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 December 21, 2015.

Measure Name

Descriptive Information

Measure Name (Measure Title De.2.)

Hemodialysis Vascular Access: Long-term Catheter Rate

Measure Type De.1.

Intermediate Outcome

Brief Description of Measure De.3.

Percentage of adult hemodialysis patient-months using a catheter continuously for 90 days or longer for vascular access.

If Paired or Grouped De.4.

This measure is paired with Hemodialysis Vascular Access- Standardized Fistula Rate. These two vascular access quality measures, when used together, consider Arterial Venous (AV) fistula use as a positive outcome and prolonged use of a tunneled catheter as a negative outcome. With the growing recognition that some patients have exhausted options for an arteriovenous fistula, or have comorbidities that may limit the success of AVF creation, pairing the measures accounts for all three vascular access options. The fistula measure adjusts for patient factors where fistula placement may be either more difficult or not appropriate and acknowledges that in certain circumstances an AV graft may be the best access option. This paired incentive structure that relies on both measures reflects consensus best practice, and supports maintenance of the gains in vascular access success achieved via the Fistula First/Catheter Last Project over the last decade.

Subject/Topic Areas De.5.

Renal: Renal
Renal: End State Renal Disease

Crosscutting Areas De 6.

N/A

Measure Specifications

Measure-specific Web Page S.1.

TBD

If This Is an eMeasure S.2a.

N/A

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

See Appendix A.

For Endorsement Maintenance S.3.

N/A

Numerator Statement S.4.

The numerator is the number of adult patient-months in the denominator who were on maintenance hemodialysis using a catheter continuously for 90 days or longer as of the last hemodialysis session of the month.

Time Period for Data S.5.

12 months

Numerator Details S.6.

The number of patient months using a catheter continuously for ≥90 days where 90 days is defined as being from the date of first dialysis at the facility. Use of a catheter "continuously" is defined as a patient with one or more dialysis catheters for ≥ 90 days.

A patient is counted in the numerator if the CROWNWeb "Access Type ID" (16,18,19,20,21,"·") has been recorded each month for ≥ 90 days from "Access Type Change Date" to the last hemodialysis session of the month. 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. If a patient changes dialysis facilities, the patient is not counted in the numerator of the new facility until the CROWNWeb "Access Type ID" (16,18,19,20,21,"·") has been recorded each month for ≥ 90 days at the new facility.

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).

Target Population Category S.8.

Populations at risk: Populations at risk

Denominator Details S.9.

To be included in the denominator for a particular reporting month the patient must be on home or in-center hemodialysis, and be ≥18 years old as of the first day of the month. If a patient changes dialysis facilities mid-month, they are counted as a patient of both facilities in which they received hemodialysis during the reporting month.

The monthly hemodialysis patient count at a facility includes all patients (home and in-center) who receive hemodialysis as of the last day of that calendar month. Incident patients (those who

received ESRD treatment for the first time ever) are included in this count. 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

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

Patients with Limited life expectancy (e.g. < 6 months):

- 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.

The patient's age will be determined by subtracting the patient's date of birth from the first day of the reporting month. The patient has to be >=18 years old as of the first day of the reporting month to be included in the measure.

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 claim types. Medicare claims include inpatient hospitalizations, 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 and HCPCS CPT codes used to identify these comorbidities is included in Table 3 of the attached document.

Stratification Details/Variables S.12.

N/A

Risk Adjustment Type S.13.

No risk adjustment or risk stratification

Statistical Risk Model and Variables S.14.
N/A

Detailed Risk Model Specifications S.15.
N/A

Type of Score S.16.
Rate/proportion.

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

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

Calculation Algorithm/Measure Logic Diagram URL or Attachment S.19.
See Appendix B.

Sampling S.20.
N/A

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

Missing Data S.22.

We count patients with missing vascular access type in both the denominator and the numerator. Therefore missing vascular access type is counted as a catheter. For comorbidities used to determine the exclusions, if the patient had missing comorbidity values in the preceding 12 months of Medicare claims, we assume this patient did not have the comorbidity in that reporting month. The same methodology is applied to the hospice exclusion.

Data Source S.23.
Administrative Claims

Electronic Clinical Data: Electronic Clinical Data

Data Source or Collection Instrument S.24.
CROWNWeb is used as the data source for establishing the numerator and denominator. Medicare claims are used for the exclusion criteria.

Data Source or Collection Instrument (Reference) S.25.
N/A

Level of Analysis S.26.
Facility

Care Setting S.27.
Dialysis Facility

Composite Performance Measure S.28.
N/A

Appendix A

Data Dictionary (S.2b.)

Variable	Primary Data Source
Facility CCN #	CMS data sources [*1]
Reporting year and month	CROWNWeb
Vascular Access Type	CROWNWeb
Date of Birth	CMS data sources [*1]
Date of First ESRD	Medical Evidence Form (CMS-2728)
Age at the first day of reporting month	CMS data sources [*1]
No Medicare Claims filed in past 12 months	Medicare Claims [*3]
Hospice_status in the current month [*4]	CMS Hospice file [*2]
Metastatic Cancer reported on Medicare Claims in past 12 month [*4]	Medicare Claims [*3]
End-Stage Liver Disease reported on Medicare Claims in past 12 month [*4]	Medicare Claims [*3]
Coma or Anoxic Brain Damage reported on Medicare Claims in past 12 month [*4]	Medicare Claims [*3]

*1. Multiple data sources include CMS Consolidated Renal Operations in a Web-enabled Network (CROWNWeb), the CMS Annual Facility Survey (Form CMS-2744), Medicare dialysis and hospital payment records, the CMS Medical Evidence Form (Form CMS-2728), transplant data from the Organ Procurement and Transplant Network (OPTN), the Death Notification Form (Form CMS-2746), 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.
Unique patients are identified byusing a combination of SSN, first name, surname, gender, Medicare claim number and birth date. A matching process is performed to ensure that minor typos and misspellings do not cause a patient record to fall out of their history. The matching process is able to successfully match 99.5% of patients. The remaining patients have incomplete or incorrect data that does not allow them to be matched.

*2. Hospice information comes from CMS hospice 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.

*3. Medicare claims include Part A claims such as inpatient admissions and Part B claims such as 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.

*4. Exclusion factors: A detailed list of ICD-9 diagnostic codes and HCPCS CPT codes used to identify comorbidities is included in Table 3 of the attached document. Comorbidities were identified by combining prevalent comorbidities reported on all Medicare Claims in past 12 month and incident comorbidities reported on the Medical Evidence Form (CMS-2728)) (Comorbidities listed in Table 2 of the attached file). A detailed list of ICD-9 diagnostic codes and HCPCS CPT codes used to identify comorbidities from Medicare Claims is included in Table1 of the attached document.

Exclusion codes (S. 11)

Note: ICD-9 to ICD-10 crosswalk is pending clinician review.

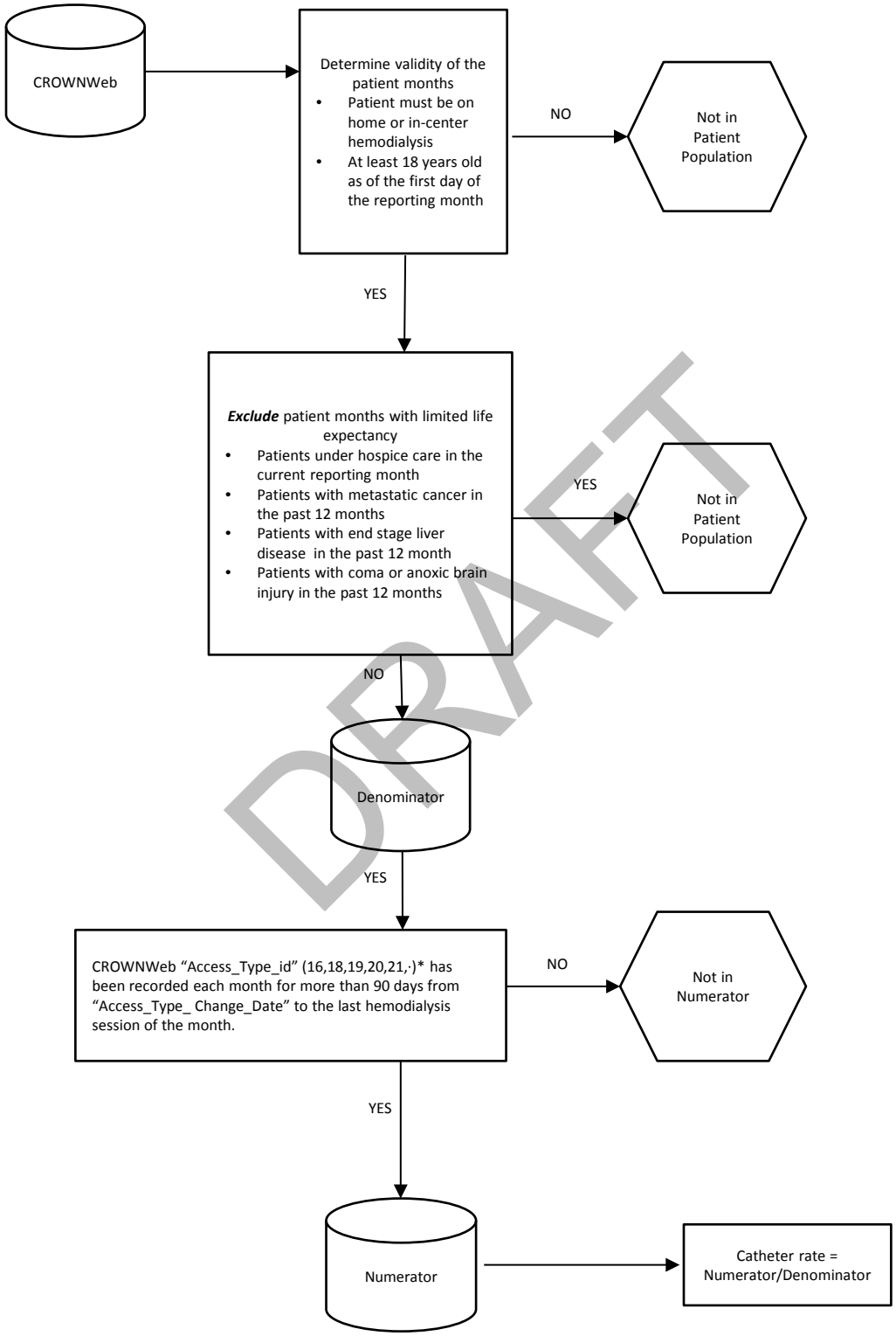
ICD-9 Code	Description
1960	Secondary and unspecified malignant neoplasm of lymph nodes of head, face, and neck
1961	Secondary and unspecified malignant neoplasm of intrathoracic lymph nodes
1962	Secondary and unspecified malignant neoplasm of intra-abdominal lymph nodes
1965	Secondary and unspecified malignant neoplasm of lymph nodes of inguinal region and lower limb
1966	Secondary and unspecified malignant neoplasm of intrapelvic lymph nodes
1968	Secondary and unspecified malignant neoplasm of lymph nodes of multiple sites
1970	Secondary malignant neoplasm of lung
1971	Secondary malignant neoplasm of mediastinum
1972	Secondary malignant neoplasm of pleura
1973	Secondary malignant neoplasm of other respiratory organs
1974	Secondary malignant neoplasm of small intestine including duodenum
1975	Secondary malignant neoplasm of large intestine and rectum
1976	Secondary malignant neoplasm of retroperitoneum and peritoneum
1977	Malignant neoplasm of liver, secondary
1978	Secondary malignant neoplasm of other digestive organs and spleen
1978	Secondary malignant neoplasm of other digestive organs and spleen
1980	Secondary malignant neoplasm of kidney
1981	Secondary malignant neoplasm of other urinary organs
1981	Secondary malignant neoplasm of other urinary organs
1983	Secondary malignant neoplasm of brain and spinal cord

ICD-9 Code	Description
1984	Secondary malignant neoplasm of other parts of nervous system
1984	Secondary malignant neoplasm of other parts of nervous system
1985	Secondary malignant neoplasm of bone and bone marrow
1985	Secondary malignant neoplasm of bone and bone marrow
1986	Secondary malignant neoplasm of ovary
1987	Secondary malignant neoplasm of adrenal gland
19889	Secondary malignant neoplasm of other specified sites
1990	Disseminated malignant neoplasm without specification of site
20400	Acute lymphoid leukemia, without mention of having achieved remission
20401	Acute lymphoid leukemia, in remission
20402	Acute lymphoid leukemia, in relapse
20500	Acute myeloid leukemia, without mention of having achieved remission
20500	Acute myeloid leukemia, without mention of having achieved remission
20500	Acute myeloid leukemia, without mention of having achieved remission
20501	Acute myeloid leukemia, in remission
20501	Acute myeloid leukemia, in remission
20501	Acute myeloid leukemia, in remission
20502	Acute myeloid leukemia, in relapse
20502	Acute myeloid leukemia, in relapse
20502	Acute myeloid leukemia, in relapse
20600	Acute monocytic leukemia, without mention of having achieved remission
20601	Acute monocytic leukemia,in remission
20602	Acute monocytic leukemia, in relapse
20700	Acute erythremia and erythroleukemia, without mention of having achieved remission
20701	Acute erythremia and erythroleukemia, in remission

ICD-9 Code	Description
20702	Acute erythremia and erythroleukemia, in relapse
20800	Acute leukemia of unspecified cell type, without mention of having achieved remission
20801	Acute leukemia of unspecified cell type, in remission
20802	Acute leukemia of unspecified cell type, in relapse
20970	Secondary neuroendocrine tumor, unspecified site
20971	Secondary neuroendocrine tumor of distant lymph nodes
20972	Secondary neuroendocrine tumor of liver
20973	Secondary neuroendocrine tumor of bone
20974	Secondary neuroendocrine tumor of peritoneum
20975	Secondary Merkel cell carcinoma
20979	Secondary neuroendocrine tumor of other sites
20979	Secondary neuroendocrine tumor of other sites
3481	Anoxic brain damage
3481	Anoxic brain damage
3484	Compression of brain
3485	Cerebral edema
4560	Esophageal varices with bleeding
4561	Esophageal varices without mention of bleeding
45620	Esophageal varices in diseases classified elsewhere, with bleeding
45621	Esophageal varices in diseases classified elsewhere, without mention of bleeding
5722	Hepatic encephalopathy
5722	Hepatic encephalopathy
5723	Portal hypertension
5724	Hepatorenal syndrome
5728	Other sequelae of chronic liver disease
5728	Other sequelae of chronic liver disease
5735	Hepatopulmonary synd
78001	Coma
78003	Persistent vegetative state

S.19: Calculation Flow Chart

Hemodialysis Vascular Access: Long-term Catheter Rate



*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.