Demystifying the HRSA Sealant Measure

GM Nana Lopez, DDS, MPH
Jill Boylston Herndon, PhD
Irene V. Hilton, DDS, MPH, FACP

NNOHA Annual Conference
November 17, 2015
Objectives

- Explain why the evidence base refutes common myths about sealants
- Describe how the numerator and denominator for HRSA’s new sealant measure are calculated
- Develop a plan for calculating your 2015 sealant percentage
- Understand quality improvement strategies that will move your percentage in 2016
Primary Care Mission and Strategies

Improving the health of the Nation’s underserved communities and vulnerable populations by assuring access to comprehensive, culturally competent, quality primary health care services.

- Increase access to primary health care services
- Modernize primary care infrastructure and delivery system
- Improve health outcomes and health equity
- Promote performance-driven, innovative organizations

Increase Value of Health Center Program

UDS Dental Sealant Measure
Background:
Sealants Myths/Evidence Base

GM Nana Lopez, DDS, MPH
Healthy People 2020

Healthy People provides science-based, 10-year national objectives for improving the health of all Americans. For 3 decades, Healthy People has established benchmarks and monitored progress over time in order to:

• Encourage collaborations across communities and sectors.
• Empower individuals toward making informed health decisions.
• Measure the impact of prevention activities.
Year 2020 Objective for Sealants

- **OH-12** Increase the proportion of children and adolescents who have received dental sealants on their molar teeth.

  - **OH-12.2** Increase the proportion of children aged 6 to 9 years who have received dental sealants on one or more of their permanent first molar teeth.
Goal and Baseline for 2020

- The goal for sealants on one or more permanent molars for 6-9 year olds: 28.1%

- Baseline (from 1999-2004 study):
  - For all children 6-9 years of age: 25.5%
  - For Black or African Am children: 18.4%
  - For White not Hispanic children: 30.1%
CHCs are Logical Places to Make a Difference

- One of our primary mandates is to do prevention

- We serve the children at highest risk due to location and SES
Why Choose Sealants

- Virtually prevents all pit and fissure caries
- About 80% of caries occurs in pits and fissures

- Mother nature incompletely fuses our enamel and we are doomed to get caries, no matter how much fluoride and brushing one is exposed to
This image shows the pit with sealants in it, protecting the inner area from decay causing germs
Evidence-based clinical recommendations for the use of pit-and-fissure sealants
A report of the American Dental Association Council on Scientific Affairs

While dental sealants have been recognized as an effective approach to preventing pit-and-fissure caries in children,\(^1\) clinical questions remain about the indications for placing pit-and-fissure sealants, the criteria for their placement over early caries.

**ABSTRACT**

**Background.** This article presents evidence-based clinical recommendations for use of pit-and-fissure sealants developed by an expert panel convened by the American Dental Association Council on Scientific Affairs. The panel addressed the following clinical questions: Under what circumstances should sealants be placed to prevent caries? Does placing sealants over early (noncavitated) lesions prevent progression of the lesion? Are there conditions that favor the placement of resin-based versus glass ionomer cement sealants in terms of retention or caries prevention? Are there any techniques that could improve sealants' retention and effectiveness in caries prevention?

**Types of Studies Reviewed.** Staff of the ADA Division of Science conducted a...
Questions that were addressed by this paper

- Under what circumstances should sealants be placed to prevent caries?
- Does placing sealants over early (noncavitated) lesions prevent progression of the lesion?
- Are there conditions that favor the placement of resin-based versus glass ionomer cement sealants in terms of retention or caries prevention?
- Are there any techniques that could improve sealants’ retention and effectiveness in caries prevention?
Results

- The expert panel developed clinical recommendations for each clinical question.

- The panel concluded that sealants are effective in caries prevention and that sealants can prevent the progression of early noncavitated carious lesions.
Progression of caries - all sealable
Clinical Implications

- These recommendations presented as a resource to be considered in clinical decision-making process.
- As part of evidence-based approach to care, these clinical recommendations should be integrated with practitioners professional judgment and patient’s needs and preferences.
- Evidence indicates sealants can be used effectively to prevent initiation and progression of dental caries.
Take Home Messages from this unsexy Paper

- Choosing teeth for sealants
  - Visual examination after cleaning and drying the tooth is sufficient to detect early noncavitated lesions in pits and fissures
  - Use of explorers is not necessary for detection of early lesions, and forceful use of sharp explorer can damage tooth surfaces
  - Clinicians can use recently taken radiographs, if available, in the decision making process but should not obtain radiographs for the sole purpose of placing sealants.
Other conclusions and recent findings that will help facilitate placement of sealants on at risk teeth:

- Teeth do not need to be cleaned with pumice nor opened up with a bur to help in retention.

- Other dental staff can be trained to select teeth for placing sealants.

- Four-handed technique is ideal.
Why should we seal instead of fill incipient caries?

- We should strive to do no harm

- Drilling on a tooth starts the potential cycle of needing replacements, leading to larger loss of tooth structure and possible eventual tooth loss
Consequences of Placing Restorations

- Increased risk for secondary dental caries
- Compromised tooth integrity and vitality
- Expense and inconvenience
- Diminished esthetics and function
- Exposure to anesthetic, radiation, materials and instrumentation
Cycle of Re-Restoration

- A lifetime of re-evaluation and subsequent re-restoration results once a tooth is restored.
- Replacements are always larger.
- Longevity of restorations decreases as size increases.
- Risk for future tooth loss increases.


In conclusion

- Pit and fissure sealants are one of our most important interventions in helping to make disease free populations
- They are safe and effective (even over early caries)
- There is not any more risk to a tooth of failure with a well placed sealant
- The highest risk children are seen in our CHC, we must use our resources and do all in our power to assure a healthy future by sealing all susceptible pits and fissures
Implementing the New HRSA UDS Sealant Measure

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Indianapolis, Indiana

Jill Boylston Hemdon, PhD
Key Analytics and Consulting
Consultant, Dental Quality Alliance
Dental Quality Alliance Contacts

Diptee Ojha  ojhad@ada.org
Lead Staff, Dental Quality Alliance
Senior Manager, Office of Quality Assessment & Improvement
Council on Dental Benefits Program

Krishna Aravamudhan, BDS aravamudhank@ada.org
Director, Center for Dental Benefits, Coding and Quality
American Dental Association Practice Institute

Jill Boylston Hemdon, PHD jill.hemdon@keyanalyticsconsulting.com
Consultant, Dental Quality Alliance
2008 • Dental Quality Alliance proposed by Centers for Medicare and Medicaid Services

2009 • Formation of Steering Committee

2010 • 1st DQA Meeting

2013 • 1st Fully Tested Comprehensive Measure Set

2014 • DQA Measures Endorsed by the NQF
   • Additional Measure Development in both Adult and Pediatric Populations
**DQA eMeasures: Background**

- Dental providers eligible to participate in Meaningful Use EHR Incentive Programs
- July 2015: >21,000 dentists have registered (CMS 2015)
- 2014 edition of MU: Only 2 of 64 electronic Clinical Quality Measures (eCQMs) related to oral health
- DQA developed two additional eCQMs under contract with the Office of the National Coordinator for Health Information Technology for 2017 edition of Meaningful Use
Meaningful Use Measurement Dashboard for EHR enabled oral health clinical quality measures

DQA Measure

STAGE 3
Access: Oral Evaluation/Continuity

STAGE 2
Prevention: Fluoride

STAGE 3
Prevention: Sealants

STAGE 2
Outcome: New Caries
DQA eMeasure Development and Testing Process

Measure Development

Topic Selection → Environmental Scan → Dental Community Input

Proposed Measures and Specifications eCQMs: Quality Data Model and Value Sets

Dental Community Input

Proposed Measure Concepts

Dental Community Input

Feasibility & Usability Surveys of Stakeholders

Implement Measures on Test Datasets with Known Values to Test Feasibility and Reliability

Calculate Measure Scores using Clinical Data (Face Validity, Performance Gap Assessments)

Critical Data Element Reliability/Validity of Automated Report Compared to Manual Abstraction of Full EHR

Final Measures

Dental Community Input

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Feasibility Assessments

Solicited feedback through surveys of the memberships of:

- NNOHA
- AAPD
- AAP
- AGD

Respondent Profile – Dental Care Providers

<table>
<thead>
<tr>
<th>Response</th>
<th>Chart</th>
<th>Percentage</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large group practice</td>
<td></td>
<td>3.7%</td>
<td>15</td>
</tr>
<tr>
<td>FQHC/CHC</td>
<td></td>
<td>34.6%</td>
<td>139</td>
</tr>
<tr>
<td>Solo/small group practice</td>
<td></td>
<td>40.3%</td>
<td>162</td>
</tr>
<tr>
<td>Academic Health Center/Academic Dental Practice</td>
<td></td>
<td>14.4%</td>
<td>58</td>
</tr>
<tr>
<td>Other, please specify</td>
<td></td>
<td>7.0%</td>
<td>28</td>
</tr>
<tr>
<td><strong>Total Responses</strong></td>
<td></td>
<td><strong>402</strong></td>
<td></td>
</tr>
</tbody>
</table>
Sealants for 6-9 Year Olds

- Evidence based
- Aligned with Healthy People 2020 Oral Health Objective OH-12.2
- Aligned with CMS Oral Health Initiative
- Claims-based version included in 2015 Core Set of Children’s Health Care Quality Measures for Medicaid and CHIP

Included in CY2015 UDS reporting
How does the UDS sealant measure relate to the HP 2020 objective?
How does the UDS sealant measure relate to the HP 2020 objective?

**Healthy People 2020**
Increase the proportion of children aged 6 to 9 years who have received dental sealants on one or more of their permanent first molar teeth.

- Broad objective
- Population based
- Retrospective surveillance
- Assessment that tells us if community, program, plan, provider level interventions are effective over time

- Quality measure with detailed specifications
- Practice/full clinical record level
- Indicates how well practice/health center is doing at sealing molars that can be sealed but have not yet been sealed during the reporting period

**HRSA UDS Measure**
Percentage of children, aged 6 through 9, at moderate to high risk for caries who received a sealant on a first permanent molar during the reporting period.
Measure Overview: Sealants 6-9 Years

**NUM:** How many received a sealant on a permanent first molar in the reporting year

**DEN:** Of dental patients, aged 6-9 years at elevated caries risk, of record in the practice in the reporting year, who needed a sealant in a permanent first molar

Denominator Exclusions (subtract from denominator):

- All four molars are not candidates for sealants.

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## Sealant Measure Calculation

### Overview: Translation to UDS Reporting

<table>
<thead>
<tr>
<th>Line 22, Column A</th>
<th><strong>Denominator After Exclusions = (Denominator Before Exclusions - Exclusions)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Concept represented</strong></td>
<td>Number of dental patients, aged 6 through 9, who had an oral assessment or comprehensive or periodic oral evaluation visit during the reporting year and were documented as being at moderate to high risk for caries [Exclusions: Children for whom ALL first permanent molars are non-sealable]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Line 22, Column C</th>
<th><strong>Numerator</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Concept represented</strong></td>
<td>Number of dental patients aged 6 through 9 in the denominator <strong>who received a sealant on a permanent first molar in the measurement year</strong></td>
</tr>
</tbody>
</table>

*For the purposes of illustrating the measure calculation, it is assumed that Column B is equal to Column A – i.e., data are reported on all patients in the denominator universe.*
Sealant Measure Calculation: Process Flow Overview

Health Center Dental Patients, CY 2015

Age 6-9 years?
- No
  - Not counted
  - Of patients in the denominator with at least one sealable permanent first molar

- Yes
  - Oral assessment OR comprehensive or periodic oral evaluation?
    - No
      - Not counted
    - Yes
      - Moderate or high caries risk?
        - No
          - Of patients in the denominator
        - Yes
          - Are ALL FOUR permanent first molars non-sealable?
            - Yes
              - DENOMINATOR (before exclusions): dental patients 6-9 years at elevated caries risk
            - No
              - Of patients in the denominator with at least one sealable permanent first molar

  - Sealant?
    - Yes
      - Permanent first molar?
        - Yes
          - NUMERATOR: Dental patients 6-9 years at elevated caries risk who received a sealant in a permanent first molar
        - No
          - Not counted
## Assess Availability of the Data Elements Needed to Calculate the Measure

<table>
<thead>
<tr>
<th>Measure Component</th>
<th>Concept</th>
<th>Data Element Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Denominator</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>Date of birth</td>
<td></td>
</tr>
<tr>
<td>Patient of record</td>
<td>CDT code (D0191, D0120, D0145, D0150, or D0180)</td>
<td></td>
</tr>
<tr>
<td>Elevate caries risk</td>
<td>CDT code (D0602 or D0603) or other documentation of caries risk assessment finding (low, moderate, or high)</td>
<td></td>
</tr>
<tr>
<td><strong>Numerator</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sealant</td>
<td>CDT code (D1351)</td>
<td></td>
</tr>
<tr>
<td>Permanent 1st Molar</td>
<td>Tooth number</td>
<td></td>
</tr>
<tr>
<td><strong>Exclusions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Sealable Teeth</td>
<td>CDT codes (e.g., teeth already sealed, restored); patient findings (e.g., missing, un-erupted teeth); condition/problem lists (e.g., active decay)</td>
<td></td>
</tr>
</tbody>
</table>
Sealant Measure Reporting: Getting Started!

What if I don’t have all of the data elements?

Current Reporting
- Identify what you can report on using data from electronic patient records and/or your practice management system
- Consider whether you can obtain more complete data for CY 2015 reporting through a random sample of charts (following UDS Reporting Instructions)

Future Reporting
- Assess the steps required to capture or improve structured data capture of the needed data elements electronically
- Engage key stakeholders - clinicians, staff, IT personnel, electronic record/PMS vendors

Improving documentation of services provided is a quality improvement initiative!
Sealant Measure Calculation

**NUM**: How many received a sealant on a permanent first molar in the reporting year

**DEN**: Of dental patients, aged 6-9 years at elevated caries risk, of record in the practice in the reporting year, who needed a sealant in a permanent first molar

\[
\text{Measure Score} = \frac{\text{NUM}}{\text{DEN}}
\]
Sealant Measure Calculation: Denominator Determination

Health Center Dental Patients, CY 2015

Age 6-9 years?

No

Not counted

Oral assessment OR comprehensive or periodic oral evaluation?

No

No

Moderate or high caries risk?

No

No

DENOMINATOR (before exclusions): dental patients 6-9 years at elevated caries risk
## DEN: Dental patients, aged 6-9 years at elevated caries risk, of record in the practice in the reporting year who needed a sealant in a permanent first molar

<table>
<thead>
<tr>
<th><strong>6-9 years</strong></th>
<th><strong>For CY 2015 reporting: date of birth between January 1, 2006 – December 31, 2009</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>of record in the practice</strong></td>
<td><strong>had an oral assessment (CDTD0191) OR a comprehensive or periodic oral evaluation visit (CDTD0120, D0145, D0150, or D0180)</strong></td>
</tr>
<tr>
<td><strong>elevated caries risk</strong></td>
<td><strong>at moderate to high caries risk (CDTD0602 or D0603) based on caries risk assessment</strong></td>
</tr>
<tr>
<td><strong>needed sealants</strong></td>
<td><strong>at least one of the permanent first molars is a candidate for a sealant (i.e., none of the “non-sealable” reasons apply)</strong></td>
</tr>
</tbody>
</table>
Why is the denominator restricted to children at moderate to high risk for caries?
Evidence

The Cochrane Collaboration

Rationale and Evidence

ADA. Center for Evidence-Based Dentistry™

Guideline on Periodicity of Examination, Preventive Dental Services, Anticipatory Guidance/Counseling, and Oral Treatment for Infants, Children, and Adolescents

Originating Committee
Clinical Affairs Committee
Review Council
Council on Clinical Affairs
Adopted
1998
Revised
Why elevated risk?
• Quality measures should be based on current best evidence.
• Evidence-based guidelines recommend sealants be placed when the tooth or person is at risk.

Aren’t all low-income children considered elevated risk?
• Evidence-based guidelines recommend that patient-level (not population-based) risk assessment drive treatment planning and care delivery.
Breaking Down the Denominator
Criteria: Elevated Caries Risk

Does this mean that we should not place sealants on children who are not at elevated caries risk?

- The measure should not be construed as a policy statement or basis for altering benefit design.
- Rather, it is a means of assessing to what degree recommended services are being provided to a particular group of individuals for whom the evidence of effectiveness is the strongest.

What caries risk assessment tool should be used?

- The measure does not specify or recommend a particular risk assessment tool.
Do the caries risk assessment findings have to be reported as CDT codes in order to be counted in the measure?

• Ideally, to promote standard and consistent data capture, caries risk assessment findings are reported using the CDT codes D0601 (low), D0602 (moderate), or D0603 (high).

• However, your center may have captured these findings through a caries risk assessment template that currently does not record the findings as a CDT code.

• As long as you have patient-level assessments that can distinguish elevated caries risk from low caries risk, then those values can be used to identify elevated caries risk.
Sealant Measure Calculation: Exclusions Determination

Of patients in the denominator

Are ALL FOUR permanent first molars non-sealable?

YES

DENOMINATOR EXCLUSION: dental patients 6-9 years at elevated caries risk who do NOT have any sealable permanent first molars
Denominator Exclusions

**Exclusions:** Children who otherwise meet the denominator criteria are subtracted from the denominator if all four of the permanent first molars are non-sealable in the measurement period.

**A “non-sealable” tooth:**
- unerupted
- missing
- already sealed
- has restoration (filled)
- fracture
- active caries/decay

**Example:** 10 children meet age, caries risk, and oral assessment/evaluation criteria. 2 meet exclusion criteria. 8 are included in denominator.

None of the four permanent first molars have erupted: exclusion.

All four permanent first molars have been sealed: exclusion.
Denominator Exclusions

Current Reporting
- Evaluate exclusions based on the data you DO have available.
- You can still calculate the measure as NUM/DEN, even if you are unable to identify exclusions.
- But your measure score (NUM/DEN) will be lower if you are unable to identify eligible exclusions.

Future Reporting
- Identify opportunities (and the steps that need to be taken) to enable better identification of children who are appropriately excluded from the measure during the reporting year.

This is a quality improvement activity!
Sealant Measure Calculation: Numerator Determination

Of patients in the denominator with at least one sealable permanent first molar

Sealant?

Permanent first molar?

YES

YES

NUMERATOR: Dental patients 6-9 years at elevated caries risk who received a sealant in a permanent first molar
NUM: Children in the denominator who received a sealant on a permanent first molar

What counts:
- Any sealant placed on a permanent first molar during the reporting period regardless of whether it was placed before, on the same day as, or after the oral assessment/evaluation.
- Sealants placed regardless of whether it was at the health center being measured or elsewhere - as long as it is documented.
- Must be placed during reporting period.
Sealant Measure Calculation: Process Flow Recap

Health Center Dental Patients, CY 2015

- Age 6-9 years?
  - No: Not counted
  - Yes: Oral assessment OR comprehensive or periodic oral evaluation?
    - No: Moderate or high caries risk?
      - No: DENOMINATOR (before exclusions): dental patients 6-9 years at elevated caries risk
      - Yes: Are ALL FOUR permanent first molars non-sealable?
        - Yes: Sealant?
          - Yes: Permanent first molar?
            - Yes: DENOMINATOR EXCLUSION: dental patients 6-9 years at elevated caries risk who do NOT have any sealable permanent first molars
            - No: NUMERATOR: Dental patients 6-9 years at elevated caries risk who received a sealant in a permanent first molar
        - No: Not counted
Two Process Flow Options

- Calculate Denominator Before Exclusions
  - Check All Denominator-Eligible Children for Exclusions
  - Calculate Denominator After Exclusions
  - Calculate Numerator

OR

- Calculate Denominator Before Exclusions
  - Calculate Numerator
  - Check All Denominator-Eligible Children NOT meeting Numerator Criteria for Exclusions
  - Calculate Denominator After Exclusions
Two Process Flow Options

Calculate Denominator Before Exclusions

Check All Denominator-Eligible Children for Exclusions

Calculate Denominator After Exclusions

Both approaches result in the same numbers. The second approach reduces the number of children for whom exclusions are checked by only focusing on those in the denominator who do not qualify for the numerator.

Calculate Numerator

Check All Denominator-Eligible Children NOT meeting Numerator Criteria for Exclusions

Calculate Denominator After Exclusions
Sealant Measure Calculation: Recap

**NUM:** How many received a sealant on a permanent first molar in the reporting year

**DEN:** Of dental patients, aged 6-9 years at elevated caries risk, of record in the practice in the reporting year, who needed a sealant in a permanent first molar

= Measure Score
Implementation Considerations

Within your current data systems:

- identify whether all critical data elements (procedures performed, caries risk assessment findings, etc.) for the measure are captured in a structured format
- assess extent of missing or invalid data
- ensure the measure is implemented following the specifications

Note: Your electronic record vendor can be a key partner!

Work with your clinical staff to:

- improve documentation of services/data collection
- validate resulting measure scores - i.e., do the values for the denominator, numerator and overall measure score seem correct
Implementation Resources

HRSA Uniform Data System CY 2015 Reporting Instructions for Health Centers:

Complete eMeasure Specifications - AHRQ United States Health Information Knowledgebase:

Additional questions?

Contact DQA staff at dqa@ada.org.
Other Resources:

Information on DQA: http://www.ada.org/dqa


Thank You!
Quality Improvement & the HRSA Sealant Measure

Irene V. Hilton, DDS, MPH, FACP
NNOHA Dental Consultant
Quality Improvement (QI)

- An approach to the analysis of performance and systematic efforts to improve it
- Measuring where you are, figuring out how to improve
- Data establishes “baseline” and QI process develops methods to improve from the baseline
- Creates systems to improve outcomes
Applied to Oral Health

**System**
- Use of guidelines
- Clinic flow
- Materials
- Data systems
- Staffing

**Process of Care**
- Oral cancer screening
- Risk Assessment
- Fluoride
  - Sealant
- Periodontal treatment
- Smoking cessation

**Health Outcomes**
- Cancer incidence
- Caries status
- Periodontal status
- Glycemic control
- Quality of life
- Cost
Opportunity for Improvement

The Gap

Actual

Desired

• Access to care (visit)
• **Type of service (sealant)**
• Cost (lower)
• Adverse patient event (hospital)
• Oral health outcomes (BP)
PDSA Cycle

- Shorthand for using the scientific method to test a change by planning it, trying it, observing the results, and acting on what is learned.
Repeated Use of the PDSA Cycle

Proposals, Theories, Ideas

Changes That Result in Improvement

Learning from Data
Can I use QI techniques to implement the sealant measure?

Risk Assessment
- What tool
- When to administer
- Who will administer
- How to document

Exclusions
- How to document
- Where to document

Future Reporting
- Improve structured data capture of the needed data elements electronically
- Better identification of children who are appropriately excluded from the measure
We Have Baseline Data... Now What?
Case Study

- 12 months- 500 children ages 6-9 had dental exam & 100 had sealant procedure billed
- Unknown how many needed sealants- data was not being collected
- After exclusions 250 children 6-9 had sealants treatment planned
- $100/250 = 40\%$ baseline
QI Sealant Goal

- Decided to set goal of 50% of children 6-9 that had sealants treatment planned would receive them

- **Strategies for system change?**
  - Train providers on sealant indications
  - Utilize most efficient team member to apply sealants according to State regulations
  - Sealant brochures in pediatrics waiting room
PDSA #1

- Plan
  - Train providers on sealant indications
- Do
  - Presented inservice to providers
- Study
  - After 3 months reviewed data - 40%. Tx planned but not done
- Act
  - What next?

- Usually, study of the first PDSA will lead to new challenges
- Leads to second PDSA
- OK to let challenges come up in natural order
- Be flexible
- Approach that if things go wrong, move on
Thank you!

Questions?