Continuity of Primary Care for Children with Medical Complexity

Description

The measure uses administrative claims data from a health plan (commercial or Medicaid) to calculate the percentage of enrolled children with medical complexity (CMC) with at least four acute and/or preventive primary care visits in the past 12 months who have a Bice-Boxerman continuity of care (COC) index ≥0.50.

Administrative Specification

Denominator	Child enrollees in a health plan age ≥1 year old and ≤17 years old who are classified by the Pediatric Medical Complexity Algorithm – Version 2 (PMCA-V2) as having a complex chronic condition and who had at least four primary care visits (acute and/or preventive) during the 12-month measurement period.
Numerator	Number of eligible child enrollees in a health plan (as described in the denominator) who have a Bice-Boxerman COC index ≥0.5 in the primary care setting during the measurement year.

Definitions

Primary care visit	Any acute or preventive visit with a primary care clinician.
Primary care clinician	A physician, physician assistant, or nurse practitioner
Measurement year	12-month period between January 1 and December 31 of the calendar year of interest

Bice-Boxerman Continuity of Care (COC) index

Patient-level claims-based measure of continuity of primary care; see SAS programming code for calculation of Bice-Boxerman COC index. The SAS program to calculate the Bice-Boxerman COC index is available at: http://www.seattlechildrens.org/research/child-health-behavior-and-development/mangione-smith-lab/measurement-tools/

The Bice-Boxerman COC index is scored on a scale from a minimum of 0 to a maximum of 1, with higher scores indicating greater continuity.

The Bice-Boxerman COC index is calculated as follows:

$$COC = \frac{\sum_{j=1}^{s} n_j^2 - n}{n(n\text{-}1)}$$

Where n= total number of visits to a primary care provider
n_j= number of visits to provider j
s=number of providers

A minimum of four primary care visits is required to calculate the Bice-Boxerman COC index. Research has shown that the stability of the index increases as the number of visits increases. A minimum of four visits is required in order to prevent significant changes in the Bice-Boxerman COC index estimate as a result of minor variations in care dispersion.[1]

Pediatric Medical Complexity Algorithm Version 2 (PMCA-V2)

The Pediatric Medical Complexity Algorithm Version 2 (PMCA-V2) classifies children into one of three categories: (1) having a complex chronic condition; (2) having a non-complex chronic conditions; or (3) having no chronic condition (healthy). Categorization is based on up to three years of retrospective International Classification of Diseases 9th Revision Clinical Modification (ICD-9) codes available from administrative claims data. The PMCA-V2 SAS program is available at: http://www.seattlechildrens.org/research/child-health-behavior-and-development/mangione-smith-lab/measurement-tools/

PMCA-V2 works optimally when three years (including the measurement year) of retrospective claims data are available; however, the algorithm can be applied to only one or two years of retrospective claims data when a child has been enrolled in the health plan for < 3 years.

The ICD-9/ICD-10 combined PMCA SAS programming will be available at the website above in March of 2017.

Procedure to identify the denominator population

Eligible population

Children with medical complexity

The eligible population is children who are determined to be in the complex chronic condition category based on PMCA-V2

Age

Children ≥1 year old and ≤17 years old as of the last day (December 31) of the

measurement year

Continuous enrollment

12 months of continuous enrollment between January 1 and December 31 of the measurement year.

Allowable gap in coverage

30 days

Calculation

Follow the steps below to identify the eligible population:

Step 1 **Identify child enrollees ≥1 and ≤17 years old at the end of the measurement year (December 31)**

Step 2 **Retain those who were continuously enrolled for the 12 months of the measurement year with no more than a 30-day gap in enrollment.**

Step 3 **Run the PMCA-V2 algorithm and retain those who are classified as having complex chronic disease.** See PMCA–V2 SAS Program at http://www.seattlechildrens.org/research/child-health-behavior-and-development/mangione-smith-lab/measurement-tools/

Step 4 **Retain those with ≥4 primary care visits during the measurement year.** Define primary care visits as follows:

a. Use CPT codes, ICD-9 V-codes, or ICD-10 Z-codes in Table 1 to identify primary care visits to include.

b. Include only providers who have a National Provider Identifier (NPI)

Upon completing these steps, the denominator population has been selected.

Table 1. Codes for identifying primary care visits

Code	Description
Procedure codes	
99201-99205	Office or Other Outpatient services; New patient
99211-99215	Office or Other Outpatient services; Established patient
99218-99220	Initial Observation Care
99224-99226	Subsequent Observation Care
99241-99245	Office or Other Outpatient consultation
99304-99340	Assessment or supervision out of home?
99341-99345	Home Services, new patient
99347-99350	Home Services, established patient
99354-99357	Prolonged Service with Direct Patient Contact

99374-99380	Care Plan Oversight Services
99381-99384	Preventive Medicine Services, new patient (age 0-17)
99391-99394	Preventive Medicine Services, established patient (age 0-17)
99401	Preventive medicine counseling, approx. 15 minutes
99402	Preventive medicine counseling, approx. 30 minutes
99403	Preventive medicine counseling, approx. 45 minutes
99404	Preventive medicine counseling, approx. 60 minutes
99405-99410	Counseling Risk Factor Reduction and Behavior Change Intervention
99411	Group preventive medicine counseling, approximately 30 minutes
99412	Group preventive medicine counseling, approximately 60 minutes
99420	Administration and interpretation of health risk assessment instrument
99429	Unlisted preventive medicine service
99455-99456	Work Related or Medical Disability Evaluation Services
99432	Normal newborn care in other than hospital or birthing room setting, including physical examination of baby and conference(s) with parent(s)
99460	Initial hospital or birthing center newborn infant evaluation and management
99461	Initial care, per day, for evaluation and management of normal newborn infant seen in other than hospital or birthing center
G0402	Initial preventive physical examination; face-to-face visit, services limited to new beneficiary during the first 12 months of Medicare enrollment
G0438	Annual wellness visit; includes a personalized prevention plan of service (PPPS), first visit
G0439	Same as above, subsequent visit
ICD-9 Codes	
V20	Health supervision of infant or child
V20.1	Other healthy infant or child receiving care
V20.2	Routine infant or child health check
V20.3	Newborn health supervision (V20.3x)
V70.0	Routine general medical examination at a health care facility

V70.3	Other medical examination for administrative purposes
V70.8	Other specified general medical examinations
V70.9	Unspecified general medical examination
ICD-10 Codes	
Z761	Encounter for health supervision and are of foundling
Z762	Encounter for health supervision and care of other healthy infant and child
Z00129	Encounter for routine child health examination without abnormal findings
Z0000	Encounter for general adult medical exam without abnormal findings
Z0289	Encounter for other administrative examinations
Z008	Encounter for other general examination

Procedure to identify the numerator

Step 1 **Calculate the Bice-Boxerman COC index score for each child.** Use the SAS code available at http://www.seattlechildrens.org/research/child-health-behavior-and-development/mangione-smith-lab/measurement-tools/.

Step 2 **Calculate the number of eligible children with a Bice-Boxerman COC index of >=0.50.** This number is the numerator for the measure.

Procedure to calculate the quality measure

Step 1 **Divide the numerator (number of eligible children with a COC index ≥0.5) by the total number of eligible children.**

References

1. Christakis DA, Mell L, Koepsell TD, Zimmerman FJ, Connell FA. Association of lower continuity of care with greater risk of emergency department use and hospitalization in children. *Pediatrics.* 2001;107(3):524-529.