

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

## DQA Measure Technical Specifications: Administrative Claims-Based Measures Prevention: Sealants for 10–14 year-old Children at Elevated Risk, Dental Services

**Description:** Percentage of enrolled children in the age category of **10–14** years at “elevated” risk (i.e., “moderate” or “high”) who received a sealant on a permanent **second** molar tooth within the reporting year  
**Numerator:** Unduplicated number of enrolled children age **10–14** years at “elevated” risk (i.e., “moderate” or “high”) who received a sealant on a permanent **second** molar tooth as a dental service  
**Denominator:** Unduplicated number of enrolled children age **10–14** 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](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. 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 **simply 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 cavities.

**National Quality Forum Domain:** Process<sup>1</sup>

**Institute of Medicine Aim:** Equity, Effectiveness

**National Quality Strategy Priority:** Health and Wellbeing

**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 10–14 years who have sealants on their permanent second 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 second molar tooth during the reporting year for children ages 10–14 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 second 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.*

---

<sup>1</sup> **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](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.

| <b>Age (years)*</b> | <b>Enrolled at elevated risk (DEN)</b> | <b>Enrolled at elevated risk receiving a sealant in a permanent second molar (NUM)</b> | <b>Rate (NUM/DEN)</b> |
|---------------------|--|--|-----------------------|
| 10 (>=10 and <11)   |  |  |                       |
| 11 (>=11 and <12)   |  |  |                       |
| 12 (>=12 and <13)   |  |  |                       |
| 13 (>=13 and <14)   |  |  |                       |
| 14 (>=14 and <15)   |  |  |                       |

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

## Sealants for 10–14 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:<sup>2</sup>
  - a. If child is  $\geq 10$  and  $\leq 14$ , 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:<sup>3</sup>
  - 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.
  - b. 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.<sup>4</sup>
  - 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.

---

<sup>2</sup> **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.

<sup>3</sup> **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.

<sup>4</sup> **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.

5. Check if sealant was placed on a permanent second molar:
  - a. If [TOOTH-NUMBER] = 2, 15, 18, 31, using the Universal Numbering System, then include in numerator; STOP processing.
  - b. If not, then service was not provided for a permanent second 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 second 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 |       |

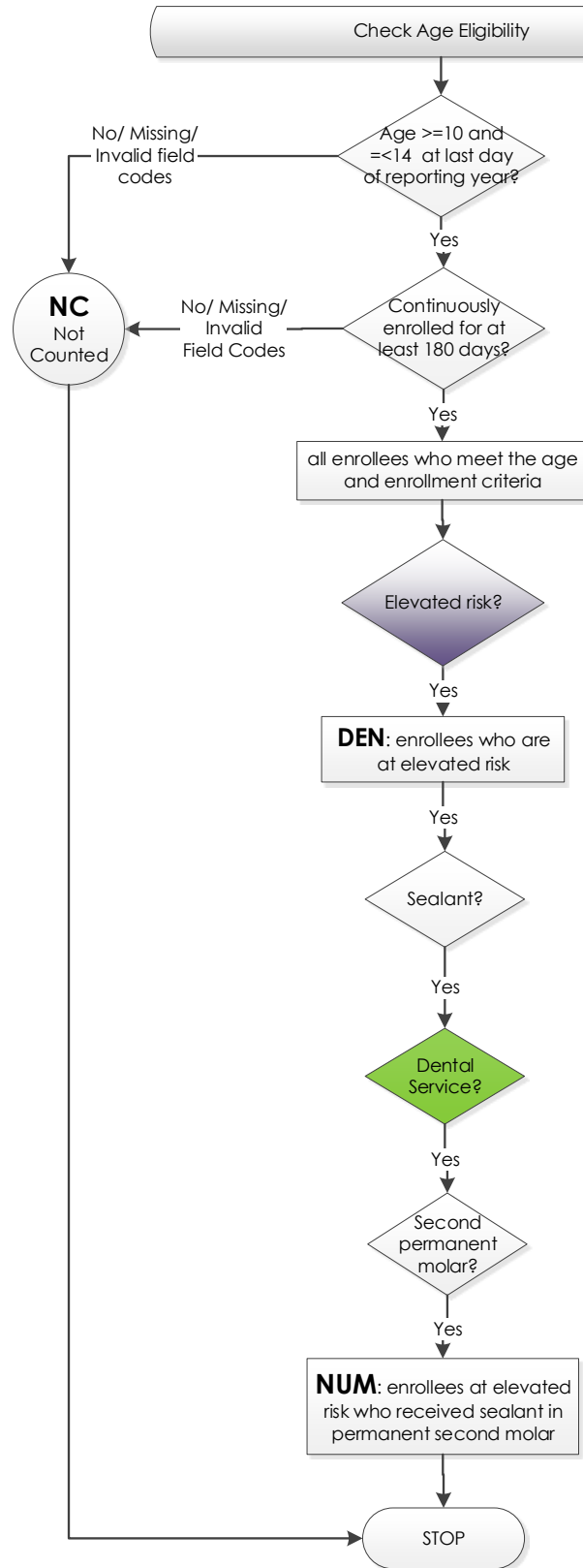
**Table 2: NUCC maintained Provider Taxonomy Codes classified as “Dental Service”\***

|            |            |             |            |
|------------|------------|-------------|------------|
| 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.\*\*\*



Child will be counted if any one of the following are present:  
 (1) CDT code for moderate or high risk in the reporting year  
 (2) Treatment code from Table 1 in reporting year  
 (3) Treatment code from Table 1 in any one of the prior three years.  
 Continuity of enrollment not required in prior years.

2019 American Dental Association on behalf of the Dental Quality Alliance (DQA) ©. All rights reserved. Use by individuals or other entities for purposes consistent with the DQA's mission and that is not for commercial or other direct revenue generating purposes is permitted without charge.

Dental Quality Alliance Measures (Measures) and related data specifications, developed by the Dental Quality Alliance (DQA), are intended to facilitate quality improvement activities. These Measures are intended to assist stakeholders in enhancing quality of care. These performance Measures are not clinical guidelines and do not establish a standard of care. The DQA has not tested its Measures for all potential applications. Measures are subject to review and may be revised or rescinded at any time by the DQA. The Measures may not be altered without the prior written approval of the DQA. The DQA shall be acknowledged as the measure steward in any and all references to the measure. Measures developed by the DQA, while copyrighted, can be reproduced and distributed, without modification, for noncommercial purposes. Commercial use is defined as the sale, license, or distribution of the Measures for commercial gain, or incorporation of the Measures into a product or service that is sold, licensed or distributed for commercial gain. Commercial uses of the Measures require a license agreement between the user and DQA. Neither the DQA nor its members shall be responsible for any use of these Measures.

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

Limited proprietary coding is contained in the Measure specifications for convenience.

For Proprietary Codes:

The code on Dental Procedures and Nomenclature is published in Current Dental Terminology (CDT), Copyright © 2018 American Dental Association (ADA). All rights reserved.

This material contains National Uniform Claim Committee (NUCC) Health Care Provider Taxonomy codes ([http://www.nucc.org/index.php?option=com\\_content&view=article&id=14&Itemid=125](http://www.nucc.org/index.php?option=com_content&view=article&id=14&Itemid=125)). Copyright © 2018 American Medical Association. All rights reserved.

Users of the proprietary code sets should obtain all necessary licenses from the owners of these code sets. The DQA, American Dental Association (ADA), and its members disclaim all liability for use or accuracy of any terminologies or other coding contained in the specifications.

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