cepriano — Kidney Care Council
- Linda Keegan — Kidney Care Partners
- Donald Molony, MD/Andrew Howard, MD — The National Forum of ESRD Networks
- Tonya Saffer — National Kidney Foundation
- Deb Cote — National Renal Administrators Association
- Nancy Gallagher — Nephrology Nursing Certification Commission
- Tosha Whitley — Northwest Kidney Centers
- Leslie Spry, MD — NxStage Medical
- Paul Palevsky, MD — Renal Physicians Association
- Jonathan Lorch, MD — Rogosin Institute
- Sara Froelich — Sanofi
- Brigitte Schiller — Satellite Healthcare
- Stan Lindenfeld, MD — U.S. Renal Care

In addition to the assessment by KCQA Lead Representatives, KCQA conducted face validity assessment at the performance score level by convening a 9-member panel of other renal experts:

- Lorien Dalrymple, MD, MPH — University of California, Davis Health System
- Norma Gomez, MSN, MBA — Satellite Healthcare
- Hrant Jamgochian, JD, LLM — Dialysis Patient Citizens
- Charla Litton, FNP — People's Health Network
- Klemens Meyer, MD — Dialysis Clinic, Inc.

- Donna Painter, RN — Fresenius Medical Care North America
- Barry Smith, MD — Rogosin Institute
- Katherine Swanzy — DaVita Kidney Care
- Daniel Weiner, MD, MS — Tufts Medical Center

Measure Developer/Steward Updates and Ongoing Maintenance

Ad.2 **Year the measure was first released:** 2016

Ad.3 **Month and Year of most recent revision:** 05, 2016

Ad.4 **What is your frequency for review/update of this measure?** Annually, and as needed with changes or additions to the evidence base.

Ad.5 **When is the next scheduled review/update for this measure?** 05, 2017

Ad.7 **Disclaimers:** Dialysis facility performance measures (Measures) and related data specifications, developed by the Kidney Care Quality Alliance (KCQA), primarily funded by Kidney Care Partners, are intended to facilitate quality improvement activities by dialysis providers.

These Measures are intended to assist dialysis facilities in enhancing quality of care. Measures are designed for use by any dialysis facility. These performance Measures are not clinical guidelines and do not establish a standard of medical care. KCQA has not tested its Measures for all potential applications. KCQA encourages the evaluation of its Measures.

Measures are subject to review and may be revised or rescinded at any time by KCQA. The Measures may not be altered without the prior written approval of KCQA. Measures developed by KCQA, while copyrighted, can be reproduced and distributed, without modification, for noncommercial purposes, e.g., use by dialysis providers in connection with their care delivery or for research. 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 Kidney Care Partners, on behalf of KCQA.

Neither KCQA nor its members shall be responsible for any use of these Measures.

THE MEASURES ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND.

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