

****Please read the DQA Measures User Guide prior to implementing this measure.****

DQA Measure Specifications: Administrative Claims-Based Measures

Prevention: Topical Fluoride for Adults at Elevated Caries Risk

Description: Percentage of adults aged 18 years and older who are at “elevated” risk (i.e., “moderate” or “high”) who received at least 2 topical fluoride applications within the reporting year

Numerator: Unduplicated number of adults at “elevated” risk (i.e., “moderate” or “high”) who received at least 2 topical fluoride applications

Denominator: Unduplicated number of adults at “elevated” risk (i.e., “moderate” or “high”)

Exclusions: Adults who are completely edentulous

Rate: NUM/DEN (after exclusions)

Rationale: In the United States, 91% of adults aged 20–64 years and 96% of adults aged 65 years and older had dental caries in their permanent teeth in 2011–2012 (1). American Dental Association evidence-based guidelines suggest that professionally applied fluoride varnish every three to six months is effective in preventing caries in adults based on risk for dental caries (2). Studies published following publication of this systematic review further support this preventive approach (3-4).

- 1) Dye BA, Thornton-Evans G, Li X, Iafolla TJ. Dental caries and tooth loss in adults in the United States, 2011–2012. NCHS data brief, no. 197. Hyattsville, MD: National Center for Health Statistics. 2015.
- 2) Weyant RJ, Tracy SL, Anselmo TT, Beltrán-Aguilar ED, et al; American Dental Association Council on Scientific Affairs Expert Panel on Topical Fluoride Caries Preventive Agents. Topical fluoride for caries prevention: executive summary of the updated clinical recommendations and supporting systematic review. J Am Dent Assoc. 2013 Nov;144(11):1279-91.
- 3) Zero DT, Brennan MT, et al. Clinical practice guidelines for oral management of Sjögren disease: Dental caries prevention. J Am Dent Assoc. 2016 Apr;147(4):295-305. doi: 10.1016/j.adaj.2015.11.008.
- 4) Gibson G, Jurasic MM, et al. Longitudinal outcomes of using a fluoride performance measure for adults at high risk of experiencing caries. J Am Dent Assoc. 2014 May;145(5):443-51. doi: 10.14219/jada.2013.53.

AHRQ Domain: Process¹

IOM Aim: Equity, Effectiveness

Level of Aggregation: Health Plan/Program

Improvement Noted As: A higher score indicates better quality²

¹ **Process (Clinical Quality Measure):** “A process of care is a health care-related activity performed for, on behalf of, or by a patient. Process measures are supported by evidence that the clinical process—that is the focus of the measure—has led to improved outcomes.” National Quality Measures Clearinghouse. Measure Domain Definitions. Available at: <https://www.ahrq.gov/gam/summaries/domain-definitions/index.html>. Accessed July 27, 2023.

² Evidence-based guidelines suggest that at-risk adults benefit from topical fluoride applications applied at least every 3- 6 months.

Data Required: Dental administrative enrollment and claims data; single year (prior 3 years needed for risk determination). When using claims data to determine service receipt, include both paid and unpaid claims (including pending, suspended, and denied claims).

Measure purpose: Examples of questions that can be answered through this measure at each level of aggregation:

1. What percentage of adults at elevated risk for dental caries receive at least 2 topical fluoride applications during the reporting year?
2. Does the receipt of professionally applied topical fluoride for adults at elevated risk vary by any of the stratification variables?
3. Are there disparities in receipt of professionally applied topical fluoride among different groups based on the stratification variables?
4. Over time, is the percentage of adults who receive at least 2 topical fluoride applications stable, increasing or decreasing?

Applicable Stratification Variables

1. Age: 18-20, 21-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85 and above
2. Geographic Location (e.g., rural; suburban; urban)
3. Race
4. Ethnicity
5. Socioeconomic Status (e.g., premium or income category)

Measure Limitations:

- This measure assumes that all modes of topical fluoride application are equally effective. The measure calls for the documentation of at least two instances (on different dates of service) of any combination of two fluoride specific CDT codes, D1206 and D1208. D1206 refers to professionally applied fluoride varnish and D1208 is any topical application of fluoride including fluoride gels or fluoride foams (excluding fluoride varnish).
- This measure does not take into account alternate home-use fluoride products including supplements.
- Identification of edentulous adults is determined based on CDT codes indicating complete dentures. Completely edentulous adults with incomplete claims data will not have sufficient information to be excluded from the measure.
- Since the “elevated risk” determination requires an evaluation (to record CDT risk code) or a treatment visit (to record a treatment code), adults who are enrolled but do not have a visit in the reporting year or a treatment visit in any of the prior three years will not have sufficient information to be included in the measure. While this is a limitation, the intent of this PROCESS measure is to seek to understand whether adults who can be positively identified as being at elevated risk receive the recommended preventive services.

Topical Fluoride Calculation for Adults at Elevated Caries Risk

1. Check if the subject meets age criterion at the last day of the reporting year.³
 - a. If subject is ≥ 18 , then proceed to next step.
 - b. If age criterion is not met or there are missing or invalid field codes (e.g., date of birth), then STOP processing. This subject is not counted in the denominator.

2. Check if subject is continuously enrolled for the reporting year (12 months) with a single gap of no more than 31 days (one month gap for programs that determine eligibility on a monthly basis):⁴
 - a. If subject meets continuous enrollment criterion, then proceed to next step.
 - b. If subject does not meet enrollment criterion, then STOP processing. This subject is not counted in the denominator.

3. Check if subject is eligible for exclusion from the denominator because the subject is completely edentulous based on meeting criteria in (a) below in the **reporting year or in the three years prior to the reporting year**:
 - a. Subject has complete dentures:
 - i. [CDT code] = [D5110 or D5130 or D5810 or D5410 or D5512 or D5710 or D5730 or D5750 or D6110 or D6114 or D6119]

 - AND
 - ii. [CDT code] = [D5120 or D5140 or D5811 or D5411 or D5511 or D5711 or D5731 or D5751 or D6111 or D6115 or D6118]
 - b. If (a)i AND (a)ii are both met, then the subject is completely edentulous; **remove this subject from the denominator**; STOP processing.
 - c. If either (a)(i) OR (a)(ii) is NOT met, then proceed to the next step.

YOU NOW HAVE THE COUNT OF SUBJECTS WHO MEET THE AGE AND ENROLLMENT CRITERIA AFTER EXCLUSIONS

³Medicaid programs exclude those enrollees who do not qualify for dental benefits. The exclusion criterion should be reported along with the number and percentage of members excluded.

⁴**Enrollment in "same" plan vs. "any" plan:** At the **state** program level (e.g., Medicaid/ CHIP) a criterion of "**any**" plan applies versus at the **health plan** (e.g., MCO) level a criterion of "**same**" plan applies. The criterion used should be reported with the measure score. While this prevents direct aggregation of results from plan to program, each entity is given due credit for the population it serves. Thus, states with multiple MCOs should not merely "add up" the plan level scores but should calculate the state score from their database to allow inclusion of individuals who may be continuously enrolled but might have switched plans in the interim.

4. Check if subject is at “elevated risk”:
 - a. If subject meets EITHER of the following criteria, then include in **denominator** (Note: BOTH (i) and (ii) should be checked to see if subject satisfies any criteria):
 - i. the subject has at least 3 instances of the CDT Codes among those in Table 1 in the reporting year OR in the three prior years (“look-back” approach),

Note 1: There must be at least 3 instances of the CDT codes contained in Table 1. These three instances may occur during the same visit or during separate visits. The three instances may occur in any one or more of: the reporting year and the three prior years. The three instances may all occur in the same year, or they may be spread across the years. The same code can be used to count for more than one instance. This criterion does not require unique dates or service or unique codes.

Note 2: The subject does not need to be enrolled in any of the prior three years for the denominator enrollment criteria; this is a “look back” for subjects who do have claims experience in any of the prior three years.

OR

- ii. the subject has a visit with a CDT code = (D0602 or D0603) in the reporting year.
 - b. If the subject does not meet either of the above criteria for elevated risk, then STOP processing. This subject will not be included in the measure denominator.

YOU NOW HAVE THE DENOMINATOR (DEN): Subjects who are at “elevated risk”

5. Check if subject received **at least 2 fluoride applications** during the reporting year — at least two unique dates of service when topical fluoride was provided. Service provided on each date of service should satisfy the following criterion:
 - a. If [CDT CODE] = D1206 or D1208 then include in **numerator**; STOP processing.
 - b. If a is not met, then STOP processing. This subject is already included in the denominator but is not included in the numerator.

NOTE: No more than one fluoride application can be counted for the same member on the same date of service.

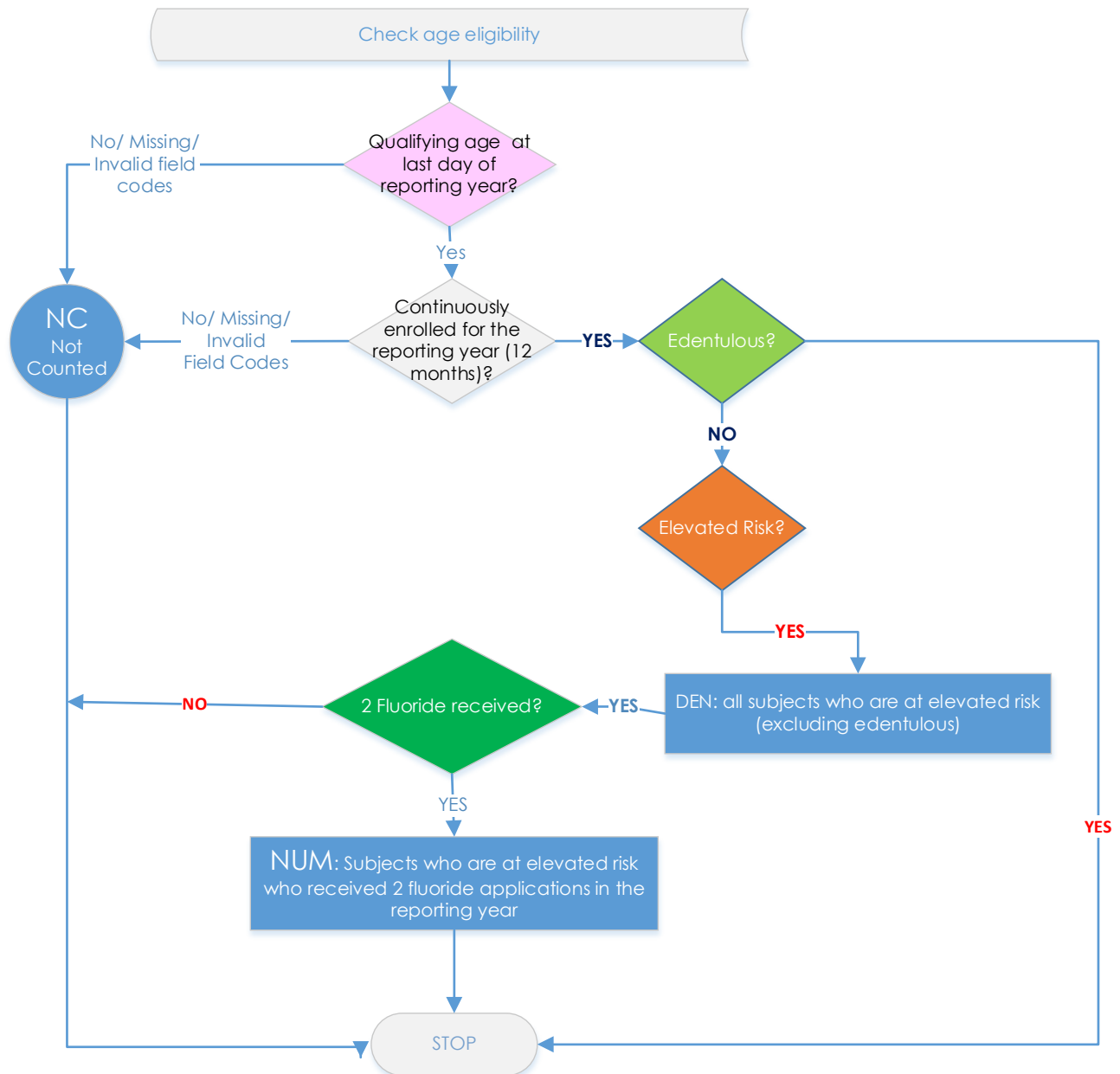
YOU NOW HAVE NUMERATOR (NUM) COUNT: Subjects at “elevated risk” who received at least two topical fluoride applications during the reporting year

6. Report
 - a. Unduplicated number of subjects in denominator before exclusions
 - b. Unduplicated number of subjects excluded
 - c. Unduplicated number of subjects in denominator after exclusions (DEN)
 - d. Unduplicated number of subjects in numerator (NUM)
 - e. Measure rate (NUM/DEN after exclusions)
 - f. Rate stratified by age

Table 1: CDT Codes to identify “elevated risk” for adults

D1352	D2392	D2610	D2710	D2782
D1354	D2393	D2620	D2712	D2783
D2140	D2394	D2630	D2720	D2790
D2150	D2410	D2642	D2721	D2791
D2160	D2420	D2643	D2722	D2792
D2161	D2430	D2644	D2740	D2794
D2330	D2510	D2650	D2750	D2799
D2331	D2520	D2651	D2751	D2931
D2332	D2530	D2652	D2752	D2932
D2335	D2542	D2662	D2753	D2933
D2390	D2543	D2663	D2780	
D2391	D2544	D2664	D2781	

Reliability of the measure score depends on the quality of the data elements that are used to calculate the measure. The percentages of missing or invalid data for each data element used to calculate the measure must be investigated prior to measurement. Data elements with high rates of missing or invalid data will adversely affect the subsequent counts that are recorded. For example, subjects who have records with missing or invalid CDT CODE may be counted in the denominator but not in the numerator. These records are assumed to not have had a qualifying service. In this case, a low-quality data set will result in a measure score that will not be reliable.



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