Pediatric Oral Health Performance Measure Set
Request for Proposal for Testing
Data Source: Administrative Data

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REQUEST FOR PROPOSALS TO ESTABLISH FEASIBILITY, RELIABILITY AND VALIDITY OF IMPLEMENTATION OF CLAIMS BASED PEDIATRIC ORAL HEALTH MEASURES DEVELOPED BY THE DENTAL QUALITY ALLIANCE

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Project Information

Project Name: Feasibility, Reliability and Validity Testing for DQA Measures

Deadline for receipt of proposals: September 1, 2012 5 PM CENTRAL TIME

Earliest Possible Award Date: Fourth quarter, 2012

Expected Completion Date: April, 2013

Project Manager and Primary Contact: Dr. Krishna Aravamudhan, Sr. Manager, Office of Quality Assessment and Improvement American Dental Association 312 440 2772 aravamudhank@ada.org

Oversight Committee: Research and Development Advisory Committee (R & D)

Executive Sponsor: Dental Quality Alliance (DQA)

Project Plan

Project Goal
Establish feasibility, reliability and validity of DQA measures using administrative data

Primary Project Objectives

- Phase I: Finalize denominator definitions (definition for enrollment interval, definition of “elevated risk”)
- Phase II: Establish feasibility, reliability and validity

Project Deliverables

- Monthly updates to R & D Committee
- Presentation of findings at next scheduled DQA meeting
- Final report of results with testing methodology

Background materials to develop proposal

- DQA Environmental Scan
- DQA Starter Set of measure concepts
- Draft technical Specifications (see attached)
- National Quality Forum (NQF) Guidance for testing methodology

Investigator / Contractor Qualifications
### Required

- Strong administrative (e.g. claims and encounters) data analysis background
- Access to recent validated Medicaid/CHIP administrative data from at least one State with different provider payment mechanisms
- Systems capability to compile and analyze large data sets

### Optional (Additional Credits)

- Access to recent Medicaid/CHIP administrative data from more than one State or an all-payer claims database
- Access to commercial claims data
- Record of Publication of similar work in peer-reviewed journals
- Ability to obtain information on total child health expenditures and total dental plan/program expenditures (i.e. administrative and care delivery)

### Guidelines for information to be included in proposals

- Name and Contact Information of principal investigator (PI)
- Biographical sketches of PI and proposed co-investigators
- Details of data sources accessible to investigators with information on validation of database
- Proposed methodology with sampling methodologies and statistical tests that will be used (not to exceed 10 page double spaced with 1” margins)
- Detailed budget (Note: a budget limit has not been provided. The proposed methodology should justify the resources being sought)
- Proposed timeline with milestones based on suggested start and end dates
- Letters of support from co-investigator’s
- Conflict of Interest declaration

### Proposal Evaluation Criteria

- Investigators (10%)
- Data Sources (15%)
- Proposed methodology (25%)
- Budget (20%)
- Timeline (10%)
- Relevant experience (20%)

### Terms
• Neither this RFP nor any responses hereto shall be considered a binding offer or agreement. If the DQA (through the ADA) and any responding Respondent decide to pursue a business relationship for any or all of the services or equipment specified in this RFP, the parties will negotiate the terms and conditions of a definitive, binding written agreement which shall be executed by the parties. Until and unless a definitive written agreement is executed, DQA shall have no obligation with respect to any Respondent in connection with this RFP.

• This RFP is not an offer to contract, but rather an invitation to a Respondent to submit a bid. Submission of a proposal or bid in response to this RFP does not obligate the DQA to award a contract to a Respondent or to any Respondent, even if all requirements stated in this RFP are met. The DQA (through the ADA) reserves the right to contract with a Respondent for reasons other than lowest price. Any final agreement between ADA (on behalf of the DQA) and Respondent will contain additional terms and conditions regarding the provision of services or equipment described in this RFP. Any final agreement shall be a written instrument executed by duly authorized representatives of the parties.

• Respondent’s RFP response shall be an offer by Respondent which may be accepted by the DQA. The pricing, terms, and conditions stated in Respondent’s response must remain valid for a period of one hundred twenty (120) days after submission of the RFP to the DQA.

• This RFP and Respondent’s response shall be deemed confidential DQA information. Any discussions that the Respondent may wish to initiate regarding this RFP should be undertaken only between the Respondent and DQA. Respondents are not to share any information gathered either in conversation or in proposals with any third parties, including but not limited to other business organizations, subsidiaries, partners or competitive companies without prior written permission from the DQA.

• The DQA reserves the right to accept or reject a Respondent’s bid or proposal to this RFP for any reason and to enter into discussions and/or negotiations with one or more qualified Respondents at the same time, if such action is in the best interest of the DQA.

• The DQA reserves the right to select a limited number of Respondents to make a “Best and Final Offer” for the services or equipment which are the subject of this RFP. Respondents selected to provide a “Best and Final Offer” shall be based on Respondent qualifications, the submitted proposal and responsiveness as determined solely by the DQA.

• All Respondent’s costs and expenses incurred in the preparation and delivery of any bids or proposals (response) in response to this RFP are Respondent’s sole responsibility.

• The DQA reserves the right to award contracts to more than one Respondent for each of the services identified in this RFP.

• All submissions by Respondents shall become the sole and exclusive property of the DQA (through the ADA) and will not be returned by the DQA or ADA to Respondents.
Research Objectives

This request for proposal (RFP) seeks testing in two phases. Phase I is necessary to provide information to allow the Research and Development (R & D) Committee to finalize two denominator definitions (i.e. definition of "enrollment interval" and "elevated risk"). Following this, Phase II will seek to test the measures for feasibility, validity and reliability.

Phase I: Finalize denominator definitions

"Enrollment Interval"

"Enrolled" children are those who have applied and have been approved to receive healthcare benefits. Four options for defining "enrolled" are commonly used (1) counting those continuously enrolled for at least 90 continuous days (CMS 416 method), (2) counting only those children continuously enrolled, but having a single break in enrollment of no more than 45 days (the HEDIS method), (3) recording the total number of children enrolled by calculating the portion of the reporting year that individuals were enrolled – the "Average Period of Enrollment/ person-time" method, and (4) all "anytime" enrolled at point during the year of record.

Investigators are requested to conduct a pilot study to analyze the following question:

- What is the impact of these four different enrollment intervals on the measurement score at the program and plan levels? (Note: This question should be answered through a small pilot for the utilization of services measure with data provided to the DQA R & D committee for consensus on denominator definitions before full testing is instituted. Analysis with data from multiple states may be most useful in determining the relative change in measurement scores based on length of enrollment.)

"Elevated" risk

Risk status is valuable for identifying individuals who are more likely to experience disease. While there is a lack of reporting of codes to capture the risk status of an individual as determined by a clinician, some data elements reported through the claims process such as past history of caries, socio-economic status, etc. have been used to categorize patients as being at elevated risk for the purposes of measurement.

Investigators are requested to analyze approaches to risk classification using one of the sealant measures. Note that any approach should be feasible with data found within current administrative data sources. The intent of this analysis is to identify a methodology that would allow identifying the group of children most at need for prevention. For example approaches such as:
1. Using past treatment e.g. restorations, endodontic procedures or other adjunctive procedures related to caries history over 3 years
2. Other determinants or combinations (e.g. Using only SES, i.e., Medicaid/ S-CHIP enrollment, SES/race/ethnicity) that have evidence to support elevated risk

**Phase II Feasibility, Reliability and Validity Testing**

Measures listed within this document should be tested to ensure feasibility, reliability and validity.

**Feasibility**

A measure will be considered feasible if the data necessary to score the measure are available in administrative databases. The final report based on feasibility assessment must provide answers to the following questions along with supporting information. The proposal shall identify the methodology used by the investigators to explore these issues.

| 1. To what extent are the data elements necessary to define numerator/denominator and exclusions readily available within one or more databases at the plan and program levels (e.g. claim/encounters and eligibility/enrollment files)? |
| 2. Are there certain data elements required to compute the numerator/denominator that are more prone to be incomplete or missing (e.g., claims/encounters and eligibility/enrollment files)? |
| 3. Are there any significant barriers encountered during data collection and measure computation? |
| 4. What were the resources required to calculate this measure set? (personnel and system resources) |
| 5. Were any significant problems encountered due to vague measure definitions and/or specifications? |

**Reliability**

Reliability is the degree to which the measure is free from random error. Reliability testing demonstrates the measure data elements are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period and/or that the measure score is precise. This allows for meaningful comparisons across states, programs, individual providers or institutional providers.

The final report based on reliability assessment must provide answers to the following questions along with supporting information. The proposal shall identify the methodology used by the investigators to explore these issues. If sampling is used, the protocol should provide data that the sampling methodology is valid and reliable.

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1. For each measure have all the data elements required to compute the numerator/denominator and exclusions been identified within the technical specifications?

2. To what extent do the exclusions due to missing or invalid data impact the measurement score? (The National Quality Forum provides additional guidance on testing for threats to validity from missing or “incorrect” data or exclusions (selection/attrition bias). Sensitivity analyses with and without the exclusion, and variability of exclusions across plans can be used to determine the impact of missing or incorrect data on the resulting measure).

**Validity**

Validity demonstrates extent to which a measure truly measures that which it is intended and designed to measure. To reduce the burden of testing the National Quality Forum allows validity to be established though expert consensus. Measurement scores obtained through the application of the final specifications must be presented to the DQA Research and Development Committee along with evidence from the literature for comparable measurements.

The final report based on validity testing should answer the following questions:

1. To what extent does the measurement score truly represent what it is intended to measure (compare with published literature)?
Pediatric Oral Health Performance Measure Set
Data Source: Administrative Data
Draft Measure Specifications

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Background

As the initial step in developing performance measures on pediatric oral health, the Dental Quality Alliance identified a starter set of measure concepts. This document details the draft measure specifications for the Starter Set based on data from administrative (claims and encounters) databases.

“Dental” and “Oral Health” Services

Within the Code of Federal Regulations, the Centers for Medicare and Medicaid Services (CMS) define “dental” services as follows:

§ 440.100 Dental services.

(a) “Dental services” means diagnostic, preventive, or corrective procedures provided by or under the supervision of a dentist in the practice of his profession, including treatment of —

(1) The teeth and associated structures of the oral cavity; and
(2) Disease, injury, or impairment that may affect the oral or general health of the recipient.

(b) “Dentist” means an individual licensed to practice dentistry or dental surgery.

This definition forms the basis of the Early and Periodic Screening, Diagnostic and Treatment (EPSDT) provisions of Medicaid statutes that requires the provision of “dental services,” to children under 21 enrolled in EPSDT. The Form CMS-416, which serves as the statutory mandated annual report on the EPSDT program has traditionally captured data on “dental services” rendered under the EPSDT program. In 2010, CMS revised the Form CMS 416 to additionally capture data on services related to the oral cavity not provided by or under the supervision of a dentist. CMS referred to these services as “oral health services” within the Form 416.

While there may be disagreement with the definitions of “dental” and “oral health” services as they are being used by CMS within Form 416, in order to avoid misinterpretation and allow for historical comparison of data, the same definitions have been adopted within this specification. Thus “dental” services refers to services provided by or under the supervision of a dentist and “oral health” services refer to services not provided by or under the supervision of a dentist. For example, as service such as fluoride varnish may be provided by a dentist and also a pediatrician. By these definitions the varnish provided by or under the supervision of the dentist constitutes a “dental service” while the same service provided by a medical provider like a pediatrician or nurse practitioner constitutes an “oral health service.”
### Measures for Single Measurement Year

<table>
<thead>
<tr>
<th>Link</th>
<th>Description</th>
<th>Numerator</th>
<th>Denominator*</th>
<th>AHRQ Domain</th>
<th>IOM Aim</th>
<th>Level of aggregation</th>
<th>Improvement noted as</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Utilization of services</strong></td>
<td>Percentage of all enrolled children who accessed [dental/oral health] services (received at least one service) within the reporting year</td>
<td>Unduplicated number of all enrolled children under age 21 years who received at least one [dental/oral health] service (DEN 2)</td>
<td>Unduplicated number of all enrolled children under age 21 years (DEN 1)</td>
<td>Related healthcare delivery: Use of Services</td>
<td>Equity</td>
<td>State, health plan, provider</td>
<td>Higher the better</td>
</tr>
<tr>
<td><strong>Oral Evaluation</strong></td>
<td>Percentage of a. all enrolled children b. enrolled children who accessed [dental/oral health] care (received at least one service) who received a comprehensive or periodic oral evaluation within the reporting year</td>
<td>Unduplicated number of all enrolled children under age 21 years who received a comprehensive or periodic oral evaluation</td>
<td>a. DEN 1 b. DEN 2</td>
<td>Clinical Quality: Access (State/health plan) Process (Provider)</td>
<td>Equity, Effectiveness</td>
<td>State, health plan, provider</td>
<td>Higher the better</td>
</tr>
<tr>
<td><strong>Prevention: Fluoride or sealants</strong></td>
<td>Percentage of a. enrolled children b. enrolled children who accessed [dental/oral health] services (received at least one service) at elevated caries risk (i.e., “moderate” or “high” risk) who received topical fluoride application and/or sealants within the reporting year.</td>
<td>Unduplicated number of all enrolled children under age 21 years who received topical fluoride application and/or sealants</td>
<td>a. DEN 1 b. DEN 2 (limited to elevated-risk)</td>
<td>Clinical Quality: Access (State/health plan) Process (Provider)</td>
<td>Equity, Effectiveness</td>
<td>State, health plan, provider</td>
<td>Higher the better</td>
</tr>
<tr>
<td><strong>Prevention: sealants for 6 – 9 years</strong></td>
<td>Percentage of a. enrolled children b. enrolled children who accessed [dental/oral health] services (received at least one service) in the age categories of 6-9 at elevated caries risk (i.e., “moderate” or “high” risk) who received a sealant on a permanent first molar tooth</td>
<td>Unduplicated number of all enrolled children age 6-9 who received a sealant on a permanent first molar tooth</td>
<td>a. DEN 1 b. DEN 2 (limited to elevated-risk 6 – 9 years)</td>
<td>Clinical Quality: Access (State/health plan) Process (Provider)</td>
<td>Equity, Effectiveness</td>
<td>State, health plan, provider</td>
<td>Higher the better</td>
</tr>
<tr>
<td>Prevention: sealants for 10 – 14 years</td>
<td>Percentage of a. enrolled children b. enrolled children who accessed [dental/ oral health] services (received at least one service) in the age categories of 10-14 at elevated caries risk (i.e., “moderate” or “high” risk) who received a sealant on a second permanent molar tooth within the reporting year.</td>
<td>Unduplicated number of all enrolled children age 10-14 who received a sealant on a permanent second molar tooth (limited to elevated-risk 10 – 14)</td>
<td>Clinical Quality: Access (State/health plan) Process (Provider)</td>
<td>Equity, Effectiveness</td>
<td>State, health plan, provider</td>
<td>Higher the better</td>
<td></td>
</tr>
<tr>
<td>Prevention: Topical Fluoride</td>
<td>Percentage of a. enrolled children b. enrolled children who accessed [dental/ oral health] services (received at least one service) at elevated caries risk (i.e., “moderate” or “high” risk) receiving at least one topical fluoride application within the reporting year.</td>
<td>Unduplicated number of all enrolled children under age 21 years who received at least one topical fluoride application (limited to elevated-risk)</td>
<td>Clinical Quality: Access (State/health plan) Process (Provider)</td>
<td>Equity, Effectiveness</td>
<td>State, health plan, provider</td>
<td>Higher the better</td>
<td></td>
</tr>
<tr>
<td>Treatment</td>
<td>Percentage of a. enrolled children b. enrolled children who accessed [dental/ oral health] services (received at least one service) who received treatment service within the reporting year.</td>
<td>Unduplicated number of all enrolled children under age 21 years who received at least one [dental/ oral health] treatment service</td>
<td>Related healthcare delivery: Use of Services</td>
<td>Equity</td>
<td>State, health plan, provider</td>
<td>Needs to be interpreted in the context of the results of the other measures.</td>
<td></td>
</tr>
</tbody>
</table>

### Measures for Multiple Measurement Years

<table>
<thead>
<tr>
<th>Description</th>
<th>Numerator</th>
<th>Denominator</th>
<th>AHRQ Domain</th>
<th>IOM Aim</th>
<th>Level of Aggregation</th>
<th>Improvement noted as</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usual source of services</td>
<td>Percentage of a. all enrolled children b. enrolled children who accessed [dental/ oral health]</td>
<td>Unduplicated number of all children under age 21 years enrolled for two</td>
<td>a. Unduplicated number of all enrolled children</td>
<td>Related healthcare delivery:</td>
<td>Equity</td>
<td>State, health plan, provider</td>
</tr>
</tbody>
</table>
services (received at least one service) each year for 2 consecutive years and received care from the same practice or clinical entity for both years. | consecutive years who received at least one [dental/ oral health] service from a practice or clinical entity with the same TIN (Tax ID Number) number for both years | under age 21 years each year for two consecutive years (DEN 3)  
(b) Unduplicated number of all enrolled children under age 21 years who received at least one dental service each year for two consecutive years (DEN 4) | Use of Services |

| Care continuity  
Regular care | Percentage of a. all enrolled children b. enrolled children who accessed [dental/ oral health] services (received at least one service) who received a comprehensive or periodic oral evaluation in the year prior to the measurement, who also received a comprehensive or periodic oral evaluation within the reporting year. | Unduplicated number of all children under age 21 years enrolled for two consecutive years who received a comprehensive or periodic oral evaluation in each year for two consecutive years  
a. DEN 3  
b. DEN 4 | Related healthcare delivery: Use of Services |

### Cost Measures

<table>
<thead>
<tr>
<th>Per enrollee/user cost of clinical services</th>
<th>Numerator</th>
<th>Denominator</th>
</tr>
</thead>
</table>
| Total amount that is paid on direct provision of care per a. enrolled child b. enrolled child who accessed [dental/ oral health] services (received at least one service) within the reporting year | Total amount paid for direct provision of [dental/ oral health] care within the reporting year | a. DEN 1  
b. DEN 2 |

<table>
<thead>
<tr>
<th>Percentage of child healthcare expenditures</th>
<th>Numerator</th>
<th>Denominator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of child health expenditures that is expended on [dental/ oral health] care for the reporting year</td>
<td>Total [dental/ oral health] program expenses for the reporting year</td>
<td>Total amount of child health expenditures for the reporting year</td>
</tr>
</tbody>
</table>
Measure 1: Utilization of Services

1a. “Dental services”
Description: Percentage of all enrolled children who accessed dental services (received at least one service) within the reporting year
Numerator: Unduplicated number of all enrolled children under age 21 years who received at least one dental service
Denominator: Unduplicated number of all enrolled children under age 21 years

1b. “Oral health services”
Description: Percentage of all enrolled children who accessed oral health services (received at least one service) within the reporting year
Numerator: Unduplicated number of all enrolled children under age 21 years who received at least one oral health service
Denominator: Unduplicated number of all enrolled children under age 21 years

1c. “Dental” OR “Oral health services”
Description: Percentage of all enrolled children who accessed dental OR oral health services (received at least one service) within the reporting year
Numerator: Unduplicated number of all enrolled children under age 21 years who received at least one dental OR oral health service
Denominator: Unduplicated number of all enrolled children under age 21 years

Exclusions:
- Undocumented aliens who are eligible only for emergency program services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their program eligibility (e.g., pregnancy-related services)

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

1. What percent of enrolled children under age 21 years received at least one service during the measurement period?
2. Does receipt of at least one service vary by any of the stratification variables?
3. Are there disparities in receipt of at least one service among those who belong to racial and ethnic minorities versus those who don’t?
4. Over time, is the percent of children who receive at least one service stable, increasing or decreasing?
5. How many patients receive services in a public health setting? (e.g. in school-based programs, community centers)

Applicable Stratification Variables

1. Age: <1; 1-2; 3-5; 6-7; 8-9; 10-11; 12-14; 15-18; 19-20
2. Funding source (e.g. Medicaid; CHIP programs; private commercial benefit programs).
3. Provider payment mechanism: e.g. Fee-for-service, PPO or discounted fee-for-service, Capitation plan, Encounter fee plus used in FQHCs
4. Geographic location
5. Race/Ethnicity
6. Socioeconomic status
7. Length of enrollment (Note: This variable may be applied as enrollment in the same plan or enrollment in any plan. E.g. at the state level a criteria of “any” plan may be used versus at the MCO level a criteria of “same” plan might apply. The criterion used should be reported with the measurement score.)
8. Service location e.g., private dental office, community clinic or health center, operating room, dental school clinic, school-based dental clinic

Measure Limitations:

- This measure does not capture services provided in the Operatory Room (OR) and billed using CPT codes.
Utilization of Services Calculation

1. Run records for one measurement year\(^6\) (Limit records by provider taxonomy depending on whether measure being computed is for “dental” vs. “oral health” vs. “dental or oral health” situations.

2. Check if the subject is under the age of 21 years
   a. If age > or = 21 years at start of measurement year then exclude. Stop processing
   b. If invalid BIRTH-DATE then exclude. Stop processing
   c. If age < 21 then proceed to next step.

3. Check if subject is eligible for inclusion within the measurement population
   a. TBD
   b. If not eligible for inclusion, exclude. STOP processing.
   c. If eligible for inclusion proceed to next step.

4. Check if subject received any dental service
   a. If SERVICE-CODE = D0100 – D9999\(^7\), then include into numerator of those who received dental service (NUM). Case will also be included in denominator (DEN). Stop processing
   b. If missing or invalid field code or no SERVICE-CODE (HCPCS/CDT) code was provided, then include in denominator (DEN). Stop processing.

5. Report
   a. Unduplicated number of total cases
   b. Unduplicated numerator
   c. Unduplicated denominator(s)
   d. Unduplicated exclusions

\(^6\) Medicaid/CHIP programs may want to apply these overall exclusions before the case finding process:
- Undocumented aliens who are eligible only for emergency Medicaid services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their Medicaid eligibility (e.g., pregnancy-related services)

\(^7\) In some instances, CPT codes are used for reimbursement of oral health services e.g. medical primary care providers providing oral evaluation, risk assessment, anticipatory guidance or fluoride varnish. As of 2011 data, Florida, Texas and Utah use CPT codes <AAP Table> For such states these additional codes must be considered.
Measure 2: Oral Evaluation

2a. “Dental services”
Description: Percentage of a. all enrolled children b. enrolled children who accessed dental service (received at least one service) who received a comprehensive or periodic oral evaluation within the reporting year
Numerator: Unduplicated number of all enrolled children under age 21 years who received a comprehensive or periodic oral evaluation
Denominator:
DEN 1: Unduplicated number of all enrolled children under age 21 years
DEN 2: Unduplicated number of all enrolled children under age 21 years who received at least one dental service

2b. “Oral health services”
Description: Percentage of a. all enrolled children b. enrolled children who accessed oral health service (received at least one service) who received a comprehensive or periodic oral evaluation within the reporting year
Numerator: Unduplicated number of all enrolled children under age 21 years who received a comprehensive or periodic oral evaluation
Denominator:
DEN 1: Unduplicated number of all enrolled children under age 21 years
DEN 2: Unduplicated number of all enrolled children under age 21 years who received at least one oral health service

2c. “Dental” OR “Oral health” services
Description: Percentage of a. all enrolled children b. enrolled children who accessed dental OR oral health service (received at least one service) who received a comprehensive or periodic oral evaluation within the reporting year
Numerator: Unduplicated number of all enrolled children under age 21 years who received a comprehensive or periodic oral evaluation
Denominator:
DEN 1: Unduplicated number of all enrolled children under age 21 years
DEN 2: Unduplicated number of all enrolled children under age 21 years who received at least one dental OR oral health service

Exclusions:
- Undocumented aliens who are eligible only for emergency program services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their program eligibility (e.g., pregnancy-related services)

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

1. What percent of children under age 21 years receive a comprehensive or periodic oral evaluation during the measurement period?
2. Does percent of children who receive oral evaluation vary by any of the stratification variables?
3. Are there disparities in receipt of oral evaluation among those who belong to racial and ethnic minorities versus those who don’t?
4. Over time, is the percentage of children receiving comprehensive or periodic evaluation stable, increasing or decreasing?
5. How many patients receive topical fluoride or sealants in a public health setting? (e.g. in school-based programs, community centers)
Applicable Stratification Variables

1. Age: <1; 1-2; 3-5; 6-7; 8-9; 10-11; 12-14; 15-18; 19-20
2. Funding source (e.g. Medicaid; CHIP programs; private commercial benefit programs).
3. Provider payment mechanism: e.g., Fee-for-service, PPO or discounted fee-for-service, Capitation plan, Encounter fee plus used in FQHCs
4. Geographic location
5. Race/Ethnicity
6. Socioeconomic status
7. Length of enrollment (Note: This variable may be applied as enrollment in the same plan or enrollment in any plan. E.g. at the state level a criteria of “any” plan may be used versus at the MCO level a criteria of “same” plan might apply. The criterion used should be reported with the measurement score.)
8. Service location e.g., private dental office, community clinic or health center, dental school clinic, school-based dental clinic
Oral Evaluation Calculation

1. Run records for one measurement year\(^8\) (Limit records by provider taxonomy depending on whether measure being computed is for "dental" vs. "oral health" vs. "dental or oral health" situations).

2. Check if the subject is under 21 years
   a. If age > or = 21 years at start of measurement year then exclude. Stop processing
   b. If missing or invalid BIRTH-DATE then exclude. Stop processing
   c. If age < 21 then proceed to next step.

3. Check if the subject is eligible for the measurement population
   a. TBD
   b. If not eligible for inclusion, exclude. STOP processing.
   c. If eligible for inclusion proceed to next step.

4. Check if subject received any dental service
   a. If missing or invalid [SERVICE-CODE] (HCPCS/CDT) code or no dental service was provided, then include in denominator of all enrollees (DEN 1). Stop processing.
   b. If [SERVICE-CODE] = D0100 – D9999, proceed to the next step

5. Check if subject received comprehensive or periodic oral evaluation
   a. If [SERVICE-CODE] is not D0120 or D0150 or D0145 then include in denominator for those who received dental service (DEN 2). Case will also be included in denominator of all enrollees (DEN 1). Stop processing.
   b. If [SERVICE-CODE] is = D0120 or D0150 or D0145 then include in numerator of those who received comprehensive or periodic oral evaluation (NUM). Case will also be included in DEN 2 and DEN 1. Stop processing.

6. Report
   a. Unduplicated number of total cases
   b. Unduplicated numerator
   c. Unduplicated denominator(s)
   d. Unduplicated exclusions

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\(^8\) Medicaid/ CHIP programs may want to apply these overall exclusions before the case finding process:
- Undocumented aliens who are eligible only for emergency Medicaid services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their Medicaid eligibility (e.g., pregnancy-related services)

\(^9\) In some instances, CPT codes are used for reimbursement of oral health services e.g. medical primary care providers providing oral evaluation, risk assessment, anticipatory guidance or fluoride varnish. As of 2011 data, Florida, Texas and Utah use CPT codes <AAP Table> For such states these additional codes must be considered.
Measure 3: Prevention: Topical Fluoride or Sealants

3a. “Dental services”
Description: Percentage of a. enrolled children b. enrolled children who accessed dental service (received at least one service) at “elevated” risk (e.g. “moderate” or “high”) who received topical fluoride application and/or sealants within the reporting year.
Numerator: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”) who received topical fluoride application and/or sealants
Denominator:
DEN 1: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”)
DEN 2: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”) who received at least one dental service

3b. “Oral health services”
Description: Percentage of a. enrolled children b. enrolled children who accessed oral health service (received at least one service) at “elevated” risk (e.g. “moderate” or “high”) who received topical fluoride application and/or sealants within the reporting year.
Numerator: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”) who received topical fluoride application and/or sealants
Denominator:
DEN 1: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”)
DEN 2: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”) who received at least one oral health service

3c. “Dental” OR “Oral health” service
Description: Percentage of a. enrolled children b. enrolled children who accessed dental or oral health service (received at least one service) at “elevated” risk (e.g. “moderate” or “high”) who received topical fluoride application and/or sealants within the reporting year.
Numerator: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”) who received topical fluoride application and/or sealants
Denominator:
DEN 1: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”)
DEN 2: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”) who received at least one dental or oral health service

Exclusions:
- Undocumented aliens who are eligible only for emergency program services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their program eligibility (e.g., pregnancy-related services)

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

1. What percent of children under age 21 years receive any topical fluoride or sealants?
2. Does the percent of children who receive any topical fluoride or sealants vary by any stratification variable?
3. Are there disparities in receipt of topical fluoride or sealants among those who belong to racial and ethnic minorities versus those who don’t?
4. Over time, is the percent of children who receive topical fluoride or sealants stable, increasing or decreasing?
5. How many patients receive topical fluoride or sealants in a public health setting? (e.g. in school-based programs, community centers)
Applicable Stratification Variables

1. Age: <1; 1-2; 3-5; 6-7; 8-9; 10-11; 12-14; 15-18; 19-20
2. Funding source (e.g. Medicaid; CHIP programs; private commercial benefit programs).
3. Provider payment mechanism: e.g. Fee-for-service, PPO or discounted fee-for-service, Capitation plan, Encounter fee plus used in FQHCs
4. Geographic location
5. Race/Ethnicity
6. Socioeconomic status
7. Length of enrollment (Note: This variable may be applied as enrollment in the same plan or enrollment in any plan. E.g. at the state level a criteria of “any” plan may be used versus at the MCO level a criteria of “same” plan might apply. The criterion used should be reported with the measurement score.)
8. Service location e.g., private dental office, community clinic or health center, dental school clinic, school-based dental clinic

Measure Limitations:

- *CDT codes do not distinguish between fluoride gel and fluoride foam. Moreover the code for topical fluoride (D1203) is often used to report use of fluoride varnish although a specific code exists (CDT 1206). Compared to other modalities, varnish has the most evidence for effectiveness in reducing incidence of caries. This measure assumes that the topical fluoride applied professionally is by using a varnish.*

- *Evidence-based clinical recommendations call for application of topical fluoride at least every 6 months. In future as more children receive at least an annual topical fluoride application, the measure can be improved to measure bi-annual utilization.*

- *Will not delineate those whose teeth have not erupted and those who already received sealants in the past years and those with decayed/filled teeth not candidates for sealants.*
Topical Fluoride/ Sealants Calculation

1. Run records for one measurement year\(^\text{10}\) (Limit records by provider taxonomy depending on whether measure being computed is for “dental” vs. “oral health” vs. “dental or oral health” situations.

2. Check if the subject is under 21 years
   a. If age > or = 21 years at start of measurement year then exclude. Stop processing
   b. If invalid BIRTH-DATE then exclude. Stop processing
   c. If age < 21 then proceed to next step.

3. Check if the subject is eligible for the measurement population
   a. TBD
   b. If not eligible for inclusion, exclude. STOP processing.
   c. If eligible for inclusion proceed to next step.

4. Check if the subject is at elevated risk
   a. TBD
   b. If not at elevated risk or field codes are missing or invalid, exclude. Stop processing.
   c. If at elevated risk then proceed to next step.

5. Check if subject received any dental service
   a. If invalid or missing [SERVICE-CODE] (HCPCS/CDT) code or no dental service was provided, then include in denominator of all enrollees (DEN 1). Stop processing.
   b. If [SERVICE-CODE] = D0100 – D9999\(^\text{11}\), proceed to the next step

6. Check if subject received topical fluoride or sealants
   a. If [SERVICE-CODE] is not D1203 or D1206 or D1351 then include in denominator of those who received dental service (DEN 2). Case will also be included in DEN1. Stop processing.
   b. If [SERVICE-CODE] is = D1203 or D1206 or D1351 then include in numerator of elevated risk children who received topical fluoride or sealants (NUM). Case will also be included in DEN 1 and DEN 2. Stop processing.

7. Report
   a. Unduplicated number of total cases
   b. Unduplicated numerator
   c. Unduplicated denominator(s)
   d. Unduplicated exclusions

\(^{10}\) Medicaid/CHIP programs may want to apply these overall exclusions before the case finding process:
   - Undocumented aliens who are eligible only for emergency Medicaid services;
   - Other groups of individuals under age 21 who are eligible only for limited services as part of their Medicaid eligibility (e.g., pregnancy-related services)

\(^{11}\) In some instances, CPT codes are used for reimbursement for oral health services e.g. medical primary care providers providing oral evaluation, risk assessment, anticipatory guidance or fluoride varnish. As of 2011 data, Florida, Texas and Utah use CPT codes \(<AAP Table>\). For such states these additional codes must be considered.
Run records for measurement year

Age ≥ 21 at start of measurement year

No/ Missing or invalid field codes

Excluded

No/ Missing or invalid field codes

TBD

Elevated risk?

Yes

Service code = D0100 – D9999

Yes

Service code = D1351 or D1206 or D1203

Yes

NUM

Include in Numerator: < 21 yr elevated risk enrollees who received fluoride or sealants

No/ Missing or invalid field codes

DEN 2

Include in Denominator 2: <21 yr elevated risk enrollees who received any service

No/ Missing or invalid field codes

DEN 1

Include in Denominator 1: all <21 yr elevated risk enrollees

STOP

Fig 3: Prevention: Fluoride or Sealants
Measure 4: Prevention: Sealants for 6-9 years

4a. “Dental” services
Description: Percentage of a. enrolled children b. enrolled children who accessed dental service (received at least one service) in the age categories of 6-9 at “elevated” risk (e.g. “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 at “elevated” risk (e.g. “moderate” or “high”) who received a sealant on a permanent first molar tooth
Denominator:
DEN 1: Unduplicated number of all enrolled children age 6 - 9 years at “elevated” risk (e.g. “moderate” or “high”)
DEN 2: Unduplicated number of all enrolled children age 6 - 9 years at “elevated” risk (e.g. “moderate” or “high”) who received at least one dental service

4b. “Oral health” services
Description: Percentage of a. enrolled children b. enrolled children who accessed oral health services (received at least one service) in the age categories of 6-9 at “elevated” risk (e.g. “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 at “elevated” risk (e.g. “moderate” or “high”) who received a sealant on a permanent first molar tooth
Denominator:
DEN 1: Unduplicated number of all enrolled children age 6 - 9 years at “elevated” risk (e.g. “moderate” or “high”)
DEN 2: Unduplicated number of all enrolled children age 6 - 9 years at “elevated” risk (e.g. “moderate” or “high”) who received at least one oral health service

4c. “Dental” or “Oral health” services
Description: Percentage of a. enrolled children b. enrolled children who accessed dental or oral health services (received at least one service) in the age categories of 6-9 at “elevated” risk (e.g. “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 at “elevated” risk (e.g. “moderate” or “high”) who received a sealant on a permanent first molar tooth
Denominator:
DEN 1: Unduplicated number of all enrolled children age 6 - 9 years at “elevated” risk (e.g. “moderate” or “high”)
DEN 2: Unduplicated number of all enrolled children age 6 - 9 years at “elevated” risk (e.g. “moderate” or “high”) who received at least one dental or oral health service

Exclusions:
- Undocumented aliens who are eligible only for emergency program services;
- Other groups of individuals between 6 – 9 years who are eligible only for limited services as part of their program eligibility (e.g., pregnancy-related services)

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

1. What percent of children between ages 6-9 years received sealants?
2. Does the percent of children who receive sealants vary by any of the stratification variables?
3. Are there disparities in use of sealants among those who belong to racial and ethnic minorities versus those who don’t?
4. Over time, is the level of sealant use stable, increasing or decreasing?
5. How many patients receive sealants in a public health setting? (e.g. in school-based programs, community centers)
Applicable Stratification Variables

1. Age: 6-7; 8-9
2. Funding source (e.g. Medicaid; CHIP programs; private commercial benefit programs).
3. Provider payment mechanism: e.g. Fee-for-service, PPO or discounted fee-for-service, Capitation plan, Encounter fee plus used in FQHCs
4. Geographic location
5. Race/Ethnicity
6. Socioeconomic status
7. Length of enrollment (Note: This variable may be applied as enrollment in the same plan or enrollment in any plan. E.g. at the state level a criteria of “any” plan may be used versus at the MCO level a criteria of “same” plan might apply. The criterion used should be reported with the measurement score.)
8. Service location e.g., private dental office, community clinic or health center, dental school clinic, school-based dental clinic

Measure Limitations

- Will not delineate those whose teeth have not erupted and those who already received sealants in the past years and those with decayed/filled teeth not candidates for sealants.
- To be included in this measure, children must have turned 6 years of age on the start date of measurement. E.g. if measurements are computed for a calendar year, children should have turned 6 by January 1. Children who might turn 6 i.e. have birth days soon after January 1 and are 6 for most of the year will still not be included within this measure.
- This measure will not capture children under 6 years of age whose teeth erupted and they have received sealants.
6-9 years Sealants Calculation

1. Run records for one measurement year\(^{12}\)(Limit records by provider taxonomy depending on whether measure being computed is for "dental" vs. "oral health" vs. "dental or oral health" situations.

2. Check if the subject is between 6 - 9 years
   a. If age < 6 OR > 9 years at start of measurement year then exclude. Stop processing
   b. If invalid [BIRTH-DATE] then exclude. Stop processing
   c. If age > or = 6 AND <= 9 then proceed to next step.

3. Check if the subject is eligible for the measurement population
   a. TBD
   b. If not eligible for inclusion, exclude. STOP processing.
   c. If eligible for inclusion proceed to next step.

4. Check if the subject is at elevated risk
   a. TBD
   b. If not at elevated risk or field codes are missing or invalid, exclude. Stop processing.
   c. If at elevated risk then proceed to next step.

5. Check if subject received any dental service
   a. If missing or invalid [SERVICE-CODE] (HCPCS/CDT) code or no service was provided, then include in denominator of all enrollees (DEN 1). Stop processing.
   b. If [SERVICE-CODE] = D0100 – D9999\(^{13}\), proceed to the next step

6. Check if subject received sealants
   a. If [SERVICE-CODE] is not D1351 then include in denominator of those who received care (DEN 2). Case will also be included in DEN 1. Stop processing.
   b. If [SERVICE-CODE] is = D1351 then proceed to next step.

7. Check if sealant is on first permanent molar
   a. If missing or invalid [TOOTH-NUMBER] or [TOOTH-NUMBER] is not 3 or 14 or 19 or 30 include in DEN 2. Case will also be included in DEN 1. Stop processing.
   b. If [TOOTH-NUMBER] = 3 or 14 or 19 or 30 then include in numerator of elevated risk of 6 – 9 year children who received sealants (NUM). Case will also be included in DEN 1 and DEN 2. Stop processing.

8. Report
   a. Unduplicated number of total cases
   b. Unduplicated numerator
   c. Unduplicated denominator(s)
   d. Unduplicated exclusions

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\(^{12}\) Medicaid/CHIP programs may want to apply these overall exclusions before the case finding process:
- Undocumented aliens who are eligible only for emergency Medicaid services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their Medicaid eligibility (e.g., pregnancy-related services)

\(^{13}\) In some instances, CPT codes are used for reimbursement for oral health services e.g. medical primary care providers providing oral evaluation, risk assessment, anticipatory guidance or fluoride varnish. As of 2011 data, Florida, Texas and Utah use CPT codes <AAP Table> For such states these additional codes must be considered.
Fig 4: Sealants for 6 – 9 years
Measure 5: Prevention: Sealants for 10 – 14 years

5a. “Dental” services
Description: Percentage of a. enrolled children b. enrolled children who accessed dental service (received at least one service) in the age categories of 10-14 at “elevated” risk (e.g. “moderate” or “high”) who received a sealant on a permanent second molar tooth within the reporting year.
Numerator: Unduplicated number of all enrolled children age 10-14 years at “elevated” risk (e.g. “moderate” or “high”) who received a sealant on a permanent second molar tooth
Denominator:
DEN 1: Unduplicated number of all enrolled children age 10 - 14 years at “elevated” risk (e.g. “moderate” or “high”)
DEN 2: Unduplicated number of all enrolled children age 10 - 14 years at “elevated” risk (e.g. “moderate” or “high”) who received at least one dental service

5b. “Oral health” services
Description: Percentage of a. enrolled children b. enrolled children who accessed oral health service (received at least one service) in the age categories of 10-14 at “elevated” risk (e.g. “moderate” or “high”) who received a sealant on a permanent second molar tooth within the reporting year.
Numerator: Unduplicated number of all enrolled children age 10-14 years at “elevated” risk (e.g. “moderate” or “high”) who received a sealant on a permanent second molar tooth
Denominator:
DEN 1: Unduplicated number of all enrolled children age 10 - 14 years at “elevated” risk (e.g. “moderate” or “high”)
DEN 2: Unduplicated number of all enrolled children age 10 - 14 years at “elevated” risk (e.g. “moderate” or “high”) who received at least one oral health service

5c. “Dental” or “Oral health” services
Description: Percentage of a. enrolled children b. enrolled children who accessed dental or oral health service (received at least one service) in the age categories of 10-14 at “elevated” risk (e.g. “moderate” or “high”) who received a sealant on a permanent second molar tooth within the reporting year.
Numerator: Unduplicated number of all enrolled children age 10-14 years at “elevated” risk (e.g. “moderate” or “high”) who received a sealant on a permanent second molar tooth
Denominator:
DEN 1: Unduplicated number of all enrolled children age 10 - 14 years at “elevated” risk (e.g. “moderate” or “high”)
DEN 2: Unduplicated number of all enrolled children age 10 - 14 years at “elevated” risk (e.g. “moderate” or “high”) who received at least one dental or oral health service

Exclusions:
- Undocumented aliens who are eligible only for emergency program services;
- Other groups of individuals between 10 -14 who are eligible only for limited services as part of their program eligibility (e.g., pregnancy-related services)

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

1. What percent of children between ages 10-14 years receive sealants?
2. Does the percent of children who receive sealants vary by any of the stratification variables?
3. Are there disparities in use of sealants among those who belong to racial and ethnic minorities versus those who don’t?
4. Over time, is the level of sealant use stable, increasing or decreasing?
5. How many patients receive sealants in a public health setting? (e.g. in school-based programs, community centers)

Applicable Stratification Variables

1. Age: 10-11; 12-14
2. Funding source (e.g. Medicaid; CHIP programs; private commercial benefit programs).
3. Provider payment mechanism: e.g. Fee-for-service, PPO or discounted fee-for-service, Capitation plan, Encounter fee plus used in FQHCs
4. Geographic location
5. Race/Ethnicity
6. Socioeconomic status
7. Length of enrollment (Note: This variable may be applied as enrollment in the same plan or enrollment in any plan. E.g. at the state level a criteria of “any” plan may be used versus at the MCO level a criteria of “same” plan might apply. The criterion used should be reported with the measurement score.)
8. Service location e.g., private dental office, community clinic or health center, dental school clinic, school-based dental clinic

Measure Limitations

- Will not delineate those whose teeth have not erupted and those who already received sealants in the past years and those with decayed/filled teeth not candidates for sealants.
- To be included in this measure, children must have turned 10 years of age on the start date of measurement. E.g. if measurements are computed for a calendar year, children should have turned 6 by January 1. Children who might turn 10 i.e. have birth days soon after January 1 and are 10 for most of the year will still not be included within this measure.
- This measure will not capture children under 10 years of age whose teeth erupted and they have received sealants.
10 – 14 years Sealants Calculation

1. Run records for one measurement year\(^{14}\) (Limit records by provider taxonomy depending on whether measure being computed is for "dental" vs. "oral health" vs. "dental or oral health" situations.

2. Check if the subject is between 10 - 14 years
   a. If age < 10 OR > 14 years at start of measurement year then exclude. Stop processing.
   b. If invalid [BIRTH-DATE] then exclude. Stop processing.
   c. If age > or = 10 AND <= 14 then proceed to next step.

3. Check if the subject is eligible for the measurement population
   a. TBD
   b. If not eligible for inclusion, exclude. STOP processing.
   c. If eligible for inclusion proceed to next step.

4. Check if the subject is at elevated risk
   a. TBD
   b. If not at elevated risk or field codes are missing or invalid, exclude. Stop processing.
   c. If at elevated risk then proceed to next step.

5. Check if subject received any dental service
   a. If missing or invalid [SERVICE-CODE] (HCPCS/CDT) code or no service was provided, then include in denominator of all enrollees (DEN 1). Stop processing.
   b. If [SERVICE-CODE] = D0100 – D9999\(^{15}\), proceed to the next step.

6. Check if subject received sealants
   a. If [SERVICE-CODE] is not D1351 then include in denominator of those who received care (DEN 2). Case will also be included in DEN1. Stop processing.
   b. If [SERVICE-CODE] is = D1351 then proceed to next step.

7. Check if sealant is on second permanent molar
   a. If missing or invalid [TOOTH-NUMBER] or [TOOTH-NUMBER] is not 2 or 15 or 18 or 31 include in DEN 2. Case will also be included in DEN 1. Stop processing.
   b. If [TOOTH-NUMBER] = 2 or 15 or 18 or 31 then include in numerator of elevated risk of 10 – 14 year children who received sealants (NUM). Case will also be included in DEN 1 and DEN 2. Stop processing.

8. Report
   a. Unduplicated number of total cases
   b. Unduplicated numerator
   c. Unduplicated denominator(s)
   d. Unduplicated exclusions

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\(^{14}\) Medicaid/CHIP programs may want to apply these overall exclusions before the case finding process:
- Undocumented aliens who are eligible only for emergency Medicaid services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their Medicaid eligibility (e.g., pregnancy-related services)

\(^{15}\) In some instances, CPT codes are used for reimbursement for oral health services e.g. medical primary care providers providing oral evaluation, risk assessment, anticipatory guidance or fluoride varnish. As of 2011 data, Florida, Texas and Utah use CPT codes <AAP Table> For such states these additional codes must be considered.
Run records for measurement year

Excluded

NoMissing or Invalid field codes

Age > 10

AMD = 14, test of start of measurement

No

Yes

TBD

NoMissing or Invalid field codes

Excluded

TBD

Service code = 019900-019999

Yes

No

Service code = 019351

Yes

No

Trich number >= 2, 15, 18 or 21

NUM

Include in Numerator: 10-14yr elevated risk enrollees with sealants in permanent second molar

Include in Denominator 2: 10-14yr elevated risk enrollees who received any service

DEN 2

NoMissing or Invalid field codes

Include in Denominator 3: all 10-14yr elevated risk enrollees

DEN 1

STOP

Fig 5: Sealants for 10-14 years
Measure 6: Prevention: Topical Fluoride

6a. “Dental” services
Description: Percentage of a. enrolled children b. enrolled children who accessed dental service (received at least one service) at “elevated” risk (e.g. “moderate” or “high”) receiving at least one topical fluoride application within the reporting year
Numerator: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”) who received at least one topical fluoride application
Denominator:
DEN 1: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”)
DEN 2: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”) who received at least one dental service

6b. “Oral health services
Description: Percentage of a. enrolled children b. enrolled children who accessed oral health service (received at least one service) at “elevated” risk (e.g. “moderate” or “high”) receiving at least one topical fluoride application within the reporting year
Numerator: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”) who received at least one topical fluoride application
Denominator:
DEN 1: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”)
DEN 2: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”) who received at least one oral health service

6c. “Dental” or “Oral health” service
Description: Percentage of a. enrolled children b. enrolled children who accessed dental or oral health service (received at least one service) at “elevated” risk (e.g. “moderate” or “high”) receiving at least one topical fluoride application within the reporting year
Numerator: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”) who received at least one topical fluoride application
Denominator:
DEN 1: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”)
DEN 2: Unduplicated number of all enrolled children under age 21 years at “elevated” risk (e.g. “moderate” or “high”) who received at least one dental or oral health service

Exclusions:
- Undocumented aliens who are eligible only for emergency program services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their program eligibility (e.g., pregnancy-related services)

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

1. What percent of children under 21 years receive professionally applied topical fluoride at least once an year?
2. Does the receipt of professionally applied topical fluoride vary by any of the stratification variables?
3. Are there disparities in receipt of professionally applied topical fluoride among those who belong to racial and ethnic minorities versus those who don’t?
4. Over time, is the level of receipt professionally applied topical fluoride stable, increasing or decreasing?
5. How many patients receive professionally applied topical fluoride in a public health setting? (e.g. in school-based programs, community centers)

**Applicable Stratification Variables**

1. Age: <1; 1-2; 3-5; 6-7; 8-9; 10-11; 12-14; 15-18; 19-20
2. Funding source (e.g. Medicaid; CHIP programs; private commercial benefit programs).
3. Provider payment mechanism: e.g. Fee-for-service, PPO or discounted fee-for-service, Capitation plan, Encounter fee plus used in FQHCs
4. Geographic location
5. Race/Ethnicity
6. Socioeconomic status
7. Length of enrollment (Note: This variable may be applied as enrollment in the same plan or enrollment in any plan. E.g. at the state level a criteria of “any” plan may be used versus at the MCO level a criteria of “same” plan might apply. The criterion used should be reported with the measurement score.)
   Service location e.g., private dental office, community clinic or health center, dental school clinic, school-based dental clinic

**Measure Limitations:**

- **CDT codes do not distinguish between fluoride gel and fluoride foam. Moreover the code for topical fluoride (D1203) is often used to report use of fluoride varnish although a specific code exists (CDT 1206). Compared to other modalities, varnish has the most evidence for effectiveness in reducing the incidence of caries. This measure assumes that the topical fluoride applied professionally is by using a varnish**

- **Evidence-based clinical recommendations call for application of topical fluoride at least every 6 months. In future as more children receive at least an annual topical fluoride application, the measure can be improved to measure bi-annual utilization.**
Topical Fluoride Calculation

1. Run records for one measurement year\(^\text{16}\) (Limit records by provider taxonomy depending on whether measure being computed is for "dental" vs. "oral health" vs. "dental or oral health" situations.

2. Check if the subject is under 21 years
   a. If age \(\geq\) 21 years at start of measurement year then exclude. Stop processing
   b. If invalid BIRTH-DATE then exclude. Stop processing
   c. If age < 21 then proceed to next step.

3. Check if subject is eligible for the measurement population
   a. See Measure 1
   b. If not eligible for inclusion, exclude. STOP processing.
   c. If eligible for inclusion proceed to next step.

4. Check if the subject is at elevated risk
   a. TBD
   b. If not at elevated risk or field codes are missing or invalid, exclude. Stop processing.
   c. If at elevated risk then proceed to next step.

5. Check if subject received any dental service
   a. If missing or invalid [SERVICE-CODE] (HCPCS/CDT) code or no dental service was provided, then include in denominator of all enrollees (DEN 1). Stop processing.
   b. If [SERVICE-CODE] = D0100 – D9999\(^\text{17}\), proceed to the next step

6. Check if subject received topical fluoride
   a. If [SERVICE-CODE] is not D1203 or D1206 then include in denominator of those who received dental service (DEN 2). Case will also be included in DEN1. Stop processing.
   b. If [SERVICE-CODE] is = D1203 or D1206 then include in numerator of elevated risk children who received topical fluoride (NUM). Case will also be included in DEN 1 and DEN 2. Stop processing.

7. Report
   a. Unduplicated number of total cases
   b. Unduplicated numerator
   c. Unduplicated denominator(s)
   d. Unduplicated exclusions

\(^{16}\) Medicaid/CHIP programs may want to apply these overall exclusions before the case finding process:
- Undocumented aliens who are eligible only for emergency Medicaid services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their Medicaid eligibility (e.g., pregnancy-related services)

\(^{17}\) In some instances, CPT codes are used for reimbursement oral health services e.g. medical primary care providers providing oral evaluation, risk assessment, anticipatory guidance or fluoride varnish. As of 2011 data, Florida, Texas and Utah use CPT codes \(<AAP Table>\) For such states these additional codes must be considered.
Fig 6: Topical fluoride
Measure 7: Treatment

7a. “Dental” services

**Description:** Percentage of a. enrolled children b. enrolled children who accessed dental service (received at least one service) who received dental treatment service within the reporting year.

**Numerator:** Unduplicated number of all enrolled children under age 21 years who received at least one dental treatment service

**Denominator:**
- DEN 1: Unduplicated number of all enrolled children under age 21 years
- DEN 2: Unduplicated number of all enrolled children under age 21 years who received at least one dental service

7b. “Oral health” services

**Description:** Percentage of a. enrolled children b. enrolled children who accessed oral health service (received at least one service) who received oral health treatment service within the reporting year.

**Numerator:** Unduplicated number of all enrolled children under age 21 years who received at least one oral health treatment service

**Denominator:**
- DEN 1: Unduplicated number of all enrolled children under age 21 years
- DEN 2: Unduplicated number of all enrolled children under age 21 years who received at least one oral health service

7c. “Dental” or “Oral health” service

**Description:** Percentage of a. enrolled children b. enrolled children who accessed dental or oral health service (received at least one service) who received dental or oral health treatment service within the reporting year.

**Numerator:** Unduplicated number of all enrolled children under age 21 years who received at least one dental or oral health treatment service

**Denominator:**
- DEN 1: Unduplicated number of all enrolled children under age 21 years
- DEN 2: Unduplicated number of all enrolled children under age 21 years who received at least one dental or oral health service

Exclusions:
- Undocumented aliens who are eligible only for emergency program services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their program eligibility (e.g., pregnancy-related services)

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

1. What is the utilization of treatment services for children between under age 21 years?
2. Does the use of treatment services vary by any of the stratification variables?
3. Are there disparities in use of treatment services among those who belong to racial and ethnic minorities versus those who don’t?
4. Over time, is the level of utilization of treatment services stable, increasing or decreasing?
5. Does the use of treatment services increase with age?
6. In which age group does the use of treatment services spike?
7. Did those who received treatment also receive prevention prior to or following treatment?

Applicable Stratification Variables

1. Age: <1; 1-2; 3-5; 6-7; 8-9; 10-11; 12-14; 15-18; 19-20
2. Funding source (e.g. Medicaid; CHIP programs; private commercial benefit programs).
3. Provider payment mechanism: e.g. Fee-for-service, PPO or discounted fee-for-service, Capitation plan, Encounter fee plus used in FQHCs
4. Geographic location
5. Race/Ethnicity
6. Socioeconomic status
7. Length of enrollment (Note: This variable may be applied as enrollment in the same plan or enrollment in any plan. E.g. at the state level a criteria of “any” plan may be used versus at the MCO level a criteria of “same” plan might apply. The criterion used should be reported with the measurement score.)
8. Service location e.g., private dental office, community clinic or health center, dental school clinic, school-based dental clinic
Treatment Calculation

1. Run records for one measurement year\(^{18}\) (Limit records by provider taxonomy depending on whether measure being computed is for "dental" vs. "oral health" vs. "dental or oral health" situations.

2. Check if the subject is under age 21 years
   a. If age \(>\) or \(=\) 21 years at start of measurement year then exclude. Stop processing
   b. If invalid BIRTH-DATE then exclude. Stop processing
   c. If age \(<\) 21 then proceed to next step.

3. Check if the subject is eligible for the measurement population
   a. TBD
   b. If not eligible for inclusion, exclude. STOP processing.
   c. If eligible for inclusion proceed to next step.

4. Check if subject received any dental service
   a. If missing or invalid [SERVICE-CODE] (HCPCS/CDT) code or no dental service was provided, then include in denominator of all enrollees (DEN 1). Stop processing.
   b. If [SERVICE-CODE] = D0100 – D9999\(^{19}\), proceed to the next step

5. Check if subject received treatment service
   a. If [SERVICE-CODE] is not D2000 – D9999 then include in denominator for those who received dental service (DEN 2). Case will also be included in denominator of all enrollees (DEN 1). Stop processing.
   b. If [SERVICE-CODE] is = D2000 – D9999 then include in numerator of those who received treatment service

6. Report
   a. Unduplicated number of total cases
   b. Unduplicated numerator
   c. Unduplicated denominator(s)
   d. Unduplicated exclusions

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\(^{18}\) Medicaid/CHIP programs may want to apply these overall exclusions before the case finding process:
- Undocumented aliens who are eligible only for emergency Medicaid services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their Medicaid eligibility (e.g., pregnancy-related services)

\(^{19}\) In some instances, CPT codes are used for reimbursement for oral health services e.g. medical primary care providers providing oral evaluation, risk assessment, anticipatory guidance or fluoride varnish. As of 2011 data, Florida, Texas and Utah use CPT codes <AAP Table> For such states these additional codes must be considered.
Run records for measurement year

Age < 21 at start of measurement year

No/ Missing or invalid field codes

Excluded

Eligible for inclusion? TBD

No/ Missing or invalid field codes

Service code = D0100 – D9999

Yes

Numer

Include in Numerator: <21 yr enrollees who received treatment services

Den 2

Include in Denominator 2: < 21 yr enrollees who received any service

Den 1

Include in Denominator 1: all < 21 yr enrollees

STOP

Fig 7: Treatment use
Measure 8: Usual Source of Care

8a. “Dental” Services
Description: Percentage of a. all enrolled children b. enrolled children who accessed dental services (received at least one service) each year for 2 consecutive years and received care from the same practice or clinical entity each year for both years.
Numerator: Unduplicated number of all children under age 21 years enrolled for two consecutive years who received at least one dental service from a practice or clinical entity with the same TIN number for both years
Denominator:
DEN 3: Unduplicated number of all enrolled children under age 21 years
DEN 4: Unduplicated number of all enrolled children under age 21 years who received at least one dental service

8b. “Oral health” services
Description: Percentage of a. all enrolled children b. enrolled children who accessed oral health services (received at least one service) each year for 2 consecutive years and received care from the same practice or clinical entity each year for both years.
Numerator: Unduplicated number of all children under age 21 years enrolled for two consecutive years who received at least one oral health service from a practice or clinical entity with the same TIN number for both years
Denominator:
DEN 3: Unduplicated number of all enrolled children under age 21 years
DEN 4: Unduplicated number of all enrolled children under age 21 years who received at least one oral health service

8c. “Dental” or “Oral health” services
Description: Percentage of a. all enrolled children b. enrolled children who accessed dental or oral health services (received at least one service) each year for 2 consecutive years and received care from the same practice or clinical entity each year for both years.
Numerator: Unduplicated number of all children under age 21 years enrolled for two consecutive years who received at least one dental or oral health service from a practice or clinical entity with the same TIN number for both years
Denominator:
DEN 3: Unduplicated number of all enrolled children under age 21 years
DEN 4: Unduplicated number of all enrolled children under age 21 years who received at least one dental or oral health service

Exclusions:
- Undocumented aliens who are eligible only for emergency program services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their program eligibility (e.g., pregnancy-related services)

Measure purpose: Examples of questions that can be answered through this measure at each level of aggregation:
1. What is the percent of children under age 21 years with a usual source of care?
2. Does the percent of children with usual source of care vary by any of the stratification variables?
3. Are there disparities in percent of children with usual/regular source of care among those who belong to racial and ethnic minorities versus those who don’t?
4. Over time, does this stay stable, increasing or decreasing?

Applicable Stratification Variables
1. Age: <1; 1-2; 3-5; 6-7; 8-9; 10-11; 12-14; 15-18; 19-20
2. Funding source (e.g. Medicaid; CHIP programs; private commercial benefit programs).
3. Provider payment mechanism: e.g. Fee-for-service, PPO or discounted fee-for-service, Capitation plan, Encounter fee plus used in FQHCs
4. Geographic location
5. Race/Ethnicity
6. Socioeconomic status
7. Length of enrollment (Note: This variable may be applied as enrollment in the same plan or enrollment in any plan. E.g. at the state level a criteria of “any” plan may be used versus at the MCO level a criteria of “same” plan might apply. The criterion used should be reported with the measurement score.)
8. Service location e.g., private dental office, community clinic or health center, dental school clinic, school-based dental clinic

Measure Limitation

- “Churn” within Medicaid/CHIP – Validity needs to be verified
Usual Source of Care Calculation

1. Run records for two consecutive measurement years\(^\text{20}\) (Note: “Year 1 = Measurement year & “Year 0” = Previous year) (Limit records by provider taxonomy depending on whether measure being computed is for “dental” vs. “oral health” vs. “dental or oral health” situations.

2. Check if the subject is under 21 years
   a. If age > or = 21 years at the start of Year 1 then exclude. Stop processing
   b. If invalid BIRTH-DATE then exclude. Stop processing
   c. If age <21 at start of Year 1 then proceed to next step.

3. Check if the subject enrolled in Year 1
   a. TBD.
   b. If not enrolled in Year 1, exclude. STOP processing.
   c. If enrolled in Year 1 proceed to next step.

4. Check if subject is enrolled in Year 0
   a. TBD.
   b. If not enrolled in Year 0, exclude. STOP processing.
   c. If enrolled in Year 0 proceed to next step.

5. Check if case received any dental service in Year 1
   a. If missing or invalid [SERVICE-CODE] (HCPCS/CDT) code or no service was provided in Year 1, then include in denominator of all enrollees for 2 years (DEN 3). Stop processing.
   b. If [SERVICE-CODE] = D0100 – D9999 in Year 1, proceed to the next step

6. Check if case received any dental service in Year 0
   a. If missing or invalid [SERVICE-CODE] (HCPCS/CDT) code or no service was provided in Year 0, then include in denominator of all enrollees for 2 years (DEN 3). Stop processing.
   b. If [SERVICE-CODE] = D0100 – D9999 in Year 0, proceed to the next step

7. Check if subject is in practice/clinic with the same TIN number for Year 1 and year 0
   a. If [TIN-NUMBER] is not same then include in denominator for those who received dental service (DEN 4). Case will also be included in denominator of all enrollees (DEN3). Stop processing.
   b. If [TIN-NUMBER] is same then include in numerator of those who have same TIN in both years (NUM). Case will also be included in DEN 4 and DEN 3. Stop processing.

8. Report
   a. Unduplicated number of total cases for each year
   b. Unduplicated numerator
   c. Unduplicated denominator(s)
   d. Unduplicated exclusions

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\(^\text{20}\) Medicaid/CHIP programs may want to apply these overall exclusions before the case finding process:
- Undocumented aliens who are eligible only for emergency Medicaid services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their Medicaid eligibility (e.g., pregnancy-related services)

\(^\text{21}\) In some instances, CPT codes are used for reimbursement for oral health services e.g. medical primary care providers providing oral evaluation, risk assessment, anticipatory guidance or fluoride varnish. As of 2011 data, Florida, Texas and Utah use CPT codes <AAP Table> For such states these additional codes must be considered.
Fig 9: Usual Source of Care
Measure 9: Care Continuity

9a. Dental” services
Description: Percentage of a. all enrolled children b. enrolled children who accessed dental service (received at least one service) who received a comprehensive or periodic oral evaluation in the year prior to the measurement, who also received a comprehensive or periodic oral evaluation within the reporting year.
Numerator: Unduplicated number of all children under age 21 years enrolled for two consecutive years who received a comprehensive or periodic examination each year for two consecutive years
Denominator:
DEN 3: Unduplicated number of all enrolled children under age 21 years in each year for two consecutive years
DEN 4: Unduplicated number of all enrolled children under age 21 years who received at least one dental service in each year for two consecutive years

9b. “Oral health” services
Description: Percentage of a. all enrolled children b. enrolled children who accessed oral health service (received at least one service) who received a comprehensive or periodic oral evaluation in the year prior to the measurement, who also received a comprehensive or periodic oral evaluation within the reporting year.
Numerator: Unduplicated number of all children under age 21 years enrolled for two consecutive years who received a comprehensive or periodic examination each year for two consecutive years
Denominator:
DEN 3: Unduplicated number of all enrolled children under age 21 years in each year for two consecutive years
DEN 4: Unduplicated number of all enrolled children under age 21 years who received at least one oral health service in each year for two consecutive years

9c. “Dental” or“ Oral health” services
Description: Percentage of a. all enrolled children b. enrolled children who accessed dental or oral health service (received at least one service) who received a comprehensive or periodic oral evaluation in the year prior to the measurement, who also received a comprehensive or periodic oral evaluation within the reporting year.
Numerator: Unduplicated number of all children under age 21 years enrolled for two consecutive years who received a comprehensive or periodic examination each year for two consecutive years
Denominator:
DEN 3: Unduplicated number of all enrolled children under age 21 years in each year for two consecutive years
DEN 4: Unduplicated number of all enrolled children under age 21 years who received at least one dental or oral health service in each year for two consecutive years

Exclusions:
- Undocumented aliens who are eligible only for emergency program services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their program eligibility (e.g., pregnancy-related services)

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

1. What is the percent of children under age 21 years who have continuous care over 2 years?
2. Does the percent of children with a “continuous” source of care vary by the stratification variables?
3. Are there disparities in children with “continuous” care among those who belong to racial and ethnic minorities versus those who don’t?
4. Over time, does the percent of children with continuous care stay stable, increasing or decreasing?
Applicable Stratification Variables

1. Age: <1; 1-2; 3-5; 6-7; 8-9; 10-11; 12-14; 15-18; 19-20
2. Funding source (e.g. Medicaid; CHIP programs; private commercial benefit programs).
3. Provider payment mechanism: e.g. Fee-for-service, PPO or discounted fee-for-service, Capitation plan, Encounter fee plus used in FQHCs
4. Geographic location
5. Race/Ethnicity
6. Socioeconomic status
7. Length of enrollment (Note: This variable may be applied as enrollment in the same plan or enrollment in any plan. E.g. at the state level a criteria of “any” plan may be used versus at the MCO level a criteria of “same” plan might apply. The criterion used should be reported with the measurement score.)
8. Service location e.g., private dental office, community clinic or health center, dental school clinic, school-based dental clinic

Measure Limitation

- “Churn” within Medicaid/CHIP – Validity needs to be verified before this measure can be proposed as final.
Care Continuity Calculation

1. Run records for two consecutive measurement years\(^{22}\) (Note: “Year 1 = Measurement year & “Year 0” = Previous year) (Limit records by provider taxonomy depending on whether measure being computed is for “dental” vs. ‘oral health” vs. “dental or oral health” situations.

2. Check if the subject is under age 21 years
   a. If age > or = 21 years at the start of Year 1 then exclude. Stop processing
   b. If invalid BIRTH-DATE then exclude. Stop processing
   c. If age < 21 at start of Year 1 then proceed to next step.

3. Check if the subject enrolled in Year 1
   a. TBD.
   b. If not enrolled in Year 1, exclude. STOP processing.
   c. If enrolled in Year 1 proceed to next step.

4. Check if the case is enrolled in Year 0
   a. TBD.
   b. If not enrolled in Year 0, exclude. STOP processing.
   c. If enrolled in Year 0 proceed to next step.

5. Check if case received any dental service in Year 1
   a. If missing or invalid [SERVICE-CODE] (HCPCS/CDT) code in Year 1 or no dental service was provided, then include in denominator of all enrollees for 2 years (DEN 3). Stop processing.
   b. If [SERVICE-CODE] = D0100 – D9999 in Year 1, proceed to the next step

6. Check if case received any dental service in Year 0
   a. If missing or invalid [SERVICE-CODE] (HCPCS/CDT) code in Year 0 or no service was provided, then include in denominator of all enrollees for 2 years (DEN 3). Stop processing.
   b. If [SERVICE-CODE] = D0100 – D9999 in Year 0, proceed to the next step

7. Check if case received comprehensive or periodic evaluation in Year 1
   a. If [SERVICE-CODE] is not D0120 or D0150 or D0145 in Year 1 then include in denominator for those who received dental service (DEN 4). Case will also be included in denominator of all enrollees (DEN3). Stop processing.
   b. If [SERVICE-CODE] = D0120 or D0150 or D0145 in Year 1 then proceed to next step.

8. Check if case received comprehensive or periodic evaluation in Year 0
   a. If [SERVICE-CODE] is not D0120 or D0150 or D0145 in Year 0 then include in denominator for those who received dental service (DEN 4). Case will also be included in denominator of all enrollees (DEN3). Stop processing.
   b. If [SERVICE-CODE] = D0120 or D0150 or D0145 in Year 0 then include in numerator of those who received comprehensive or periodic oral evaluation in each year for both years (NUM). Case will also be included in DEN 4 and DEN 3. Stop processing.

9. Report
   a. Unduplicated number of total cases for each year
   b. Unduplicated numerator
   c. Unduplicated denominator(s)
   d. Unduplicated exclusions

\(^{22}\) Medicaid/ CHIP programs may want to apply these overall exclusions before the case finding process:
   - Undocumented aliens who are eligible only for emergency Medicaid services;
   - Other groups of individuals under age 21 who are eligible only for limited services as part of their Medicaid eligibility (e.g., pregnancy-related services)

\(^{23}\) In some instances, CPT codes are used for reimbursement for oral health services e.g. medical primary care providers providing oral evaluation, risk assessment, anticipatory guidance or fluoride varnish. As of 2011 data, Florida, Texas and Utah use CPT codes <AAP Table> For such states these additional codes must be considered.
Run records for two consecutive measurement years*

No/Missing or invalid field codes

Age < 21 at start of year 1

Enrolled in year

TBD

Year 1: Measurement year
Year 0: Previous year

No/Missing or invalid field codes

TBD

Enrolled in year 0

Year 1 Service code = D1100 - D1999

No

No/Missing or invalid field codes

Year 0 Service code = D1120 - D1999

No

No/Missing or invalid field codes

Year 1 Service code = D1120 or D1150

No

No/Missing or invalid field codes

Year 0 Service code = D1120 or D1150

No

No/Missing or invalid field codes

NUM

Include in numerator < 21 yr who received evaluation in both yrs

DEN4

Include in Denominator < 21 yr enrollees in both years who received any service in both yrs

DEN3

Include in Denominator all < 21 yr enrollees in both years

STOP

Fig 9: Care continuity
Measure 10: Per Enrollee/User Cost of Clinical Services

10a. “Dental” services
Description: Total amount that is paid on direct provision of care (reimbursed for clinical services) per a. enrolled child b. enrolled child who accessed dental service (received at least one service) within the reporting year
Numerator: Total amount that is paid for direct provision of care for the reporting year
Denominator:
DEN 1: Unduplicated number of all enrolled children under age 21 years
DEN 2: Unduplicated number of all enrolled children under age 21 years who received at least one dental service

10b. “Oral health” services
Description: Total amount that is paid on direct provision of care (reimbursed for clinical services) per a. enrolled child b. enrolled child who accessed oral health service (received at least one service) within the reporting year
Numerator: Total amount that is paid for direct provision of care for the reporting year
Denominator:
DEN 1: Unduplicated number of all enrolled children under age 21 years
DEN 2: Unduplicated number of all enrolled children under age 21 years who received at least one oral health service

10c. “Dental” or “Oral health” service
Description: Total amount that is paid on direct provision of care (reimbursed for clinical services) per a. enrolled child b. enrolled child who accessed dental or oral health service (received at least one service) within the reporting year
Numerator: Total amount that is paid for direct provision of care for the reporting year
Denominator:
DEN 1: Unduplicated number of all enrolled children under age 21 years
DEN 2: Unduplicated number of all enrolled children under age 21 years who received at least one dental or oral health service

Exclusions:
- Undocumented aliens who are eligible only for emergency program services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their program, eligibility (e.g., pregnancy-related services)

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

1. How much is the direct dental care cost per user and per enrollee?
2. Does this vary by any of the stratification variables?
3. Are there disparities among those who belong to racial and ethnic minorities versus those who don’t?
4. The numerator of this measure provides part of the information to calculate the medical [dental] loss ratio. The medical loss ratio is the ratio of total amount paid for medical services plus expenses incurred for quality improvement efforts divided by the total earned premiums less federal/ state taxes and license/ regulatory fees.24

Applicable Stratification Variables
1. Age: <1; 1-2; 3-5; 6-7; 8-9; 10-11; 12-14; 15-18; 19-20
2. Funding source (e.g. Medicaid; CHIP programs; private commercial benefit programs).

3. Provider payment mechanism: e.g. Fee-for-service, PPO or discounted fee-for-service, Capitation plan, Encounter fee plus used in FQHCs
4. Race/Ethnicity
5. Socioeconomic status
Per enrollee/user cost of clinical services

1. Run records for one measurement year (Limit records by provider taxonomy depending on whether measure being computed is for “dental” vs. ‘oral health” vs. “dental or oral health” situations.

2. Check if the subject is under 21 years
   a. If age > or = 21 years at start of measurement year then exclude. Stop processing
   b. If invalid BIRTH-DATE then exclude. Stop processing
   c. If age < 21 then proceed to next step.

3. Check if subject is eligible for inclusion within the measurement population
   a. TBD
   b. If not eligible for inclusion, exclude. STOP processing.
   c. If eligible for inclusion proceed to next step. Also count unduplicated number of enrollees. (DEN1)

4. Check if subject received any dental service
   a. If missing or invalid SERVICE-CODE (HCPCS/CDT) code or no dental service was provided, then exclude. Stop processing.
   b. If SERVICE-CODE = D0100 – D9999, then proceed to next step. Also count unduplicated number of enrollees who received a dental service. (DEN 2)

5. Calculate total claim payments
   a. Add all claim payments. (NUM).
   b. In case of capitated payments and encounter fee plus payments (FQHC), the costs should be included in the NUM and unduplicated number of enrollees should be added to DEN1. The unduplicated number of enrollees who received any service should be added to DEN 2. [This step not depicted in algorithm]

6. Report
   a. Total amount paid for services
   b. Unduplicated number of enrollees
   c. Unduplicated number of enrollees who received service
   d. Unduplicated number of exclusions

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25 Medicaid/CHIP programs may want to apply these overall exclusions before the case finding process:
- Undocumented aliens who are eligible only for emergency Medicaid services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their Medicaid eligibility (e.g., pregnancy-related services)

26 In some instances, CPT codes are used for reimbursement for oral health services e.g. medical primary care providers providing oral evaluation, risk assessment, anticipatory guidance or fluoride varnish. As of 2011 data, Florida, Texas and Utah use CPT codes <AAP Table> For such states these additional codes must be considered.
Measure 11: Percentage of Child Healthcare Expenditures

11a. “Dental” services
Description: Percentage of child health expenditures that is expended on dental care within the reporting year
Numerator: Total dental program expenses for the reporting year (total amount paid for dental services + administrative costs)
Denominator: Total amount of child health expenditures for the reporting year

11b. “Oral health” services
Description: Percentage of child health expenditures that is expended on oral health care within the reporting year
Numerator: Total oral health program expenses for the reporting year (total amount paid for oral health services + administrative costs)
Denominator: Total amount of child health expenditures for the reporting year

11c. “Dental’ or “Oral health” services
Description: Percentage of child health expenditures that is expended on dental or oral health care within the reporting year
Numerator: Total dental or oral health program expenses for the reporting year (total amount paid for oral health services + administrative costs)
Denominator: Total amount of child health expenditures for the reporting year

Exclusions:
- Undocumented aliens who are eligible only for emergency program services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their program eligibility (e.g., pregnancy-related services)

Measure purpose: Examples of questions that can be answered through this measure:

1. What is the overall cost of dental care for the program?
2. Is there variation by age?
3. Are there disparities among those who belong to racial and ethnic minorities versus those who don’t?

Applicable Stratification Variables
1. Age: <1; 1-2; 3-5; 6-7; 8-9; 10-11; 12-14; 15-18; 19-20
2. Race/Ethnicity

Measure Limitation
- Defining administrative costs requires standardization in identifying units that should be included as administrative items and inputting their costs
**Percentage of child healthcare expenditures**

1. Run cases for one measurement year\(^{27}\) (Limit records by provider taxonomy depending on whether measure being computed is for “dental” vs. “oral health” vs. “dental or oral health” situations.
2. Check if the subject is under 21 years
   a. If age > or = 21 years at start of measurement year then exclude. Stop processing
   b. If invalid BIRTH-DATE then exclude. Stop processing
   c. If age < 21 then proceed to next step.
3. Check if subject is eligible for inclusion within the measurement population
   a. TBD
   b. If not eligible for inclusion, exclude. STOP processing.
   c. If eligible for inclusion proceed to next step.
4. Check if subject received any dental service
   a. If missing or invalid SERVICE-CODE (HCPCS/CDT) code or no dental service was provided, then exclude. Stop processing.
   b. If SERVICE-CODE = D0100 – D9999\(^{28}\), then proceed to next step.
5. Calculate total claim payments
   a. Add claim payments.
   b. In case of capitated payments and encounter fee plus payments (FQHC), the costs should be included in the NUM [This step not depicted in algorithm]
6. Manually input:
   a. Administrative overhead for dental care
   b. Total (administrative and direct) non-dental child health expenditures for program
7. Report
   a. Total program expenditures
   b. Total child health expenditures
   c. Percentage of total child health expenditures

\(^{27}\) Medicaid/CHIP programs may want to apply these overall exclusions before the case finding process:
- Undocumented aliens who are eligible only for emergency Medicaid services;
- Other groups of individuals under age 21 who are eligible only for limited services as part of their Medicaid eligibility (i.e., pregnancy-related services)

\(^{28}\) In some instances, CPT codes are used for reimbursement for oral health services e.g. medical primary care providers providing oral evaluation, risk assessment, anticipatory guidance or fluoride varnish. As of 2011 data, Florida, Texas and Utah use CPT codes <AAP Table> For such states these additional codes must be considered.
Fig 11: Percentage of child healthcare expenditures