



Renal, Fall 2019 Cycle: CDP Report

**DRAFT REPORT FOR COMMENT
MARCH 16, 2020**

This report is funded by the Department of Health and Human Services under contract HHSM-500-2017-00060I Task Order HHSM-500-T0001

<http://www.qualityforum.org>

Contents

Executive Summary	3
Introduction.....	4
NQF Portfolio of Performance Measures for Renal Conditions.....	4
Table 1. NQF Renal Portfolio of Measures	4
Renal Measure Evaluation	5
Table 2. Renal Measure Evaluation Summary	5
Comments Received Prior to Committee Evaluation	5
Summary of Measure Evaluation	5
Measures Withdrawn from Consideration.....	6
Table 3. Measures Withdrawn from Consideration	6
References	7
Appendix A: Details of Measure Evaluation.....	8
Measures Recommended	8
2979 Standardized Transfusion Ratio for Dialysis Facilities.....	8
Appendix B: Renal Portfolio—Use in Federal Programs.....	11
Appendix C: Renal Standing Committee and NQF Staff	12
Appendix D: Measure Specifications.....	15
NQF 2979 Standardized Transfusion Ratio for Dialysis Facilities	15
Appendix E: Related and Competing Measures	18
Appendix F: Pre-Evaluation Comments.....	19

Executive Summary

Renal disease is a leading cause of morbidity and mortality in the United States. More than 36 million adults—representing more than 14 percent of the adult population—have chronic kidney disease (CKD).¹ Untreated, CKD can progress to an advanced state of kidney dysfunction known as end-stage renal disease (ESRD) and a host of other health complications such as cardiovascular disease, hyperlipidemia, anemia, and metabolic bone disease. Currently, over half a million people in the U.S. have received a diagnosis of ESRD.¹ Considering the high mortality rates and high healthcare utilization and costs associated with ESRD, the need to focus on quality measures for patients with renal disease is particularly important.

Quality measurement plays a central role in facilitating improvement in the quality of care received by CKD patients, especially those on hemodialysis. NQF-endorsed kidney care measures are used in several quality and performance improvement programs administered by the Centers for Medicare and Medicaid Services (CMS), such as the ESRD Quality Incentive Program (ESRD QIP).

This project sought to identify and endorse performance measures for accountability and quality improvement that address conditions, treatments, interventions, or procedures relating to kidney disease.

For this project, the Renal Standing Committee evaluated one measure undergoing maintenance review against NQF's standard evaluation criteria. The Committee recommended the following measure for endorsement:

- **NQF 2979** Standardized Transfusion Ratio for Dialysis Facilities

A brief summary of the measure currently under review is included in the body of the report; a detailed summary of the Committee's discussion and ratings of the criteria for the measure is in [Appendix A](#).

Introduction

Kidney disease has long been a leading cause of morbidity and mortality in the U.S. More than 36 million adults—representing more than 14 percent of the adult population—have chronic kidney disease (CKD).¹ Untreated, CKD can progress to an advanced state of kidney dysfunction known as end-stage renal disease (ESRD) and a host of other health complications such as cardiovascular disease, hyperlipidemia, anemia and metabolic bone disease. Currently, over half a million people in the U.S. have received a diagnosis of ESRD.¹ Considering the high mortality rates and high healthcare utilization and costs associated with ESRD, the need to focus on quality measures for patients with renal disease is particularly important.

In 1972, President Richard Nixon signed section 2991 of Public Law 92-603, which established ESRD as the only healthcare condition that Medicare covers for people under the age of 65.² Under this provision, people are eligible for Medicare regardless of their age if their kidneys are no longer functioning, if they need regular dialysis, or if they have had a kidney transplant. The United States continues to spend significant resources on care and treatment of CKD and ESRD. In 2010, total Medicare spending rose 6.5 percent, to \$522.8 billion, and expenditures for ESRD rose 8 percent, to \$32.9 billion.¹

NQF Portfolio of Performance Measures for Renal Conditions

The Renal Standing Committee ([Appendix C](#)) oversees NQF's portfolio of Renal measures ([Appendix B](#)). This portfolio contains 23 measures: six process measures, 13 intermediate outcome measures, and four outcome measures (see table below).

Table 1. NQF Renal Portfolio of Measures

	Process	Intermediate Outcome	Outcome
Hemodialysis	1	2	-
Hemodialysis - Pediatric	-	1	-
Hemodialysis Vascular Access	1	4	-
Dialysis Monitoring	1	1	-
Dialysis Monitoring - Pediatric	2	1	-
Peritoneal Dialysis	-	4	-
Patient Safety	-	-	4
Treatment Initiation	1	-	-
Total	6	13	4

Additional renal measures have been assigned to other projects. These include various diabetes assessment and screening measures (Primary Care & Chronic Illness Standing Committee), eye care measures (Primary Care & Chronic Illness Standing Committee), ACEI/ARB medication measures (Cardiovascular and Primary Care & Chronic Illness Standing Committees), complications and outcomes measures (Cardiovascular, Patient Experience & Function, and Surgery Standing Committees), and cost and resource use measures (Cost and Efficiency Standing Committee).

NATIONAL QUALITY FORUM

NQF REVIEW DRAFT—Comments due by May 14, 2020 by 6:00 PM ET.

Renal Measure Evaluation

On January 30, 2020 the Renal Standing Committee evaluated one measure undergoing maintenance review against NQF's [standard measure evaluation criteria](#).

Table 2. Renal Measure Evaluation Summary

	Maintenance	New	Total
Measures under consideration	1	0	1
Measures recommended for endorsement	1	0	1

Comments Received Prior to Committee Evaluation

NQF solicits comments on endorsed measures on an ongoing basis through the [Quality Positioning System \(QPS\)](#). In addition, NQF solicits comments for a continuous 16-week period during each evaluation cycle via an online tool located on the project webpage. For this evaluation cycle, the commenting period opened on November 26, 2019 and will close on May 14, 2020. No comments were submitted prior to the measure evaluation meetings.

Summary of Measure Evaluation

The following brief summary of the measure evaluation highlights the major issues that the Committee considered. Details of the Committee's discussion and ratings of the criteria for each measure are included in [Appendix A](#).

2979 Standardized Transfusion Ratio for Dialysis Facilities (University of Michigan Kidney Epidemiology and Cost Center): Recommended

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

This outcome measure calculates a ratio of the number of eligible red blood cell transfusion events observed in patients dialyzing at a facility, to the number of eligible transfusion events that would be expected under a national norm, after accounting for the patient characteristics within each facility. The Renal Standing Committee noted that the evidence was reasonable to support the basis of the measure, and the performance gaps demonstrated in the analysis submitted were sufficient to warrant continued endorsement of this measure. The developer provided an overview of changes made to the measure specifications since the measure's previous endorsement. To address concerns about under-identification of inpatient blood transfusions using International Classification of Diseases (ICD)-10 procedure codes, the developer added revenue codes to the inpatient transfusion definition. The

NATIONAL QUALITY FORUM

NQF REVIEW DRAFT—Comments due by May 14, 2020 by 6:00 PM ET.

developer presented data demonstrating that the broader definition captures more inpatient transfusion events than were previously captured. The developer also clarified that the measure excludes Medicare Advantage patients due to incomplete claims data. Both the Committee and the developer were concerned about excluding this group of patients, as Medicare Advantage patients have been increasingly represented in the population of patients receiving dialysis. Without full claims data, the developer stated it is impossible to accurately risk-adjust the measure results or the capture of transfusion events and exclusions would be incomplete, threatening the validity of the measure. The Committee discussed the reliability and validity of the measure, and the changes to the specifications since the previous endorsement. The Committee determined their discussion warranted a Committee vote on both reliability and validity, and ultimately the Committee was satisfied that the measure met both criteria. The Committee did not express any concerns about the feasibility, use, and usability of the measure.

Measures Withdrawn from Consideration

One measure previously endorsed by NQF has not been resubmitted for maintenance of endorsement. Endorsement for this measure will be removed.

Table 3. Measures Withdrawn from Consideration

Measure	Reason for withdrawal
0251 Vascular Access—Functional Arteriovenous Fistula (AVF) or AV Graft or Evaluation for Placement	Developer is not seeking re-endorsement.

References

- 1 U.S. Renal Data System (USRDS). 2018 Annual Data Report: Epidemiology of Kidney Disease in the United States. Bethesda, MD: National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases; 2018. <http://www.usrds.org/atlas.html>. Last accessed January 2020.
- 2 CROWNWeb. CROWNWeb: History, Purpose, and Usage [video]. <http://mycrownweb.org/help/about-crownweb/>. Last accessed December 2015.

Appendix A: Details of Measure Evaluation

Rating Scale: H=High; M=Moderate; L=Low; I=Insufficient; NA=Not Applicable

Measures Recommended

2979 Standardized Transfusion Ratio for Dialysis Facilities
Submission Specifications Description: The risk adjusted facility level transfusion ratio “STrR” is specified for all adult dialysis patients. It is a ratio of the number of eligible red blood cell transfusion events observed in patients dialyzing at a facility, to the number of eligible transfusion events that would be expected under a national norm, after accounting for the patient characteristics within each facility. Eligible transfusions are those that do not have any claims pertaining to the comorbidities identified for exclusion, in the one year look back period prior to each observation window. This measure is calculated as a ratio, but can also be expressed as a rate. Numerator Statement: Number of eligible observed red blood cell transfusion events: An event is defined as the transfer of one or more units of blood or blood products into a recipient’s blood stream (code set is provided in the numerator details) among patients dialyzing at the facility during the inclusion episodes of the reporting period. Inclusion episodes are those that do not have any claims pertaining to the comorbidities identified for exclusion, in the one year look back period prior to each observation window. Denominator Statement: Number of eligible red blood cell transfusion events (as defined in the numerator statement) that would be expected among patients at a facility during the reporting period, given the patient mix at the facility. Inclusion episodes are those that do not have any claims pertaining to the comorbidities identified for exclusion, in the one year look back period prior to each observation window. Exclusions: All transfusions associated with transplant hospitalization are excluded. Patients are also excluded if they have a Medicare claim for: hemolytic and aplastic anemia, solid organ cancer (breast, prostate, lung, digestive tract and others), lymphoma, carcinoma in situ, coagulation disorders, multiple myeloma, myelodysplastic syndrome and myelofibrosis, leukemia, head and neck cancer, other cancers (connective tissue, skin, and others), metastatic cancer, and sickle cell anemia within one year of their patient time at risk. Since these comorbidities are associated with higher risk of transfusion and require different anemia management practices that the measure is not intended to address, every patient’s risk window is modified to have at least 1 year free of claims that contain these exclusion eligible diagnoses. Adjustment/Stratification: Statistical risk model N/A Level of Analysis: Facility Setting of Care: Other Type of Measure: Outcome Data Source: Claims, Registry Data Measure Steward: Centers for Medicare & Medicaid Services
STANDING COMMITTEE MEETING 01/30/2020 1. Importance to Measure and Report: <u>The measure meets the Importance criteria</u> (1a. Evidence, 1b. Performance Gap) 1a. Evidence: Pass-16; No Pass-2; 1b. Performance Gap: H-1; M-13; L-2; I-1 Rationale: - Blood transfusion may be an indicator for underutilization of treatments to increase endogenous red blood cell production (e.g., ESA, iron). - Dialysis patients who are eligible for kidney transplant and are transfused risk becoming sensitized to the donor pool, reducing the chances of transplant success. Blood transfusions carry a small risk of transmitting blood-borne infections, development of a transfusion reaction, and using infusion centers or hospitals to transfuse patients is expensive, inconvenient, and could compromise future vascular access.

2979 Standardized Transfusion Ratio for Dialysis Facilities

- Monitoring the risk-adjusted transfusion rate at the facility level, relative to a national standard, allows for detection of treatment patterns in dialysis-related anemia management. This is of particular importance due to FDA guidance regarding minimizing the use of ESAs, and economic incentives to minimize ESA use introduced by Medicare's bundling of payment for ESAs. As providers use fewer ESAs in an effort to minimize the risks associated with aggressive anemia treatment, it becomes more important to monitor for an overreliance on transfusions.
- The Committee noted that the evidence provided came from historical and observational studies, but concluded the evidence was reasonable to support the basis of the measure.
- The developer provided data from 2017 demonstrating a mean STTrR of 1.058 with a range of 0.273 (10th percentile) to 1.306 (90th percentile). Parameter estimates provided for race, sex, and ethnicity indicated relatively little variation and no disparities substantial to the measure among these groups.

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

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

2a. Reliability: **H-0; M-13; L-2; I-1**; 2b. Validity: **H-1; M-10; L-3; I-2**

Rationale:

- This measure was deemed as complex and was evaluated by the NQF Scientific Methods Panel (SMP).
- The developer provided an overview of changes made to the measure specifications since the measure's previous endorsement: The developer added revenue codes to the inpatient transfusion definition to capture more inpatient transfusion events, and the measure now excludes Medicare Advantage patients due to incomplete claims data. Without full claims data, the developer stated it is impossible to accurately risk-adjust the measure results or capture of transfusion events, and exclusions would be incomplete, threatening the validity of the measure.
- The developer tested score-level reliability at the facility level using bootstrapping to evaluate inter-unit reliability (IUR). They found IURs for the one-year STTrR have a range of 0.63-0.68 across the years 2014, 2015, 2016, and 2017. The developer interpreted these results as indicating a moderate level of reliability.
- The developer provided face validity assessment using a technical expert panel. The developer conducted score-level empirical testing using a Poisson regression model. The developer indicated significant association of the STTrR with hospitalization, mortality, and percent of patients with low hemoglobin levels.
- The Committee noted that removal of Medicare Advantage patients from the denominator resulted in more patients being excluded from the measure.
- The Committee discussed the reliability and validity of the measure, and the changes to the specifications since the previous endorsement. The Committee determined their discussion warranted a Committee vote on both reliability and validity instead of accepting the SMP voting results.

3. Feasibility: H-11; M-5; L-0; I-0

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

Rationale:

- The Committee noted that all data elements are in defined fields in a combination of electronic sources, including the CROWNWeb registry, and that the data are generated, collected, and used by healthcare personnel during provision of care.

4. Use and Usability

4a. Use; 4a1. Accountability and transparency; 4a2. Feedback on the measure by those being measured and others; 4b. Usability; 4b1. Improvement; 4b2. The benefits to patients outweigh evidence of unintended negative consequences to patients)

4a. Use: **Pass-14; No Pass-2**; 4b. Usability: **H-3; M-11; L-1; I-0**

Rationale:

2979 Standardized Transfusion Ratio for Dialysis Facilities
• This measure is publicly reported nationally on Dialysis Facility Compare (DFC) and is used in the ESRD QIP. • The developer showed modeling results that demonstrated small but significant reductions in inpatient transfusion events for the years 2016-2017 compared with 2014-2015. • During the December 2019 meeting of the Measure Applications Partnership (MAP) Hospital Workgroup, MAP considered this revised measure for inclusion in the ESRD QIP. MAP conditionally supported including the measure in ESRD QIP pending NQF endorsement of the revised measure. MAP noted that in 2021, Medicare Advantage will include dialysis that may impact the patient population captured by this measure • The developer indicated that it had not received any feedback indicating any unintended impacts on patients as a result of measure implementation.
5. Related and Competing Measures • No related or competing measures noted.
6. Standing Committee Recommendation for Endorsement: Y-14; N-1
7. Public and Member Comment
8. Consensus Standards Approval Committee (CSAC) Vote: Y-X; N-X
9. Appeals

Appendix B: Renal Portfolio—Use in Federal Programs^a

NQF #	Title	Federal Programs
0255	Measurement of Phosphorus Concentration	End-Stage Renal Disease Quality Incentive Program
0256	Hemodialysis Vascular Access- Minimizing use of catheters as Chronic Dialysis Access	End-Stage Renal Disease Quality Incentive Program
0257	Hemodialysis Vascular Access- Maximizing Placement of Arterial Venous Fistula (AVF)	End-Stage Renal Disease Quality Incentive Program
0318	Peritoneal Dialysis Adequacy Clinical Performance Measure III - Delivered Dose of Peritoneal Dialysis Above Minimum	End-Stage Renal Disease Quality Incentive Program
0369	Dialysis Facility Risk-adjusted Standardized Mortality Ratio	End-Stage Renal Disease Quality Incentive Program
1423	Minimum spKt/V for Pediatric Hemodialysis Patients	End-Stage Renal Disease Quality Incentive Program
1454	Proportion of patients with hypercalcemia	End-Stage Renal Disease Quality Incentive Program
1463	Standardized Hospitalization Ratio for Admissions	End-Stage Renal Disease Quality Incentive Program
1667	Pediatric Kidney Disease: ESRD Patients Receiving Dialysis: Hemoglobin Level < 10g/dL	Merit-Based Incentive Payment System (MIPS)
2977	Hemodialysis Vascular Access: Standardized Fistula Rate	End-Stage Renal Disease Quality Incentive Program
2978	Hemodialysis Vascular Access: Long-term Catheter Rate	End-Stage Renal Disease Quality Incentive Program
2979	Standardized Transfusion Ratio for Dialysis Facilities	End-Stage Renal Disease Quality Incentive Program
2988	Medication Reconciliation for Patients Receiving Care at Dialysis Facilities	End-Stage Renal Disease Quality Incentive Program

^a Per CMS Measures Inventory Tool as of 01/31/2020

Appendix C: Renal Standing Committee and NQF Staff

STANDING COMMITTEE

Constance Anderson, BSN, MBA (Co-Chair)

Vice President of Clinical Operations, Northwest Kidney Centers
Seattle, Washington

Lorien Dalrymple, MD, MPH (Co-Chair)

Associate Professor, University of California Davis
Sacramento, California

Ishir Bhan, MD, MPH

Director of Nephrology Informatics, Partners Healthcare, Massachusetts General Hospital
Boston, Massachusetts

Rajesh Davda, MD, MBA, CPE

National Medical Director, Senior Medical Director, Network Performance Evaluation and Improvement,
Cigna Healthcare
Washington, District of Columbia

Elizabeth Evans, DNP

Nurse Practitioner, American Nurses Association
Albuquerque, New Mexico

Michael Fischer, MD, MSPH

Staff Physician, Associate Professor of Medicine, Department of Veterans Affairs
Chicago, Illinois

Renee Garrick, MD, FACP

Professor of Clinical Medicine, Vice Dean, and Renal Section Chief, Renal Physicians Association/
Westchester Medical Center, New York Medical College
Hawthorne, New York

Stuart Greenstein, MD

Professor of Surgery, Montefiore Medical Center
Bronx, New York

Mike Guffey

Business Continuity Manager, UMB Bank (Board of Directors Treasurer, Dialysis Patient Citizens)
Washington, District of Columbia

Debra Hain, PhD, APRN, ANP-BC, GNP-BC, FAANP

Associate Professor, Adult Nurse Practitioner, American Nephrology Nurses' Association
Boca Raton, Florida

NATIONAL QUALITY FORUM

NQF REVIEW DRAFT—Comments due by May 14, 2020 by 6:00 PM ET.

Lori Hartwell

President/Founder, Renal Support Network
Glendale, California

Frederick Kaskel, MD, PhD

Chief of Pediatric Nephrology, Vice Chair of Pediatrics, Children's Hospital at Montefiore
Bronx, New York

Myra Kleinpeter, MD, MPH

Associate Professor of Clinical Medicine, Tulane University School of Medicine
New Orleans, Louisiana

Alan Kliger, MD

Clinical Professor of Medicine, Yale University School of Medicine Senior Vice President Medical Affairs,
Chief Quality Officer, Yale New Haven Health System
New Haven, Connecticut

Mahesh Krishnan, MD, MPH, MBA

FASN Vice President of Clinical Innovation and Public Policy, DaVita Healthcare Partners, Inc.
McLean, Virginia

Lisa Latts, MD, MSPH, MBA

FACP Principal, LML Health Solutions and CMO, University of CA Health Plan
Denver, Colorado

Karilynne Lenning, MHA, LBSW

Sr. Quality Improvement Facilitator, Telligen
West Des Moines, Iowa

Franklin Maddux, MD

FACP Executive Vice President for Clinical & Scientific Affairs, Chief Medical Officer, Fresenius Medical
Care North America
Waltham, Massachusetts

Andrew Narva, MD, FACP

FASN Director, National Kidney Disease Education Program, National Institute of Diabetes and Digestive
Kidney Diseases –National Institutes of Health
Bethesda, Maryland

Jessie Pavlinac, MS, RD, CSR

LD Director, Clinical Nutrition, Food & Nutrition Services, Oregon Health & Science University
Portland, Oregon

Mark Rutkowski, MD

Physician Lead for Renal Clinical Practice and Quality, Southern California Permanente Medical Group
Baldwin Park, California

Michael Somers, MD

Associate Professor in Pediatrics/Director, Renal Dialysis Unit, Associate Chief Division of Nephrology,

NATIONAL QUALITY FORUM

NQF REVIEW DRAFT—Comments due by May 14, 2020 by 6:00 PM ET.

American Society of Pediatric Nephrology/Harvard Medical School/Boston Children's Hospital
Boston, Massachusetts

Bobbi Wager, MSN, RN

Renal Care Coordinator, American Association of Kidney Patients
Boerne, Texas

John Wagner, MD, MBA

Director of Service, Associate Medical Director, Kings County Hospital Center
Brooklyn, New York

Joshua Zaritsky, MD, PhD

Chief of Pediatric Nephrology, Nemours/A.I. duPont Hospital for Children
Wilmington, Delaware

NQF STAFF

Kathleen Giblin, RN

Acting Senior Vice President, Quality Measurement

Apryl Clark, MHSA

Acting Vice President, Quality Measurement

Samuel Stolpe, PharmD

Senior Director

Amy Moyer, MS, PMP

Director

Janaki Panchal, MPH

Project Manager

Tejaswini Vemuganti, MPH

Project Analyst

Appendix D: Measure Specifications

	NQF 2979 Standardized Transfusion Ratio for Dialysis Facilities
Steward	Centers for Medicare & Medicaid Services
Description	The risk-adjusted facility level transfusion ratio “STrR” is specified for all adult dialysis patients. It is a ratio of the number of eligible red blood cell transfusion events observed in patients dialyzing at a facility, to the number of eligible transfusion events that would be expected under a national norm, after accounting for the patient characteristics within each facility. Eligible transfusions are those that do not have any claims pertaining to the comorbidities identified for exclusion, in the one-year look-back period prior to each observation window. This measure is calculated as a ratio, but can also be expressed as a rate.
Type	Outcome
Data Source	Claims, Registry Data Data are derived from an extensive national ESRD patient database, which is primarily based on the CMS Consolidated Renal Operations in a Web-enabled Network (CROWN) system. The CROWN data include the Renal Management Information System (REMIS), CROWNWeb facility-reported clinical and administrative data (including CMS-2728 Medical Evidence Form, CMS-2746 Death Notification Form, and CMS-2744 Annual Facility Survey Form data), the historical Standard Information Management System (SIMS) database (formerly maintained by the 18 ESRD Networks until replaced by CROWNWeb in May 2012), the National Vascular Access Improvement Initiative’s Fistula First Catheter Last project (in CROWNWeb since May 2012), Medicare dialysis and hospital payment records, transplant data from the Organ Procurement and Transplant Network (OPTN), the Nursing Home Minimum Dataset, the Quality Improvement Evaluation System (QIES) Workbench, which includes data from the Certification and Survey Provider Enhanced Report System (CASPER), the Dialysis Facility Compare (DFC) and the Social Security Death Master File. The database is comprehensive for Medicare patients. Non-Medicare patients are included in all sources except for the Medicare payment records. CROWNWeb provides tracking by dialysis provider and treatment modality for non-Medicare patients. Information on hospitalizations is obtained from Part A Medicare Inpatient Claims Standard Analysis Files (SAFs), and past-year comorbidity is obtained from multiple Part A types (inpatient, home health, hospice, skilled nursing facility claims) and Part B outpatient types of Medicare Claims SAFs. Information on transfusions is obtained from Medicare Inpatient and Outpatient Claims Standard Analysis Files (SAFs).
Level	Facility
Setting	Other Dialysis Facility
Numerator Statement	Number of eligible observed red blood cell transfusion events: An event is defined as the transfer of one or more units of blood or blood products into a recipient’s blood stream (code set is provided in the numerator details) among patients dialyzing at the facility during the inclusion episodes of the reporting period. Inclusion episodes are those that do not have any claims pertaining to the comorbidities identified for exclusion, in the one-year look-back period prior to each observation window.
Numerator Details	Transfusion events in the inpatient setting are counted in the following way. The event is identified by presence in a Medicare inpatient claim of the appropriate ICD procedure codes (99.03, 99.04, 30230H1, 30233H1, 30240H1, 30243H1, 30250H1, 30253H1, 30260H1, 30263H1, 30230N1, 30230P1, 30233N1, 30233P1, 30240N1, 30240P1, 30243N1, 30243P1, 30250N1, 30250P1, 30253N1, 30253P1, 30260N1, 30260P1, 30263N1, 30263P1), or revenue center codes (0380, 0381, 0382, 0389, 0390, 0391, 0392, 0399) or value code (37). We only count a single transfusion event for an inpatient claim regardless of the number of transfusion revenue center, procedure and value codes reported so that the number of discrete events counted is the same whether the claim indicates 1 unit of blood or multiple

	NQF 2979 Standardized Transfusion Ratio for Dialysis Facilities
	units of blood. This results in a more conservative estimate of blood transfusions from inpatient claims. Transfusion events are less common in the outpatient setting. Transfusion events in the outpatient setting are counted in the following way. Events derived from outpatient claims are identified by claims with HCPCS code (P9010, P9011, P9016, P9021, P9022, P9038, P9039, P9040, P9051, P9054, P9056, P9058, 36430) with revenue center codes in (0380, 0381, 0382, 0389, 0390, 0391, 0392, 0399) or value code (37). One or more transfusion-related HCPCS codes with at least one transfusion-related revenue center codes, or one or more transfusion-related value codes listed on an outpatient claim are counted as a single transfusion event regardless of the number of units of blood recorded. In other words, 3 units of blood would be counted as a single transfusion event. If there are more than one transfusion events identified from inpatient or outpatient claims in the same day, we only count one transfusion event per day. The detailed procedures to determine unique transfusion events at the claim level are presented in a flow chart in the Appendix (S.19. Calculation Algorithm/Measure Logic Diagram).
Denominator Statement	Number of eligible red blood cell transfusion events (as defined in the numerator statement) that would be expected among patients at a facility during the reporting period, given the patient mix at the facility. Inclusion episodes are those that do not have any claims pertaining to the comorbidities identified for exclusion, in the one-year look-back period prior to each observation window.
Denominator Details	Starting with day 91 after onset of ESRD, a patient is attributed to a facility once the patient has been treated there for the past 60 days and for the following 60 days after transfer to another dialysis facility. Based on a risk adjustment model for overall national transfusion rates, we compute the expected number of red blood cell transfusion events for each patient attributed to a given facility. The sum of all such expectations over patients in a facility yields the overall expected number of transfusions for the facility given its specific patient mix. This forms the denominator of the measure. This measure is based on Medicare administrative claims and databases and is applied to patients covered by Medicare.
Exclusions	All transfusions associated with transplant hospitalization are excluded. Patients are also excluded if they have a Medicare claim for: hemolytic and aplastic anemia, solid organ cancer (breast, prostate, lung, digestive tract and others), lymphoma, carcinoma in situ, coagulation disorders, multiple myeloma, myelodysplastic syndrome and myelofibrosis, leukemia, head and neck cancer, other cancers (connective tissue, skin, and others), metastatic cancer, and sickle cell anemia within one year of their patient time at risk. Since these comorbidities are associated with higher risk of transfusion and require different anemia management practices that the measure is not intended to address, every patient's risk window is modified to have at least one year free of claims that contain these exclusion eligible diagnoses.
Exclusion details	We performed multivariate logistic regression demonstrating that a one-year look-back period for the exclusion comorbidities was more predictive of transfusion events compared to longer look back periods. The figure in the appendix describes the inclusion and exclusion period of a hypothetical patient. In the figure included in the exclusion section of the testing form (Sec. 2b2.1), a hypothetical patient has patient-years at risk at a facility from 1/1/2008 to 12/31/2011. Review of Medicare claims identified presence of one or more exclusion comorbidities in 2007 (Claim1), 2008 (Claim2) and 2010 (Claim3). Each claim is followed by a one year exclusion period. The revised inclusion periods are defined as risk windows with at least a 1-year claim-free period (Inclusion1 and Inclusion2 in the figure). This patient has two transfusion events, marked as T1 and T2 in late 2008 and late 2011 respectively. However, since T1 falls in the exclusion period, it will not be counted toward the facility's total transfusion event count because the presence of the exclusion comorbidity claims

	NQF 2979 Standardized Transfusion Ratio for Dialysis Facilities
	within the one-year look-back might have increased the risk of transfusion unrelated to dialysis facility anemia management practices. However, T2, which occurs in late 2011 and in Inclusion2 period, will be counted since there is greater than a one-year gap between this transfusion event and the last claim observed with the exclusion diagnosis.
Risk Adjustment	Statistical risk model
Stratification	N/A
Type Score	Ratio better quality = lower score
Algorithm	The numerator is the observed number of transfusion events for a facility and the denominator for the same facility is the expected number of transfusion events adjusted for patient mix. The measure for a given facility is calculated by dividing the numerator by the denominator. See flowchart for further detail (available in attached appendix).
Copyright / Disclaimer	N/A

Appendix E: Related and Competing Measures

No related or competing measures.

Appendix F: Pre-Evaluation Comments

No comments received as of January 29, 2020.

National Quality Forum
1099 14th Street NW, Suite 500
Washington, DC 20005
<http://www.qualityforum.org>

ISBN [Assigned by Communications]
©2019 National Quality Forum