

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

DQA Measure Technical Specifications: Administrative Claims-Based Measures

Prevention: Sealants for 6–9 year-old Children at Elevated Risk, Dental Services

Description: Percentage of enrolled children in the age category of 6–9 years at “elevated” risk (i.e., “moderate” or “high”) who received a sealant on a permanent **first** molar tooth within the reporting year

Numerator: Unduplicated number of all enrolled children age 6–9 years at “elevated” risk (i.e., “moderate” or “high”) who received a sealant on a permanent **first** molar tooth as a dental service

Denominator: Unduplicated number of enrolled children age 6–9 years at “elevated” risk (i.e., “moderate” or “high”)

Rate: NUM/DEN

Rationale: Dental caries is the most common chronic disease in children in the United States (1). In 2009–2010, 14% of children aged 3–5 years had untreated dental caries. Among children aged 6–9 years, 17% had untreated dental caries, and among adolescents aged 13–15, 11% had untreated dental caries (2). Identifying caries early is important to reverse the disease process, prevent progression of caries, and reduce incidence of future lesions. Approximately three quarters of children younger than age 6 years did not have at least one visit to a dentist in the previous year (3). Evidence-based Clinical Recommendations recommend that sealants should be placed on pits and fissures of children’s primary and permanent teeth when it is determined that the tooth, or the patient, is at risk of experiencing caries. The evidence for sealant effectiveness in permanent molars is stronger than evidence for primary molars (4).

- 1) Centers for Disease Control and Prevention. Hygiene-related diseases: dental caries. Available at: http://www.cdc.gov/healthywater/hygiene/disease/dental_caries.html. Accessed July 28, 2015.
- 2) Dye BA, Li X, Thornton-Evans G. Oral health disparities as determined by selected Healthy People 2020 oral health objectives for the United States, 2009–2010. NCHS data brief, no 104. Hyattsville, MD: National Center for Health Statistics. 2012.
- 3) Edelstein BL, Chinn CH. Update on disparities in oral health and access to dental care for America’s children. *Acad Pediatr*. 2009;9(6):415-9. PMID: 19945076.
- 4) Beauchamp J, Caufield PW, Crall JJ, Donly K, Feigal R, Gooch B, et al. Evidence-based clinical recommendations for the use of pit-and-fissure sealants: a report of the American Dental Association Council on Scientific Affairs. *J Am Dent Assoc* 2008;139(3):257-268.

Evidence-based guidelines suggest sealing all children regardless of caries risk. (1) Clinicians should follow these recommendations in making care decisions. The DQA sealant measure uses prior history of restorations and provider assessed elevated risk in the denominator **as a means to identify a priority population** for targeting quality improvement at the program/plan level. Note that past history of restorations remains the strongest predictor for future caries related lesions.

1. Wright JT, Crall JJ, Fontana M, et al. Evidence-based clinical practice guideline for the use of pit-and-fissure sealants: A report of the American Dental Association and the American Academy of Pediatric Dentistry. *J Am Dent Assoc*. 2016;147(8):672-682 e612.

National Quality Forum Domain: Process¹

Institute of Medicine Aim: Equity, Effectiveness

National Quality Strategy: Health and Well-Being

Level of Aggregation: Health Plan/Program

Improvement Noted As: A higher score indicates better quality; interpreted in the context of relative scores (e.g., over time and between reporting entities)

Data Required: Administrative enrollment and claims data; single year for measurement (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 is the **relative percentage** of children receiving sealants when compared to another plan or program? (Note: This measure CANNOT be used to determine the absolute percentage of children ages 6–9 years who have sealants on their permanent first molars due to the limitations of administrative data in capturing prior sealant placement that are noted below. Rather, this measure indicates the prevalence of sealant placement during the reporting period.)
2. Over time, are sealant placement rates stable, increasing, or decreasing?

Measure Limitations due to Limitations of Administrative Data

- *This measure will not delineate those whose teeth have not erupted, those who have already received sealants in prior years, and those with decayed/filled teeth not candidates for sealants. This measure is designed to identify the prevalence of sealant placement on a permanent first molar tooth during the reporting year for children ages 6–9 years at elevated risk for caries; this measure is not designed to provide the absolute percentage of children who have ever had a sealant on a permanent first molar. As such, this prevalence-based measure is intended to be used for monitoring trends in sealant placement over time, variations in sealant placement between reporting entities, and disparities in sealant placement.*
- *Some codes (i.e., a few endodontic codes) included to identify children at elevated risk may also be reported for instances such as trauma and may contribute to some overestimation of children at “elevated risk.”*
- *Since the “elevated risk” determination requires an evaluation (to record a CDT risk code) or a treatment visit (to record a CDT treatment code), children 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 OF CARE measure is to seek to understand whether children who can be positively identified as being at elevated risk receive the recommended preventive services.*

¹ **Process (measure type):** “A healthcare service provided to, or on behalf of, a patient. This may include, but is not limited to, measures that may address adherence to recommendations for clinical practice based on evidence or consensus.” National Quality Forum. “NQF Glossary.” Available at: http://www.qualityforum.org/Measuring_Performance/Measuring_Performance.aspx. Accessed July 28, 2015.

Reporting Guidance

Programs adopting this measure should note the measure purpose and limitations indicated above. To assist with interpretation and for the purposes of evaluating and defining potential accountability applications, a more detailed review of the measure score by age, using the table below, may be helpful to program administrators.

Age (years)*	Enrolled at elevated risk (DEN)	Enrolled at elevated risk receiving a sealant in a permanent first molar (NUM)	Rate (NUM/DEN)
6 (>=6 and <7)			
7 (>=7 and <8)			
8 (>=8 and <9)			
9 (>=9 and <10)			

*Age should be calculated as of the last day of the reporting year.

Sealants for 6–9 year olds - Calculation for Children at Elevated Caries Risk

1. Check if the enrollee meets age criteria at the last day of the reporting year:²
 - a. If child is ≥ 6 and ≤ 9 , then proceed to next step.
 - b. If age criteria are not met or there are missing or invalid field codes (e.g., date of birth), then STOP processing. This enrollee does not get counted.
2. Check if subject is continuously enrolled for at least 180 days during the reporting year:³
 - a. If subject meets continuous enrollment criterion, then proceed to next step.
 - b. If subject does not meet enrollment criterion, then STOP processing. This enrollee does not get counted.

YOU NOW HAVE THE COUNT OF THOSE WHO MEET THE AGE AND ENROLLMENT CRITERIA

3. Check if subject is at “elevated risk”:
 - a. If subject meets ANY of the following criteria, then include in **denominator**:
 - i. the subject has a CDT Code among those in Table 1 in the reporting year,
OR
 - ii. the subject has a CDT Code among those in Table 1 in any of the three years prior to the reporting year, (**NOTE:** 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 enrollees who do have claims experience in any of the prior three years.)
OR
 - iii. the subject has a visit with a CDT code = (D0602 or D0603) in the reporting year.

If the subject does not meet any of the above criteria for elevated risk, then STOP processing. This enrollee will not be included in the measure denominator.

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

4. Check if subject received a sealant as a dental service during the reporting year:
 - a. If [CDT CODE] = D1351, AND
 - b. If [RENDERING PROVIDER TAXONOMY] code = any of the NUCC maintained Provider Taxonomy Codes in Table 2 below, then proceed to next step.⁴
 - c. If both a AND b are not met, then the service was not a “dental service”; STOP processing. This enrollee is already included in the denominator but will not be included in the numerator.

Note: In this step, all **claims** with missing or invalid CDT CODE, missing or invalid NUCC maintained Provider Taxonomy Codes, or NUCC maintained Provider Taxonomy Codes that do not appear in Table 2 should not be included in the numerator.

5. Check if sealant was placed on a permanent first molar:

² **Medicaid/CHIP programs should exclude those individuals who do not qualify for dental benefits.** The exclusion criteria should be reported along with the number and percentage of members excluded.

³ **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 **Identifying “dental” services:** Programs and plans that do not use standard NUCC maintained provider taxonomy codes should use a valid mapping to identify providers whose services would be categorized as “dental” services. Stand-alone dental plans that reimburse ONLY for services rendered by or under the supervision of the dentist can consider all claims as “dental” services.

- a. If [TOOTH-NUMBER] = 3, 14, 19 or 30, using the Universal Numbering System, then include in numerator; STOP processing.
- b. If not, then service was not provided for a permanent first molar; STOP processing. This enrollee is already included in the denominator but will not be included in the numerator.

YOU NOW HAVE NUMERATOR (NUM) COUNT: Enrollees at “elevated risk” who received a sealant on a permanent first molar as a dental service

6. Report
 - a. Unduplicated number of enrollees in numerator
 - b. Unduplicated number of enrollees in denominator
 - c. Measure rate (NUM/DEN)

Table 1: CDT Codes to identify “elevated risk”

D1354	D2393	D2620	D2712	D2790	D2950
D2140	D2394	D2630	D2720	D2791	D3110
D2150	D2410	D2642	D2721	D2792	D3120
D2160	D2420	D2643	D2722	D2794	D3220
D2161	D2430	D2644	D2740	D2799	D3221
D2330	D2510	D2650	D2750	D2930	D3222
D2331	D2520	D2651	D2751	D2931	D3230
D2332	D2530	D2652	D2752	D2932	D3240
D2335	D2542	D2662	D2780	D2933	D3310
D2390	D2543	D2663	D2781	D2934	D3320
D2391	D2544	D2664	D2782	D2940	D3330
D2392	D2610	D2710	D2783	D2941	

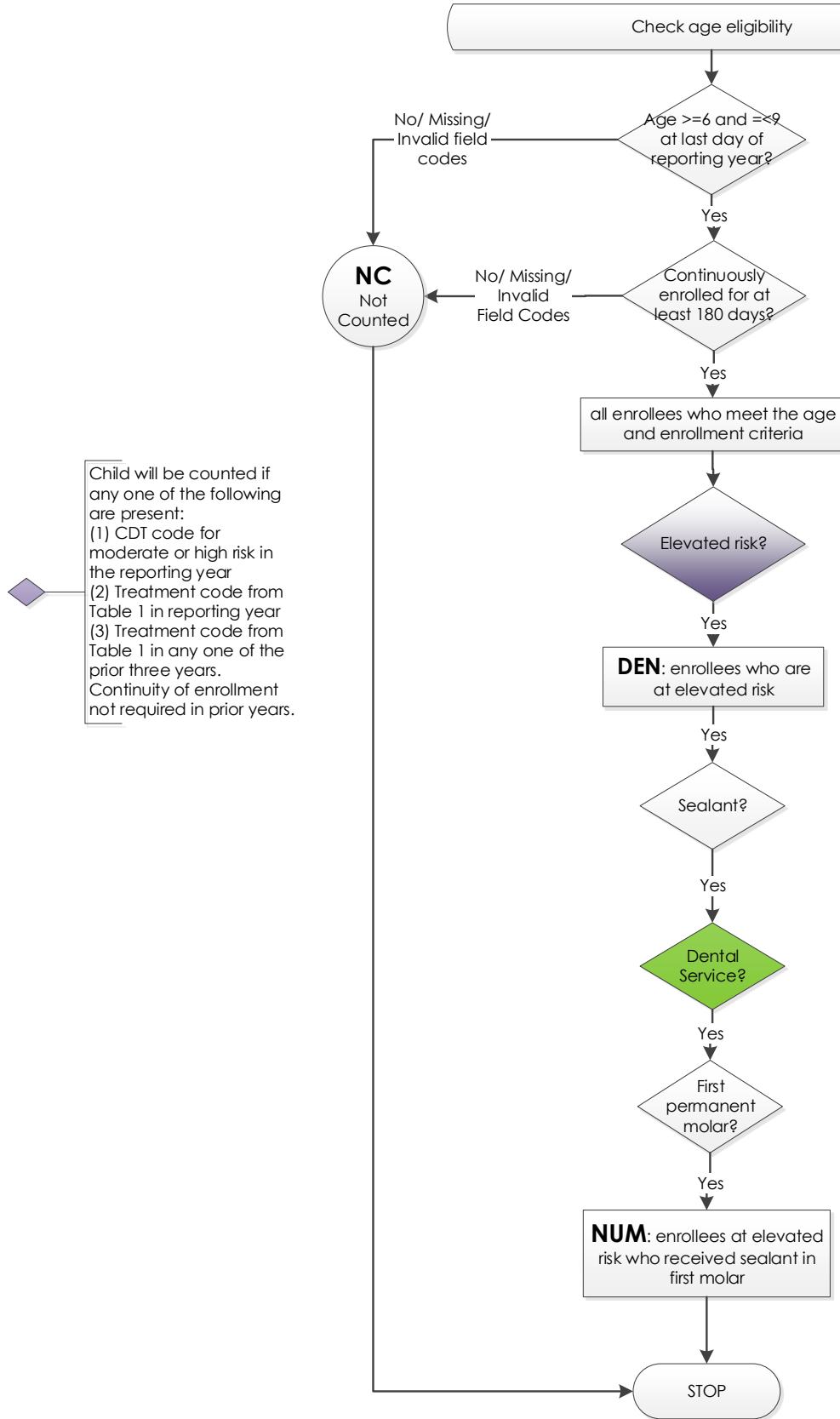
Table 2: NUCC maintained Provider Taxonomy Codes classified as “Dental Service”*

122300000X	1223P0106X	1223X0008X	125Q00000X
1223D0001X	1223P0221X	1223X0400X	261QF0400X
1223D0004X	1223P0300X	124Q00000X+	261QR1300X
1223E0200X	1223P0700X	125J00000X	
1223G0001X	1223S0112X	125K00000X	

*Services provided by County Health Department dental clinics may also be included as “dental” services.

+Only dental hygienists who provide services under the supervision of a dentist should be classified as “dental” services. Services provided by independently practicing dental hygienists should be classified as “oral health” services and are not applicable for this measure.

*** Note: Reliability of the measure score depends on the quality of the data that are used to calculate the measure. The percentages of missing and invalid data for these data elements 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, records with missing or invalid TOOTH-NUMBER 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 low measure score and will not be reliable.***



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