MEASURE INFORMATION FORM

Project Title:
End-Stage Renal Disease Vascular Access Measure Development

Project Overview:
The Centers for Medicare & Medicaid Services (CMS) has contracted with the University of Michigan Kidney Epidemiology and Cost Center (UM-KECC) to review the NQF endorsed Vascular Access measures (Minimizing Use of Catheters as Chronic Dialysis Access (#0256), and Maximizing Placement of Arterial Venous Fistula (#0257)) and consider possible revisions to the existing measures, including potential risk adjustment. The contract name is ESRD Quality Measure Development, Maintenance, and Support. The contract number is HHSM-500-2013-13017I.

Date:
Information included is current on April 15, 2016

Measure Name:
Hemodialysis Vascular Access: Standardized Fistula Rate

Descriptive Information:

Measure Name (Measure Title De.2.)
Hemodialysis Vascular Access: Standardized Fistula Rate

Measure Type De.1.
Intermediate Clinical Outcome

Brief Description of Measure De.3.
Adjusted percentage of adult hemodialysis patient-months using an autogenous arteriovenous fistula (AVF) as the sole means of vascular access.

If Paired or Grouped De.4.
The numerator is the adjusted count of adult patient-months using an AVF as the sole means of vascular access as of the last hemodialysis treatment session of the month.

Subject/Topic Areas De.5.
Renal, Renal: End Stage Renal Disease (ESRD)

Crosscutting Areas De 6.
N/A

Measure Specifications:

Measure-specific Web Page S.1.
N/A

If This Is an eMeasure S.2a.
This is not an eMeasure

Data Dictionary, Code Table, or Value Sets S.2b.
See Data Dictionary/Code Table

For Endorsement Maintenance S.3.
N/A

Numerator Statement S.4.
The numerator is the adjusted count of adult patient-months using an AVF as the sole means of vascular access as of the last hemodialysis treatment session of the month.

Time Period for Data S.5.
12 months

Numerator Details S.6.
The number of patient-months using an AVF as the sole means of vascular access at a given facility, adjusted for patient-mix.

An AVF is considered in use if the CROWNWeb "Access Type IDs" of 14 or 22 has been recorded for a given month, where "14" represents AV fistula only (with 2 needles) and "22" represents AV fistula only with an approved single needle device.

Denominator Statement S.7.
All patients at least 18 years old as of the first day of the reporting month who are determined to be maintenance hemodialysis patients (in-center and home HD) for the entire reporting month at the same facility.

Target Population Category S.8.
Populations at Risk

Denominator Details S.9.
For each patient, we identify the dialysis provider at each month using a combination of Medicare-paid dialysis claims, the Medical Evidence Form (Form CMS-2728), and data from CROWNWeb. These sources are used to identify patients that are on in-center or home hemodialysis for the entire reporting month. Patients are required to have been treated by the same facility for the complete month in order to be assigned to that facility for the reporting month.

To be included in the denominator for a particular reporting month, the patient must be receiving home or in-center hemodialysis for the complete reporting month at the facility, and be at least 18 years old as of the first day of the month.

The monthly patient count at a facility includes all eligible prevalent and incident patients. The number of patient-months over a time period is the sum of patients reported for the months covered by the time period. An individual patient may contribute up to 12 patient-months per year.

Denominator Exclusions (NQF Includes "Exceptions" in the "Exclusion" Field) S.10.
Exclusions that are implicit in the denominator definition include:

- Pediatric patients (<18 years old)
- Patients on Peritoneal Dialysis
- Patient-months with in-center or home hemodialysis for less than a complete reporting month at the same facility

In addition, the following exclusions are applied to the denominator:

Patients with a catheter that have limited life expectancy:

- Patients under hospice care in the current reporting month
- Patients with metastatic cancer in the past 12 months
- Patients with end stage liver disease in the past 12 months
- Patients with coma or anoxic brain injury in the past 12 months

Denominator Exclusion Details (NQF Includes "Exceptions" in the "Exclusion" Field) S.11.
Determination of peritoneal dialysis treatment modality is derived from a combination of Medicare-paid dialysis claims, the Medical Evidence Form (Form CMS-2728), and data from CROWNWeb. These sources also determine patient assignment to the facility. Patients not treated by the facility for the entire month are excluded for that reporting month.

The patient's age is determined by subtracting the patient's date of birth from the first day of the reporting month. Patients that are <18 years old as of the first day of the reporting month are excluded.

For the exclusion of catheter patients with limited life expectancy, catheter use in the reporting month is defined as the CROWNWeb "Access Type ID" having any of the following values: (16,18,19,20,21,"·"), where Access_Type_ID "16" represents AV Fistula combined with a Catheter, "18" represents AV Graft combined with a Catheter, "19" represents Catheter only, "20" represents Port access only, "21" represents other/unknown, and "·" represents missing.

Hospice status is determined from a separate CMS file that contains final action claims submitted by Hospice providers. Once a beneficiary elects Hospice, all Hospice related claims will be found in this file, regardless if the beneficiary is in Medicare fee-for-service or in a Medicare managed care plan. Patients are identified as receiving hospice care if they have any final action claims submitted to Medicare by hospice providers in the current month.

Diagnoses of metastatic cancer, end stage liver disease, or coma in the past 12 months were determined from Medicare claims. Medicare claim types include inpatient admissions, outpatient claims (including dialysis claims) and physician services. Claims from providers, such as laboratories that report diagnosis codes when testing for the presence of a condition are excluded. A detailed list of ICD-9/ICD-10 diagnostic codes used to identify these comorbidities is included in the attached data dictionary code table (excel file).

Stratification Details/Variables S.12.
N/A

Risk Adjustment Type S.13.
Statistical risk model

Statistical Risk Model and Variables S.14.
The proposed SFR measure is a directly standardized percentage, in that each facility's percentage of AVF use is adjusted to the national distribution of covariates (risk factors) (with 'national' here referring to all-facilities-combined). The SFR for facility i is an estimate of what the facility's percentage of AVF would equal if the facility's patient mix was equal to that of the nation as a whole. The measure is adjusted for patient demographic and clinical characteristics based on a logistic regression model. This model includes the facility indicators and assumes that the regression coefficients of risk factors are the same across all facilities. The common risk effects are assumed in order to improve computational stability in estimating facility-specific effects.

The patient characteristics included in the logistic regression model as covariates are:

- Age
- BMI at incidence
- Nursing home status in previous year
- Nephrologist's care prior to ESRD
- Duration of ESRD
- Inability to ambulate/transfer at ESRD incidence (CMS-2728 form)
- Comorbidities either at ESRD incidence (CMS-2728 form) or prevalent comorbidities based on Medicare claims filed in prior 12 months
    - Diabetes
    - Heart diseases
    - Peripheral vascular disease
    - Cerebrovascular disease
    - Chronic obstructive pulmonary disease
    - Anemia (unrelated to ESRD/CKD)
    - Non-Vascular Access-Related Infections
    - Drug dependence
- Indicator for Medicare coverage for at least 6 months during the past 12 months

Detailed Risk Model Specifications S.15.
See Data Dictionary/Code Table

Type of Score S.16.
Rate/proportion

Interpretation of Score S.17.
Better quality = Higher score

Calculation Algorithm/Measure Logic S.18.
See calculation flowchart in Appendix

Calculation Algorithm/Measure Logic Diagram URL or Attachment S.19.
See calculation flowchart in Appendix

Sampling S.20.
N/A

Survey/Patient-Reported Data S.21.
N/A

Missing Data S.22.
Patients with a missing vascular access type are counted in the denominator, but not the numerator. For comorbidities, if the patient had missing comorbidity values both in the preceding 12 months of Medicare claims and in the Medical Evidence Form for the corresponding comorbidity, we assume this patient did not have the comorbidity in that reporting month. The same methodology is applied to the comorbidity exclusions and the hospice exclusion.

Data Source S.23.
Administrative claims, Electronic Clinical Data

Data Source or Collection Instrument S.24.
CROWNWeb, Medicare Claims and the CMS Medical Evidence form 2728 are used as the data sources for establishing the denominator. CROWNWeb is the data source for establishing the numerator. Medicare claims and the CMS Medical Evidence form 2728 are data sources for the risk adjustment factors. Medicare claims and CROWNWeb are used for the exclusion criteria.

Data Source or Collection Instrument (Reference) S.25.
No data collection instrument provided

Level of Analysis S.26.
Facility

Care Setting S.27.
Dialysis Facility

Composite Performance Measure S.28.
N/A