

Relational Continuity of Care Measure

DESCRIPTION

The measure calculates the proportion of patients who have a Bice-Boxerman Continuity of Care (BB-COC) index score of 0.5 or greater (excluding patients with fewer than two primary care visits during the one-year measurement period).

The BB-COC is a validated patient-level continuity index that measures the dispersion of a patient's care and ranges from 0 to 1. Zero reflects completely disjointed care (a different provider for each visit) and 1 reflects complete continuity with the same provider for all visits. A score of 0.5 or greater indicates that a patient's care is sufficiently concentrated among a limited number of primary care clinicians to reflect meaningful [relational continuity of care](#).

Because the BB-COC is first calculated at the individual patient level regardless of the accountable entity, patient scores can be readily aggregated to produce continuity scores at multiple levels, including clinician, practice, health system, health plan, and geographic region.

DEFINITIONS

Primary Care Clinician (PCC): Clinician types which commonly provide primary care:

- Family Practice
- Internal Medicine (General & Adolescent)
- General Practice
- Pediatric Medicine (General & Adolescent)
- Geriatric Medicine
- Nurse Practitioner (General, Adult, Community, Family, Gerontology, Pediatrics & Primary Care)
- Physician Assistant (General & Medical)

Primary Care Visit: any visit with a PCC

Patient Attribution: Regardless of the reporting or accountability level (e.g., clinician, practice, health system, health plan, or geographic region), a patient must first be attributed to a clinician to calculate the patient's BB-COC score. For patients who visit more than one clinician during the measurement period, the patient is attributed to the clinician who provided the greatest number of visits. In cases of a tie, the patient is attributed to the clinician who provided the most recent visit. This clinician attribution is used solely to calculate the patient-level BB-COC score and is separate from attribution to an accountable entity for measure reporting and performance assessment.

Measurement period: 12-month period

DENOMINATOR

The denominator is the total number of patients attributed to the accountable entity who had at least 2 visits to any PCC during the measurement period.

NUMERATOR

The numerator is the number of patients attributed to the accountable entity who have a continuity index score of 0.5 or higher.

Numerator Note: For each patient, the continuity index score is calculated using the BB-COC and is calculated as follows:

$$BB-COC = \frac{\sum_{i=1}^k n_i^2 - N}{N(N-1)}$$

Where:

k = the number of PCCs seen by the patient,

n_i = the number of visits to PCC **i**, and

N = the total number of visits.

CALCULATION ALGORITHM

Step 1: Identify clinicians providing primary care using the Primary Care Decision Tree Classifier methodology detailed in the [Appendix](#).

Step 2: Identify qualifying primary care visits. To qualify, a visit must (1) be provided by a clinician identified as a PCC in Step 1 and (2) meet the Primary Care Visit Definition, including the applicable place-of-service and procedure-code criteria specified in the Primary Care Decision Tree Classifier methodology.

Step 3: Identify patients with at least two qualifying primary care visits during the measurement period (BB-COC cannot be calculated for patients with fewer than two qualifying visits). This population forms the denominator.

Step 4: Calculate BB-COC as described above for each patient.

Step 5: Identify all patients with a BB-COC score of 0.5 or higher. This population forms the numerator.

Step 6: Divide the numerator by the denominator. This represents the proportion of patients with continuity of care within the accountable entity.

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

Appendix: Primary Care Decision Tree

Decision tree classifier methodology is fully described in Morgan, Zachary J., Andrew W. Bazemore, Lars E. Peterson, and Mingliang Dai. "Reclassifying Primary Care: A Decision Tree Approach to Improving Workforce Estimates and Research Using Claims Data." *J GEN INTERN MED* 41, 2947–2955 (2026). <https://doi.org/10.1007/s11606-026-10484-6>. Steps are reproduced below.

1. Restrict sample to clinician types which commonly provide primary care. We recommend clinicians with the taxonomies shown in [Supplemental Table 2.1](#).
2. Compute the following for each clinician within each calendar year (or any other 12-month period), using only medical claims (non-pharmacy).
 - N_c = Total # of unique claims
 - N_p = Total # of unique patients having at least one claim with the clinician
 - Criterion 1: "How often do you see healthy patients without specific diagnosis?"
 $C_1 = (\# \text{ unique claims having primary ICD-10 code beginning with } z00)/N_c$
 - Criterion 2: "How often do you see patients outside of a traditional primary care setting?"
 $C_2 = (\# \text{ unique claims with place of service in } 19, 20, 21, 22, 23, 31, \text{ or } 32)/N_c$
 - Criterion 3: "How many patients do you see multiple times a year?"
 $C_3 = (\# \text{ patients having claims on } 2 \text{ or more unique dates with clinician})/N_p$
3. Using the criteria computed in Step 2, classify clinicians who satisfy either of the following as providing primary care:
 - Clinician has $C_1 \geq 0.0058$
 - Clinician has both $C_2 < 0.218$ AND $C_3 \geq 0.186$
4. (Enhanced Tree) The enhanced decision tree uses additional criteria to exclude clinicians with strong indicators of *not* providing primary care. Compute the following using only medical claims (non-pharmacy):
 - Enhanced Criterion 1: "How many of your claims could qualify as a primary care visit?"
 $EC_1 = (\# \text{ unique claims qualifying as potential primary care visit})/N_c$
* See [Supplemental Table 2.2](#) for definition
 - Enhanced Criteria 2-8: "How focused is your care in specific areas of diagnosis?"
 $EC_2 = (\# \text{ unique claims with primary ICD-10 code beginning with } F31, F33, F41)/N_c$

$$\begin{aligned}
EC_3 &= (\# \text{ unique claims with primary ICD-10 code beginning with } I48, I50)/N_c \\
EC_4 &= (\# \text{ unique claims with primary ICD-10 code beginning with } M17, M25)/N_c \\
EC_5 &= (\# \text{ unique claims with primary ICD-10 code beginning with } L57, L82)/N_c \\
EC_6 &= (\# \text{ unique claims with primary ICD-10 code beginning with } C50)/N_c \\
EC_7 &= (\# \text{ unique claims with primary ICD-10 code beginning with } G47)/N_c \\
EC_8 &= (\# \text{ unique claims with primary ICD-10 code beginning with } M54, G89)/N_c
\end{aligned}$$

5. (Enhanced Tree) Classify clinicians satisfying any of the following as *not* providing primary care, overriding any classification from Step 3.

- $EC_1 < 0.1$
- $EC_2 \geq 0.35$
- $EC_3 \geq 0.20$
- $EC_4 \geq 0.80$
- $EC_5 \geq 0.20$
- $EC_6 \geq 0.10$
- $EC_7 \geq 0.50$
- $EC_8 \geq 0.30$

Supplemental Table 2.1. Common Primary Care Taxonomies

Clinician Type	Taxonomies
Family practice	207Q00000X, 207QA0401X, 207QA0000X, 207QA0505X, 207QB0002X, 207QG0300X, 207QH0002X, 207QS0010X, 207QS1201X
Internal medicine	207R00000X (General), 207RA0000X (Adolescent)
General practice	208D00000X
Pediatric medicine	208000000X (General), 2080A0000X (Adolescent)
Geriatric medicine	207RG0300X, 207QG0300X
Nurse practitioner	363L00000X (General), 363LA2200X (Adult), 363LC1500X (Community), 363LF0000X (Family), 363LG0600X (Gerontology), 363LP0200X (Pediatrics), 363LP2300X (Primary Care)
Physician assistant	363A00000X (General), 363AM0700X (Medical)

Supplemental Table 2.2. Primary Care Visit Definition

Places of Service	Procedure Codes (CPT-E&M and HCPCS-G)
02 - Telehealth Provided Other than in Patient's Home 05 - Indian Health Service Free-standing Facility 07 - Tribal 638 Free-standing Facility 10 - Telehealth Provided in Patient's Home 11 - Office 12 - Home 50 - Federally Qualified Health Center 71 - Public Health Clinic 72 - Rural Health Clinic	98000-98003, 98004-98007, 99202-99205, 99211-99215, 99341-99345, 99347-99350, 99381-99387, 99391-99397, 99401-99404, 99406-99409, 99483, 99497, 99498, G0438, G0439, G0466- G0468

Claims with both a place of service AND procedure code in this list qualify as a primary care visit.