DENTAL QUALITY ALLIANCE

Pediatric Oral Health Quality and Performance Measures:
Environmental Scan

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Background

Measuring the quality of healthcare and using those measurements to promote improvements in the delivery of broader healthcare are now commonplace.[1] The Institute of Medicine defines “quality of care” as "the degree to which healthcare services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge." According to the HRSA Office of Health Information Technology and Quality, “Quality healthcare is the provision of appropriate services to individuals and populations that are consistent with current professional knowledge, in a technically competent manner with good communication, shared decision-making and cultural sensitivity.” Thus measuring quality of care requires an understanding of the services that are proven to contribute to improving health and determining whether these services are being provided to positively impact oral health. In recent years, a growing number of quality measures and reporting initiatives have resulted in a proliferation of measures that are often duplicative and unduly burdensome on healthcare providers and increase the potential for confusion among the public.[2] The Dental Quality Alliance aims to lead the dental profession into a paradigm of standardized measuring and reporting for the purpose of quality improvement of oral healthcare.

To begin the process of establishing standardized quality and performance measures across the dental health care system, the Dental Quality Alliance (DQA) charged its Research and Development Committee to conduct an environmental scan (a search for measures that exist either in the literature or may be in use) focusing on pediatric oral healthcare, as its initial charge. The objective of this effort was to:

(1) Identify existing pediatric oral health performance and quality measure concepts and rate these concepts on the basis of their validity, feasibility, and importance
(2) Identify gaps in existing measures
(3) Develop a comprehensive starter set of pediatric oral health performance measures that can be adopted by all the stakeholders within the profession.

Methods

The Committee began its work by identifying existing performance and quality measure concepts (description, numerator, and denominator) on pediatric populations defined as children under 21 years. Staff conducted a comprehensive online search for publicly available measure concepts

[1] Chassin MR, Loeb JM, Schmaltz SP, et al. Accountability Measures - Using Measurement to Promote Quality Improvement. The New England Journal of Medicine 2010: 683-88.
[2] CMS Measures Management System Accessed at CMS MMS November 15, 2011.

appropriate for this population. This search was conducted initially in August – September 2011 and then updated on February 8, 2012. This search did not include a search for items within surveillance instruments used to gather data on oral health such as the National Center for Health Statistics' (NCHS) surveys. Oral health related quality of life questionnaires also were excluded.

PubMed Search

Staff used two specific search strategies to search Medline.

Search 1: (performance OR process OR outcome OR quality) AND measure AND (oral or dental) AND (children OR child OR pediatric OR paediatric) – 1121 citations

Search 2 - "Quality Indicators, Health Care"[Mesh] AND (dental OR oral) - 150 citations

Staff included five articles [3,4,5,6,7] based on title and abstract review of these citations. Measure concepts presented within these articles were included in the list of concepts for Committee review.

Web Search

Staff then performed an internet search with keywords similar to the ones used for the PubMed search.

Search of relevant organization websites

Staff began this search through the links provided within the National Library of Medicine database of relevant organizations (http://www.nlm.nih.gov/hsrinfo/quality.html#760) including the National Quality Measures Clearinghouse (NQMC), National Quality Forum (NQF), Maternal and Child Health Bureau (MCHB) etc.

Soliciting measures

The Committee contacted staff at the Agency for Healthcare Research and Quality (AHRQ) in August 2011 to obtain the measures collected by the Subcommittee on Children's Healthcare Quality

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[3] Mangione-Smith R, Schiff J, Dougherty D. Identifying children's health care quality measures for Medicaid and CHIP: an evidence-informed, publicly transparent expert process. Acad Pediatr. 2011 May-Jun;11(3 Suppl):S11-21

[4] Mattila ML, Rautava P, Paunio P et al Children's dental healthcare quality using several outcome measures. Acta Odontol Scand. 2002 Mar;60(2):113-6.

[5] Mascarenhas AK, Moursi AM. Use of fissure sealant retention as an outcome measure in a dental school setting. J Dent Educ. 2001 Sep;65(9):861-5.

[6] Golletz D, Milgrom P, Mancl L Dental care satisfaction: the reliability and validity of the DSQ in a low-income population. J Public Health Dent. 1995 Fall;55(4):210-7.

[7] González GZ, Klazinga N, ten Asbroek G, Delnoij DM. Performance indicators used to assess the quality of primary dental care. Community Dent Health. 2006 Dec;23(4):228-35.

Measures for Medicaid and CHIP programs (SNAC).[8] The Committee solicited measures from other entities involved in measure development activities. The DentaQuest Institute provided 13 measures that they use for their Early Childhood Caries (ECC) project. Since these measures are specific to this project, they were not included in the rating exercise. For example, the measures are specified to the "first ECC project visit" or the "second clinical visit."

Initial review of measure concepts

The Committee reviewed this list of measure concepts. Following initial discussion, the Committee decided to set aside those measures rated by SNAC as "Measures Assessed as Being Not Relevant, Scientifically Sound, and/or Feasible", duplicates, and those that could not be interpreted based on available descriptions. The Committee also excluded the Dental Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey items since they believed that any such survey should be considered in its entirety rather than rating individual survey items. Further, surveys typically include several individual questions/items that are often used together to report a single composite index or score.

Delphi ratings

The Committee then used the RAND-UCLA modified Delphi approach to rate the remaining measure concepts.[9] They applied the criteria and scoring system for importance, validity, and feasibility consistent with the process used by the SNAC. Table 1 presents the scoring criteria. **Appendix 1** presents the criteria used to assess these elements.

TABLE 1: SCORING CRITERIA USED BY COMMITTEE

Measures should be scored on a 9-point scale:

VALIDITY
7-9 → Measure concept is scientifically sound and the measure itself is definitely valid (i.e., sufficient evidence of scientific soundness and measure validity)
4-6 → Measure concept has uncertain scientific soundness (i.e., insufficient evidence) and the measure itself has uncertain validity (may not measure what it purports to measure).
1-3 → Measure concept is not scientifically sound and the measure itself is not valid (sufficient evidence of lack of scientific soundness and invalidity of the measure itself).

FEASIBILITY
7-9 → Measure is definitely feasible
4-6 → Measure has uncertain feasibility
1-3 → Measure is not feasible

[8] Mangione-Smith R, Schiff J, Dougherty D . Identifying children's health care quality measures for Medicaid and CHIP: an evidence-informed, publicly transparent expert process. Acad Pediatr. 2011 May-Jun;11(3 Suppl):S11-21.
[9] Brook RH. The RAND/UCLA appropriateness method. In: McCormick KA, Moore SR, Siegel RA eds. Clinical Practice guidelines Development. Methodology Perspectives. Rockville, Md: Agency for Health Care Policy and Research; 1994

IMPORTANCE
7-9 → Measure is definitely important and meets several of the criteria defined by SNAC.
4-6 → Measure has an uncertain level of importance and meets some of the criteria defined by SNAC but fails to meet some of the criteria given higher weight (1-4) by SNAC.
1-3 → Measure fails to meet most of the criteria for importance

Each Committee member was requested to provide their individual ratings confidentially. The ratings were de-identified and distributed to all Committee members along with a mean and median statistics. Following Delphi round I, the Committee discussed ratings for each measure and identified reasons for variability among raters. One reason for variability was the lack of sufficient information on the numerators and denominators for some of the concepts. Based on the available measure descriptions, the Committee Chair and Staff included information for the numerators and denominators. They also classified the measures into the following categories for efficiently comparing competing measures. The Committee considered provision of safe, timely, efficient, effective, equitable and patient centered care within the context of these categories.

- Utilization of Services
- Usual Source of Care
- Care Continuity
- Care Coordination
- Evaluation/Treatment Planning
- Prevention
- Treatment
- Clinical Service Quality
- Patient Satisfaction/Experience
- Oral Health Status (disease/function)
- Quality of Life
- Value

The Committee then undertook a second round of Delphi rating. As before, staff compiled the ratings and provided a de-identified list to the Committee for review. The Committee analyzed the mean and median rating scores and chose to further discuss measure concepts that had scored above 7 in all three criteria (i.e., the high scoring measures). The Committee categorized the remaining measure concepts as “low-scoring” (Appendix 2: Table 2). From this low-scoring list, the Committee also discussed concepts that had high importance and validity scores, but low feasibility scores, along with

measure concepts that had a validity score around 6. This step was similar to the process established by SNAC. The goal of these discussions was to identify a starter set of measures.

During the course of the Committee's work on Delphi rating, Staff identified three additional sets of measure concepts from the Health Resources and Services Administration (HRSA), the California Managed Risk Medical Insurance Board (MRMIB), and State of Texas Dashboard for 2012 (Appendix 3). The Committee considered these additional measure concepts, along with the high scoring concepts identified through the Delphi process, for inclusion in a starter set of measures for the DQA. However, these sets, identified after the Delphi process had begun, were not included in the scan results or the gap analysis that appear below.

Results

Objective I: Scan Results

Measure concepts NOT processed though Delphi rating	**53**	**Table 1**
Measure concepts processed through Delphi rating	**59**	
Low-scoring measure concepts	*38*	**Table 2**
High-scoring measure concepts	*21*	**Table 3**
Total identified through the environmental scan:	**112**	

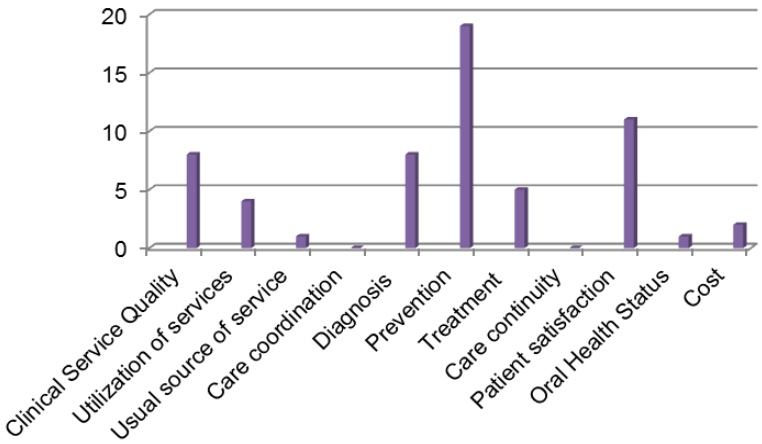
The complete list of measure concepts identified through this process is presented in **Appendix 2.**

A total of 112 measure concepts were identified through the environmental scan. (Appendix 1) Following initial discussion the Committee considered 59 measures for two rounds of Delphi rating. Twenty-one of the 59 measure concepts scored above 7 in all criteria following the Delphi round II (high-scoring measure concepts).

Objective II: Gap Analysis

The Committee discussed the distribution of the measure concepts that they rated through the Delphi process based on two classification schemes. Note that the Committee did not include the three additional sets of measure concepts from Health Resources and Services Administration, the California Managed Risk Medical Insurance Board and State of Texas Dashboard for 2012 within this gap analysis.

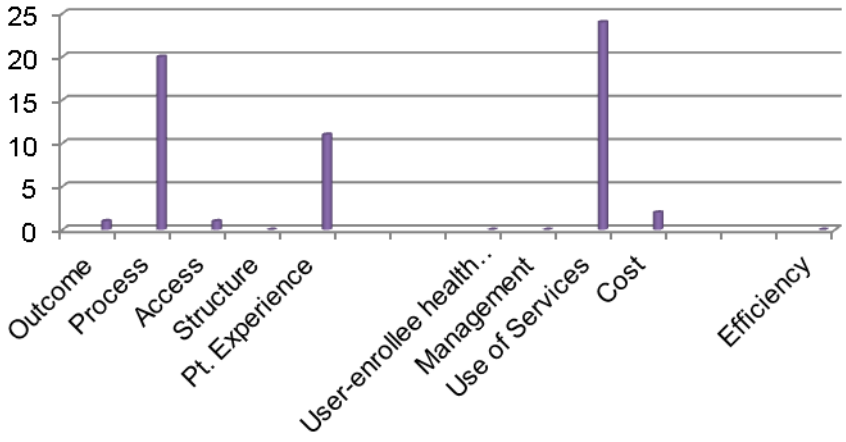
a. By categories within the framework identified for this effort.



Of the 59 measures considered in the Delphi round II, the Committee found that the majority of the existing measures were related to prevention with others on clinical service quality, diagnosis, treatment, use of services and patient satisfaction. There were no measures on care coordination and care continuity. (*Note: One measure on care continuity used by MRMIB was within one of the three measure sets identified after Delphi had begun.)*

b. By AHRQ domain:

When categorized by the AHRQ domains, the measures were mostly “use of service” and “process” measures.



Objective III: Starter Set of measures

Based on this scan, the Committee has identified a starter set of measures for pediatric oral health. This set will be available as a follow-up publication.

The Committee unanimously agreed on the importance of measures of patient satisfaction and experience with care. However the Committee believed that a comprehensive survey was necessary for assessing this domain rather than including individual items within this measure set. Several existing patient/family surveys assess parent satisfaction of pediatric health care. One study[10] compared patient satisfaction surveys to recommend for measuring patient/family experience of pediatric health care. These authors recommended the CAHPS Child Medicaid 4.0 and pediatric Clinician & Group Survey for inclusion in the initial recommended list of core measures for voluntary use by Medicaid and Children's Health Insurance Program (CHIP). In October 2004, the American Institutes for Research (AIR) and TRICARE began work on a survey to measure patients' experiences with their dental plan and its services. This survey[11] for adult enrollees was submitted to the CAHPS Consortium, which adopted it as a CAHPS product in December 2006. A Working Group convened by the RAND Corporation[12] has conducted initial focus groups and cognitive interviews to adapt the D-CAHPS survey to assess parents' experience with their children's dental care. State CHIP programs will be required to report CAHPS information by December, 2013.[13]

While a single measure on care continuity is in use by the MRMIB (Appendix 3), there were no measure concepts identified regarding care coordination. Care coordination has been recognized as an important aspect of high quality, patient-centered care. In the future, robust measures of care coordination processes can be useful to generate evidence about care coordination and its relationship to health outcomes. As a critical step in providing measures to the field, AHRQ commissioned the development of the *Care Coordination Measures Atlas*, a compendium of existing measures of care coordination.[14]

Lastly, quality of life questionnaires were not considered within the scope of this effort.

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[10] Co JP, Sternberg SB, Homer CJ. Acad Pediatr. 2011 May-Jun;11(3 Suppl):S59-67. Measuring patient and family experiences of health care for children.
[11] Agency for Healthcare Research and Quality CAHPS https://www.cahps.ahrq.gov/Surveys-Guidance/Dental.aspx
[12] RAND Corporation Working Documents Accessed at http://www.rand.org/pubs/working_papers/2005/RAND_WR101.pdf and http://www.rand.org/pubs/drafts/DRU2595.html
[13] Department of Health and Human Services, Children's Health Insurance Program Reauthorization Act 2011 Annual Report on the Quality of Care for Children in Medicaid and CHIP. http://www.medicaid.gov/Medicaid-CHIP-Program-Information/ Accessed February 2012
[14] Family Centered Care Self-Assessment Tool - Family Version. October 2008. (Accessed at http://www.familyvoices.org/.)

Concluding Remarks

Limitations

The Committee acknowledged the following limitations of this scan:

- Measures within national surveys were not included. The NIDCR/CDC Dental, Oral and Craniofacial Data Resource Center at https://www.nidcr.nih.gov/research/data-statistics provides a comprehensive list of national survey items on oral health.
- Quality of life was not considered as an outcome for measure development. During the search, staff identified several articles that provide questionnaires to measure oral health related quality of life. The list of citations is provided in Appendix 4.
- Three sets of measures identified following the start of the Delphi were not included in the analysis of the final results from this scan.

The Committee identified the following as the significant limitations to existing pediatric measures:

- Limited availability of a comprehensive approach to measurement by many of the agencies, i.e., limited measurement of all aspects of care
- Limited availability of clear numerator and denominator descriptions with the measure concepts
- Lack of standardization in measurement, with many duplicates
- Lack of focus on quality with majority of measures on utilization, i.e., limited evidence to support many of the measures currently available
- Lack of measures assessing patient safety
- Lack of an organized system relating disease risk to diagnostic measures
- Limited measures across multiple care delivery systems including medical, dental and public health. The Committee found only a single measure on Emergency Department use for dental infections.[15]

These findings are consistent with the recent IOM report which concluded that current quality measures "do not support useful analysis of the extent to which children and adolescents in the United States are healthy or are receiving high-quality care."[16]

[15] Maine.gov. Department of Health and Human Services. https://gateway.maine.gov/, Accessed February 15, 2012.

Need for standardization

Quality measures that are uniformly and reliably collected are essential in monitoring and improving the quality of children's health care services.[17] An important focus of measurement to improve quality of care is the study of variations (by geographic area, plan type, etc.) in the use of dental procedures.

Data for measurement in dentistry is obtained from administrative sources (claims and encounters), from patient records/EHR systems, and through surveys. The construct of measures is then dictated by the data available from each of these sources. Further, even when using administrative data, public and private health plans use different measures or similar measures with varying specifications. Specifications of measures reported to CMS for the Medicaid and CHIP programs also vary.[18] To ensure standardized reporting, better alignment of measures is needed between public and private sectors and across the community, state, and national levels.

Health plan administrative data vs. patient record data vs. national oral health surveys

Typically, health plans use measures with administrative sources; large group practice networks and federally qualified health centers (FQHC's) with integrated EDR systems may use patient records; while federal agencies such as the Centers for Disease Control and Prevention (CDC) rely on national surveys. The CDC collects data through the National Center for Health Statistics' (NCHS) surveys (http://www.cdc.gov/nchs/surveys.htm). Other surveys, such as the National Health and Nutrition Examination Survey (NHANES), the National Oral Health Surveillance System, the National Survey of Children's Health (NSCH), the National Health Interview Survey (NHIS), and the Medical Expenditure Panel Survey (MEPS) are among those that collect national and state surveillance data on oral health.

No single dataset contains all the information necessary to develop an effective quality improvement plan and monitor the health of our population. Claims data has information on the types of dental services that are being provided. However, NHANES and MEPS data are better at identifying which populations have the greatest health disparities and need for these services. Dental claims data are insufficient to measure oral health status, while NHANES and certain dental quality of life surveys

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[16] Committee on Pediatric Health and health Care Quality Measures. 2011. Child and Adolescent health and Health Care Quality: Measuring What Matters. IOM/National Academy Press, Washington D.C, Chapter 6

[17] Department of Health and Human Services, Children's Health Insurance Program Reauthorization Act 2011 Annual Report on the Quality of Care for Children in Medicaid and CHIP. http://www.medicaid.gov/Medicaid-CHIP-Program-Information/ Accessed February 2012

[18] Department of Health and Human Services, Children's Health Insurance Program Reauthorization Act 2011 Annual Report on the Quality of Care for Children in Medicaid and CHIP. http://www.medicaid.gov/Medicaid-CHIP-Program-Information/ Accessed February 2012

may be able to measure trends in oral health of a population. While patient records are a rich source of data, in the current environment, access to such data is limited.

It is important to understand which dental clinical services and public health initiatives have demonstrable associations with improved oral health outcomes, so that when a population is identified as having a high incidence and prevalence of oral disease a more informed policy can be developed to meet this challenge. In addition, follow-up measures on the effectiveness of dental services and public health initiatives on reducing disparities and dental disease in the population can help determine whether we are using our limited resources efficiently. Currently CDC is taking considerable efforts to link the data sets listed above to other databases, such as the MEPS, and to Medicaid Analytic eXtract (MAX) data from the Centers for Medicare and Medicaid Services (CMS). These efforts will further facilitate the alignment of measures across the different data sources. However, more concerted efforts are required to develop measure sets that contain both the administrative/claims-based measures and parallel national surveillance system measures. The meaningful use of EHRs will also support a cost-effective opportunity to collect and report on measures based on patient data.

Private vs. Public sectors

Over the last decade there have been greater efforts to control escalating Medicaid costs. One strategy is to transfer financial risk by contracting with private sector medical Managed Care Organizations (MCOs) that agree to provide all the administrative services and assume the financial risk of care in exchange for a fixed capitated payment. In at least 11 states, the Medicaid program has “carved out” the dental component from an MCO arrangement and contracted directly with a benefit administrator to provide administrative services only (ASO) or through a risk-based arrangement where the administrator also assumes the financial risk in exchange for a fixed premium payment by the Medicaid program. While these arrangements provide more financial certainty to those states, they also mean ceding much control of program management to the MCOs and third parties. This loss of control makes the adoption of performance measures even more important to ensure that financial savings are not achieved through compromising access or quality of care.

Today, the greater percentages of Medicaid beneficiaries are receiving all or part of their health care services through Medicaid MCOs. These MCOs most often contract with dental offices directly or subcontract the administration of their dental programs to third parties who contract with dental offices to provide care. In both cases, the majority of time they contract with dental offices on a reduced fee-for-service basis and not through a capitated reimbursement methodology. The validity and completeness of claims data in these situations are usually good for covered services. For the minority of care provided by providers under a capitation reimbursement, the method for capturing

utilization is encounter data. However, unlike Medicaid claims data for services provided on a fee-for-service basis, payment is not tied to submission of encounter data. MCOs are required to ensure that data received from Medicaid providers are accurate and complete (42 CFR § 438.242(b)(2).[19] The collection and reporting of managed care claims and/or available encounter data from MCO or their subcontractors to the States has been a challenge.[20] States' contractual agreements with MCOs dictate the format, frequency, and/or validation expectations for encounter data.[21] Efforts are needed to ensure the standardization, completeness, accuracy, and timeliness of the data collected by the States and/or reported to CMS.

Another challenge is the multiple State and Federal reporting requirements currently in place.[22] To address this challenge, CMS has created the Medicaid Statistical Information System (MSIS) to establish a primary source of Medicaid data at the federal level. As the HHS Secretary's report to Congress noted, MSIS is being reviewed to consider options for an integrated system that would streamline several current Medicaid and CHIP data-collection efforts through expanded, streamlined MSIS and would include Medicaid and CHIP payment and quality reporting needs.[23] Such efforts may support alignment and comparison of results based on standardized measures across the private and public sectors and across different types of payment plans.

Need for comprehensive assessment

According to the National Quality Forum,[24] "outcomes related to patient experience, function, and quality of life matter to patients and their families and caregivers, and ultimately to employers and society in terms of population health, productivity, and opportunity costs. Although process or structure assessment may offer insight on performance and allow providers to pinpoint areas needing corrective action, it is the outcome of the process that demonstrates value and is of importance to consumers, purchasers, and the public. However, without adequate process and structural measures, evidence-based approaches to achieving positive outcomes will not spread and sustained quality improvement efforts will fail. Process or structural measures should be closely linked with improved

[19] Department of Health and Human Services, Office of Inspector General http://oig.hhs.gov/oei/reports/oei-07-06-00540.pdf, Accessed February 15, 2012
[20] Department of Health and Human Services, Children's Health Insurance Program Reauthorization Act 2011 Annual Report on the Quality of Care for Children in Medicaid and CHIP. http://www.medicaid.gov/Medicaid-CHIP-Program-Information/ Accessed February 2012
[21] Department of Health and Human Services, Office of Inspector General http://oig.hhs.gov/oei/reports/oei-07-06-00540.pdf, Accessed February 15, 2012
[22] Department of Health and Human Services, Children's Health Insurance Program Reauthorization Act 2011 Annual Report on the Quality of Care for Children in Medicaid and CHIP. http://www.medicaid.gov/Medicaid-CHIP-Program-Information/ Accessed February 2012
[23] Department of Health and Human Services, Children's Health Insurance Program Reauthorization Act 2011 Annual Report on the Quality of Care for Children in Medicaid and CHIP. http://www.medicaid.gov/Medicaid-CHIP-Program-Information/ Accessed February 2012
[24] National Quality Forum: National Priorities Partnership: NPP Report to HHS: Accessed November 6, 2011.

outcomes, when possible as a paired structure-outcome or process-outcome measure, and should be closely monitored for unintended consequences."

In dentistry, lack of requirements to report diagnostic codes, the lack of a universally accepted diagnostic code set, and the additional administrative burden to report diagnostic codes limits the ability to assess the impact of care delivered. This may largely be the reason for the proliferation of "use of service" and "process" measures without concomitant outcome assessment. However, as noted above, measuring only outcomes or measuring only processes of care using single measures is also counterproductive. An individual's health is influenced by the healthcare system (financial and structural), the care providers, and the patients themselves.

Thus a balanced approach that evaluates multiple aspects of care is essential in understanding disparities and adequately planning for improved quality.

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APPENDIX 1: Scoring Methodology Used by AHRQ Child Quality Measures Subcommittee

REFERENCE: [25]

Validity: Validity is the degree to which a quality measure is associated with what it purports to measure (e.g., a clinical decision support system is a measure of structure or capacity; prescribing is a measure of a clinical process; asthma exacerbations are a measure of health outcomes).

A quality measure should be considered *valid* if:

- **It meets criteria for scientific soundness:**

    1. There is adequate scientific evidence or, where evidence is insufficient, expert professional consensus to support the stated relationship between:

        - ***structure and process***[26] (e.g., that there is a demonstrated likelihood that a clinical decision support system (a structural or capacity measure) in a hospital or ambulatory office leads to increased rates of appropriate flu vaccination in the hospital or practice),

        - ***structure and outcome*** (e.g., higher continuity of care in the outpatient setting (influenced by how appointments are organized) is associated with fewer ambulatory care sensitive hospitalizations (e.g., hospitalizations for dehydration), or

        - ***process and outcome*** (e.g., that there is a demonstrated likelihood that prescribing inhaled corticosteroids (a clinical process) to specified patients with asthma will improve the patients' outcomes) and vice versa (e.g., that if we measure quality as a health outcome measure there is sufficient demonstrated likelihood that the outcome can be attributed to either health care delivery structures or clinical processes of care or an explicit combination of both)

- **The measure itself is valid – that is, it should truly assess what it purports to measure**

***Feasibility*:** A measure will be considered feasible if:

1. The data necessary to score the measure are available to state Medicaid and CHIP programs;

[25] Mangione-Smith R, Schiff J, Dougherty D . Identifying children's health care quality measures for Medicaid and CHIP: an evidence-informed, publicly transparent expert process. Acad Pediatr. 2011 May-Jun;11(3 Suppl):S11-21.

[26] Structure of care is a feature of a healthcare organization or clinician relevant to its capacity to provide health care. A process of care is a health care service provided to, on behalf of, or by a patient appropriately based on scientific evidence of efficacy or effectiveness. An outcome of care is a health state of a person resulting from health care.

2. Detailed specifications are available for the measure;
3. Estimates of adherence to the measure based on available data sources are likely to be reliable and unbiased. This allows for meaningful comparisons across states, programs, individual providers or institutional providers.
    a. Reliability is the degree to which the measure is free from random error.

Importance: To be considered important at least some of the following criteria should be met by the measure. The criteria are listed in order of decreasing weight as determined through a voting process by SNAC members:

1. The measure should be **actionable**. States, Medicaid and CHIP managed care plans, and relevant healthcare organizations should have the ability to improve their performance on the measure with implementation of quality improvement efforts;
2. The **cost** to the nation for the area of care addressed by the measure should be substantial;
3. Health care systems should clearly be accountable for the quality problem assessed by the measure;
4. The extent of the quality problem addressed by the measure should be substantial;
5. There should be documented variation in performance on the measure;
6. The measure should be representative of a class of quality problems, i.e., it should be a "sentinel measure" of quality of care provided for preventive care, mental health care, or dental care, etc.;
7. The measure should assess an aspect of health care where there are known disparities;
8. The measure should contribute to a final core set that represents a balanced portfolio of measures and is consistent with the intent of the legislation;
9. Improving performance on measures included in the core set should have the potential to transform care for our nation's children.

APPENDIX 2

NOTE: The measures in these tables are listed as they were identified without modifications.

TABLE 1: Measure concepts not processed through Delphi rating

	Title	Source	Description	Numerator	Denominator	Reason for elimination
1.	Annual Dental Visit	Obtained from: SNAC -Currently in HEDIS 1999 -Part of Dental Plan Performance Measures (DPPM), version 1.0	Currently part of HEDIS 3.0/1998 and retained for HEDIS '99 Health plans serving Medicaid populations are required to report this measure. The measure describes the percentage of Medicaid enrolled members aged 4 through 21, who were continuously enrolled during the reporting year, and had at least one dental visit during the reporting year.	Number of Medicaid members in the denominator who had one or more dental visits with a dental provider during the reporting year	All Medicaid members age 4 through 21 as of December 31 of the reporting year who were members as of December 31 of the reporting year and who were continuously enrolled for the reporting year. Members who have had no more than one gap in enrollment of up to 45 days during the reporting year should be included in the measure.	SNAC assessed as "Current, Past, and Closely Related Pediatric Oral Health HEDIS Measures "
2.	Dental Visit By Age Two	Obtained from SNAC – source not identified	Percentage of children under age 2 who have had a dental visit			As above
3.	Dental Visit by Medicaid Children	Obtained from SNAC – source not identified	Percentage of Medicaid children enrolled in a plan that visits a dental provider at least once during the reporting year	number of Medicaid children seen by a dental provider	total number of Medicaid children enrolled in the plan	As above
4.	Annual Utilization Rate	Obtained from: SNAC Supplied by Sacramento County GMC Dental Program	Annually reported utilization rate	number of members who had at least one dental encounter during the reporting year	Average monthly number of eligible's (i.e. the total of the number of eligible's each month over the course of a year divided by 12)	As above
5.	Availability of Dentists	Obtained from: SNAC Used in Delta Dental's 1998 report card on its HMO and FFS providers	Calculates the availability of dentists for enrollees, including the number of percentage of dentist who: (1) serve members of the Medicaid population: (2) accept new members with no restrictions; (3) accept new members with some restrictions; and (4) accept no new members	Total number of dentists	1. Actual number of providers currently serving this population 2. Number of dentists, by office site (number/percentage) 3. No restrictions on number of new plan members accepted, by office site (number/percentage) 4. Some restrictions on number of new plan members accepted, by office site (number/percentage) 5. No new plan members accepted, by office site (completely closed) (number/percentage)	As above
6.	Adequacy of Provider Network	Obtained from SNAC – source not identified	Percentage/number of general dentists and pediatric dentist given plan enrollment (total and pediatric population)			As above
7.	Rate Trend	Obtained from SNAC Currently in HEDIS 1999 for managed care organizations	NCQA HEDIS measure that inquires about a plan's actual expenses per member per month and prospective trend assumptions for the reporting year and the two preceding years	Reporting Year - total actual expense PMPM and percentage change over the past 3 years	Rate Trend Assumptions - percent change in prospective rate trend assumptions used to calculate PMPM premium rates for the plan's book of business (commercial or Medicaid) for each year indicated	As above
8.	Disease Free at One Year Post Treatment	Obtained from SNAC – source not identified	Percentage of children with ECC who are disease free at one year			SNAC assessed as "Measures Assessed as Being Not Relevant, Scientifically Sound, and/or Feasible"
9.	New Caries Among Caries-active Children	Obtained from SNAC: Part of Dental Plan Performance	Proportion of all caries-active child enrollees who receive treatment for caries	number of caries active child enrollees who receive	all caries active child enrollees	As above

		Measures (DPPM), version 1.0	within the reporting year	restorative, prosthetic, endodontic, or oral surgery treatment for caries-related reasons.		
10.	Dental Repair for Children with Early Childhood Caries (ECC)	Obtained from SNAC – source not identified	Percentage of children with ECC who receive dental repair			As above
11.	Treatment of Caries - 14 year olds	Obtained from SNAC – source not identified	Proportion of a14-year-olds enrolled for one or more years that receive treatment for caries.			As above
12.	New Caries Among Caries-inactive Children	Obtained from SNAC: Part of Dental Plan Performance Measures (DPPM), version 1.0	proportion of all caries-inactive enrollees who receive treatment for caries within the reporting year	number of caries-inactive child enrollees who receive restorative, prosthetic, endodontic, or oral surgery treatment for caries-related reasons.	all caries-inactive child enrollees	As above
13.	Extraction Ratio	Obtained from SNAC: Part of Dental Plan Performance Measures (DPPM), version 1.0	The ratio of the teeth treated endodontically to the number of teeth extracted among all enrollees	total number of teeth treated endodontically during the reporting year	total number of non-third molar teeth extracted during the reporting year	As above
14.	Endodontics to Extractions Procedure Ratio (Indice)	Obtained from SNAC: Currently being used by Sacramento County GMC Dental Program	Indicator of whether primary teeth, salvageable with endodontic treatment, are being extracted	total number of primary tooth endodontic CDT-2 codes for a reporting year	Total number of primary tooth extractions CDT-2 codes for a reporting year	As above
15.	Restorations to Extractions Procedure Ratio (Indice)	Obtained from SNAC: Currently being used by Sacramento County GMC Dental Programs	Indicator of whether treatment plans are skewed towards extracting primary teeth versus restorative treatment	sum of all primary tooth restorative CDT-2 codes for the reporting year	sum of all primary tooth extraction CDT-2 codes for the reporting year	As above
16.	Restorative Treatment Ratio	Obtained from SNAC: Part of Dental Plan Performance Measures (DPPM), version 1.0	The ratio of the number of preventive procedures provided to the number of restorative procedures provided to enrollees	total number of preventive procedures provided during the reporting year	total number of direct restorative procedures provided during the reporting year	As above
17.	Treatment of Clef Lip, Cleft Palate, and Craniofacial Anomalies	Obtained from SNAC – source not identified	percentage of children with cleft lip, cleft palate, and other craniofacial anomalies who receive assessment by multidisciplinary team			As above
18.	Nerve Treatment	Obtained from SNAC – source not identified	percentage of children with posterior primary tooth pulputomy (nerve treatment) who have also had stainless steel crowns on the affected teeth			As above
19.	Space Maintainer	Obtained from SNAC – source not identified	Percentage of children with a posterior primary tooth premature extraction that have subsequently had a space maintainer placed			As above
20.	Broken Appointments	Obtained from SNAC – source not identified	number of appointments broken by patients. Failure to keep regular or recall appointments can negatively impact upon a patient's oral health status			As above
21.	Claims Processed	Obtained from SNAC: Currently used in Delta Dental's 1998 report card on HMO and FFS providers	Percentage of claims processed within 15 calendar days			As above
22.	Provider Compensation and Dentist Under Capitation	Obtained from SNAC: Measure being collected under California's Medi-Cal program				As above
23.	Board Certification	Obtained from SNAC: Used in Delta Dental's 1998 report card on its HMO and FFS providers	Number/percentage of participating dentists that are board certified. Similar to HEDIS measure "board certification/residency completion"	number of dentists who are board certified that serve a particular population	number of dentists serving the same population	As above
24.	Dentist Turnover Rate	Obtained from SNAC: Used in Delta Dental's 1998 report card on its HMO and FFS providers	percentage of annual dentist turnover rate (resignations)			As above
25.	Reenrollment	Obtained from SNAC: Used in Delta Dental's 1998 report card on its HMO and FFS providers	percentage of members (primary enrollees) who re-enrolled			As above
26.	Dental plan members' experiences: adult dental plan members' ratings of how easy it was for them to find a dentist	Obtained from CAHPS: http://www.qualitymeasures.ahrq.gov/	This measure is used to assess how easy it was for adult dental plan patients to find a dentist. Patients rate ease of finding a dentist on a scale from 0 to 10, where 0 is extremely difficult and 10 is extremely	Patients' ratings of how easy it was to find a dentist on a scale from 0 to 10, where 0 is extremely difficult and 10 is extremely	Dental plan patients age 18 years and older who answered the "Overall Ratings - Finding a Dentist" question on the CAHPS Dental Plan Survey	CAHPS Survey

			easy.	easy.		
27.	Dental plan members' experiences: adult dental plan members' ratings of their dental care.	Obtained from CAHPS: http://www.qualitymeasures.ahrq.gov/	This measure is used to assess adult dental plan patients' perceptions of their dental care. Patients rate dental care received on a scale from 0 to 10, where 0 is the worst dental care possible and 10 is the best dental care possible.	Patients' ratings of their dental care they received on a scale from 0 to 10, where 0 is the worst dental care possible and 10 is the best dental care possible	Dental plan patients age 18 years and older who answered the "Overall Ratings - Dental Care" question on the CAHPS Dental Plan Survey	CAHPS Survey
28.	Dental plan members' experiences: adult dental plan members' ratings of their dental plan	Obtained from CAHPS: http://www.qualitymeasures.ahrq.gov/	This measure is used to assess adult dental plan patients' perceptions of their dental plan. Patients rate their dental plan a scale from 0 to 10, where 0 is the worst dental plan possible and 10 is the best dental plan possible.	Patients' ratings of their dental plan on a scale from 0 to 10, where 0 is the worst dental plan possible and 10 is the best dental plan possible.	Dental plan patients age 18 years and older who answered the "Overall Ratings - Dental Plan" question on the CAHPS Dental Plan Survey	CAHPS Survey
29.	Dental plan members' experiences: adult dental plan members' ratings of their regular dentist	Obtained from CAHPS: http://www.qualitymeasures.ahrq.gov/	This measure is used to assess adult dental plan patients' perceptions of their regular dentist. Patients rate their dentists on a scale from 0 to 10, where 0 is the worst regular dentist possible and 10 is the best regular dentist possible.	Patients' ratings of their dentists on a scale from 0 to 10, where 0 is the worst regular dentist possible and 10 is the best regular dentist possible.	Dental plan patients age 18 years and older who answered the "Overall Ratings - Regular Dentist" questions on the CAHPS Dental Plan Survey	CAHPS Survey
30.	Dental plan members' experiences: percentage of adult dental plan members who indicated how often they had a good experience with access to dental care.	Obtained from CAHPS: http://www.qualitymeasures.ahrq.gov/	This measure is used to assess the percentage of adult dental plan patients who indicated how often ("Never," "Sometimes," "Usually," or "Always") or whether or not ("Definitely Yes," "Somewhat Yes," "Somewhat No," or "Definitely No") they had a good experience with access to dental care.	The number of "Never," "Sometimes," "Usually," or "Always" responses and "Definitely Yes," "Somewhat Yes," "Somewhat No," or "Definitely No" responses on the "Access to Dental Care" questions	Dental plan patients age 18 years and older who answered the "Access to Dental Care" questions on the CAHPS Dental Plan Survey	CAHPS Survey
31.	Dental plan members' experiences: percentage of adult dental plan members who indicated how often they had a good experience with dental plan costs and services	Obtained from CAHPS: http://www.qualitymeasures.ahrq.gov/	This measure is used to assess the percentage of adult dental plan patients who indicated how often ("Never," "Sometimes," "Usually," or "Always") or whether or not ("Definitely Yes," "Somewhat Yes," "Somewhat No," or "Definitely No") they had a good experience with dental plan costs and services.	The number of "Never," "Sometimes," "Usually," or "Always" responses and "Definitely Yes," "Somewhat Yes," "Somewhat No," or "Definitely No" responses on the "Dental Plan Costs and Services" questions	Dental plan patients age 18 years and older who answered the "Dental Plan Costs and Services" questions on the CAHPS Dental Plan Survey	CAHPS Survey
32.	Dental plan members' experiences: percentage of adult dental plan members who indicated how often they had a good experience with different aspects of care from dentists and staff.	Obtained from CAHPS: http://www.qualitymeasures.ahrq.gov/	This measure is used to assess the percentage of adult dental plan patients who indicated how often ("Never," "Sometimes," "Usually," or "Always") they had a good experience with different aspects of care from dentists and staff.	The number of "Never," "Sometimes," "Usually," or "Always" responses on the "Care from Dentists and Staff" questions	Dental plan patients age 18 years and older who answered the "Care from Dentists and Staff" questions on the CAHPS Dental Plan Survey	CAHPS Survey
33.	Dental Visit	Obtained from SNAC: PHP 22A	the percentage of patients who had at least one dental visit during the measurement year (differs from NCQA—data source is CHCs; broader age range)			Similar to HEDIS
34.	ED Use from Maine	Obtained from: https://gateway.maine.gov/	Emergency Department Visits (rate per 1,000 adult MaineCare members who have 11 continuous months enrollment in the State Fiscal Year). This measure is limited to members up to age 64 years. Members who have other comprehensive health insurance, Medicare, Part A or B are not included.			Unique
35.	NYSDOH AIDS Institute (PSS-HIV)	Obtained from: http://www.qualitymeasures.ahrq.gov/	Percentage of HIV positive adolescent and adult patients who reported whether their providers asked them about their teeth and made a referral to a dentist if needed.	The number of patients who indicated “Yes”, “No”, “Not Sure” to the item, “My providers asked about my teeth and made a referral if I needed to see a dentist.”	HIV positive adolescents and adults 13 years of age and older who had at least 2 HIV primary care visits in the last 12 months and completed the survey.	Special Population
36.	Topical fluoride	Obtained from: http://www.gwumc.edu/	The percentages of enrollees from birth through age twenty, stratified by age (<1, 1-2, 3-5, 6-9, 10-14, 15-18, and 19-20 years) who are continuously enrolled for a			Duplicate. Similar to others

			period of at least twelve months (allowing one break in service of up to forty-five days) who, within the reporting year, received at least one topical application of fluoride			
37.	Dental Caries	Obtained from: http://www.colorado.gov/	Dental Caries ages 1-8 years of age			Duplicate. Similar to others
38.	Sealants	Obtained from: http://www.colorado.gov/	The percentage of children who have received protective sealants on their first permanent molars by age 6 (or when adequately erupted)			Duplicate. Similar to others
39.	Preventive dental Services	Obtained from: http://www.colorado.gov/	Total EPSDT eligible children receiving preventative dental services			Duplicate. Similar to others
40.	ACHS: Repeat Sealant	Obtained from NQMC: In process list	Oral health - children: percentage of teeth requiring repeat fissure sealant treatment within 24 months of the initial fissure sealant treatment.			Similar to others
41.	ACHS: OPG for 18 – 24 years	Obtained from NQMC: In process list	Oral health: percentage of new patients in the age bracket 18 to 24 years who had an orthopantomogram (OPG) film taken or ordered as part of the first general course of care, during the time period under study.			Similar to others
42.	ACHS: Intraoral film for 18 – 24 years	Obtained from NQMC: In process list	Oral health: percentage of new patients in the age bracket 18 to 24 years who had intraoral films taken as part of the first general course of care, during the time period under study.			Similar to others
43.	ACHS: Updated medical history	Obtained from NQMC: In process list	Oral health: percentage of patients with completed and updated medical history, during the time period under study.			Consensus - Not feasible with administrative data
44.	ACHS: Completed charting	Obtained from NQMC: In process list	Oral health: percentage of patients with completed charting at initial assessment for general course of care, during the time period under study.			Consensus - Not feasible with administrative data
45.	ACHS: Radiographs	Obtained from NQMC: In process list	Oral health: percentage of radiographs (bite-wing) that meet all of the 6 criteria (as outlined), during the time period under study.			Similar to others
46.	Oral Health Access	Obtained from: http://www.qualityforum.org/	The percentage of children who had an oral health exam and proper follow-up performed. Four rates are reported: 1. By 2 years of age 2. By 6 years of age 3. By 13 years of age 4. By 18 years of age			Interpretation issues
47.	Preventive dental visits	Obtained from: http://www.qualityforum.org/	Assesses how many preventive dental visits in a 12 month period (does not include visits related to specific dental issues)			Duplicate. Similar to others
48.	Comprehensive Well Care for Children by Age 2 years	Obtained from: http://www.qualityforum.org/	The percentage of children who turned two years old during the measurement year and who had the following indicators of comprehensive well care documented between 6 months and 2 years of life. Eight rates across three domains are reported: Protection of Health 1. Immunizations 2. Iron Deficiency Assessment and Supplementation 3. Oral Health Access 4. Lead Screening Healthy Cognitive, Social-Emotional,			Interpretation Issues

			Behavioral and Physical Development 5. Developmental Screening 6. Autism Screening 7. Physical Growth Assessment Protection of Health Through a Safe Environment 8. Environmental Tobacco Counseling Type: Process			
49.	The GPRA measure of IHS AI/AN patients – Appropriate topical fluoride	Obtained from: http://www.health.state.mn.us/	Count only (no percentage comparison to denominator). The total number of appropriate topical fluoride applications based on a maximum of four per patient per year.			Specific to IHS
50.	The GPRA measure of IHS AI/AN patients – At least 1 topical fluoride	Obtained from: http://www.health.state.mn.us/	Count only (no percentage comparison to denominator). The total number of patients with at least one topical fluoride treatment during the Report Period.			Specific to IHS
51.	IHS Access to oral health care	Obtained from: http://www.ihs.gov/	Number of beneficiaries with one or more documented encounters with IHS dental personnel / User population	Number of beneficiaries with one or more documented encounters with IHS dental personnel	User population	Specific to IHS
52.	IHS Dental Sealants placed (as an assessment of our primary prevention efforts)	Obtained from: http://www.ihs.gov/	There is no numerator, nor denominator. This assessment is a simple count of sealants placed within the data collection year			Specific to IHS
53.	IHS Number of Patients Receiving One or More Topical Fluoride Applications (as an assessment of our primary prevention efforts)	Obtained from: http://www.ihs.gov/	There is no numerator, nor denominator. This assessment is a simple count of patients receiving one or more applications of topical fluoride in the data collection year.			Specific to IHS

TABLE 2: Low scoring measure concepts

(Measure concepts that did not score above 7 in all criteria following Delphi round II)

	Category	Title	Source	Description	Numerator	Denominator	Validity		Feasibility		Importance	
							MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN	MEAN
1	Clinical Service Quality	Deciduous teeth extracted following pulp treatment	Obtained from NQMC: Australian Council on Healthcare Standards	Percentage of deciduous teeth extracted (for pathological reasons within 6 months following pulpotomy treatment, during the time period under study.	Total number of deciduous teeth extracted* (for pathological reasons) within 6 months following pulpotomy treatment, during the time period under study	Total number of deciduous teeth receiving a pulpotomy treatment* in the period of assessment, during the time period under study	5	5	5	5	5	5
2	Clinical Service Quality	Re-treatment after sealant	Obtained from NQMC: Australian Council on Healthcare Standards	Percentage of teeth requiring re-treatment (restoration, endodontic or extraction, but not including Pit & Fissure Sealants) within 24 months of the initial fissure sealant treatment.	Total number of teeth requiring re-treatment (restoration, endodontic or extraction, but not including Pit & Fissure Sealants)* within 24 months of the initial fissure sealant treatment	Total number of teeth receiving a fissure sealant treatment* in the period of assessment, during the time period under study	5	6	7	6	5	6
3	Clinical Service Quality	Complications following routine extraction	Obtained from NQMC: Australian Council on Healthcare Standards	Percentage of attendances for complications within 7 days of routine extraction, during the time period under study	Total number of attendances for complications* within 7 days of routine extraction, during the time	Total number of simple extractions*, during the time period under study	4	5	4	4	5	5

					period under study							
4	Clinical Service Quality	Complications following surgical extraction	Obtained from NQMC: Australian Council on Healthcare Standards	Percentage of attendances for complications within 7 days of surgical extraction, during the time period under study	Total number of attendances for complications* within 7 days of surgical extraction, during the time period under study	Total number of teeth surgically extracted*, during the time period under study	4	5	4	4	5	5
5	Clinical Service Quality	Endodontic treatment completion	Obtained from NQMC: Australian Council on Healthcare Standards	Percentage of completed courses of endodontic treatment on the same tooth within 6 months of initial treatment, during the time period under study	Total number of completed courses of endodontic treatment on the same tooth within 6 months of initial treatment, during the time period under study	Total number of endodontic treatments* commenced, during the time period under study	6	6	5	4	6	6
6	Clinical Service Quality	Extractions after endodontic treatment	Obtained from NQMC: Australian Council on Healthcare Standards	Percentage of teeth extracted within 12 months of completing a course of endodontic treatment, during the time period under study.	Total number of teeth extracted* within 12 months of completing a course of endodontic treatment, during the time period under study	Total number of teeth on which there has been a completed course of endodontic treatment*, during the time period under study	5	5	7	6	5	6
7	Clinical Service Quality	Re-treatment after endodontic treatment	Obtained from NQMC: Australian Council on Healthcare Standards	Percentage of teeth retreated between 1 and 6 months of completing a course of endodontic treatment, during the time period under study.	Total number of teeth retreated* between 1 and 6 months of completing a course of endodontic treatment, during the time period under study	Total number of teeth on which there has been a completed course of endodontic treatment*, during the time period under study	7	6	5	5	7	6
8	Clinical Service Quality	Re-treatment after restorative treatment	Obtained from NQMC: Australian Council on Healthcare Standards	Percentage of teeth retreated within 6 months of an episode of restorative treatment, during the time period under study.	Total number of teeth retreated* within 6 months of an episode of restorative treatment, during the time period under study	Total number of teeth restored*, during the time period under study	6	6	6	5	6	6
9	Diagnosis	Examinations	Obtained from SNAC: Used in Delta Dental's 1998 report card on HMO and FFS providers	Number of examinations per 1,000 enrollees	number of enrollees who received examinations	number of enrollees divided by 1000	5	5	8	8	7	7
10	Diagnosis	Diagnostic Rate	Obtained from SNAC: Currently being used by Sacramento County GMC Dental Program	Indicator of whether a comprehensive oral examination, dental cleaning and appropriate radiographs are being performed in a single office visit	Total number of CDT-2 code subcategories (clinical oral evaluations, radiographs/diagnostic imaging and dental prophylaxis) performed on the same date of service within the reporting year	Total number of CDT-2 code subcategory "clinical oral evaluation" performed within the reporting year	4	5	7	6	5	5
11	Diagnosis	OPG for new patients	Obtained from NQMC: Australian Council on Healthcare Standards	Percentage of new patients aged under 18 years who had an orthopantomogram (OPG) film taken or ordered as part of the first general course of care, during the time period under study	Total number of new patients aged under 18 years who had an orthopantomogram (OPG) film taken or ordered as part of the first general course of care, during the time period under study. Include only data for the date of the examination.	Total number of new patients* aged under 18 years, during the time period under study	4	5	7	7	4	5
12	Diagnosis	Intraoral films for new patients	Obtained from NQMC: Australian Council on Healthcare Standards	Percentage of new patients aged under 18years who had intaoral films taken as part of the first general course of care, during the time period under study	Total number of new patients aged under 18 years who had intraoral films taken as part of the first general course of care, during the time period under study. Include only data for the date of the examination.	Total number of new patients* aged under 18 years, during the time period under study	5	6	7	7	5	6
13	Diagnosis	Assessment of Disease Status	Obtained from: https://www.cms.gov/	Percentage of all child enrollees who have had their periodontal and caries status assessed within the past year	Number of child enrollees who have had their periodontal and caries status assessed within the past year	total number of child enrollees	6	6	4	4	6	6
14	Diagnosis and Prevention	Diagnostic and Preventive Procedures	Obtained from SNAC: Currently used in Delta Dental's 1998 report card on HMO and FFS providers	Number of diagnostic and preventive procedures compared to all procedures	Number of diagnostic and preventive procedures	total number of procedures	6	6	8	8	6	6
15	Oral Health Status	Children Who Have Dental Decay or Cavities	Obtained from NQF : NCHS measure	Assesses if children age 1-17 years have had tooth decay or cavities in the past 6 months	Whether child had cavities or decayed teeth in past 6 months.	Children and adolescents age 1-17 years	6	6	2	3	7	7
16	Prevention	Preventive Treatment for Caries-active Children	Obtained from SNAC: Part of Dental Plan Performance Measures (DPPM), version	Percentage of all caries-active child enrollees who receive a dental sealant or a fluoride treatment within the reporting year	number of child enrollees with active caries that receive dental sealant or fluoride treatment	number of child enrollees who have been assessed and have active caries	7	6	4	5	7	7

			1.0		during the reporting year							
17	Prevention	Fluoride Therapy	Obtained from SNAC – source not identified	Proportion of high caries risk enrollees receiving supplemental fluoride therapy	number of high caries risk enrollees receiving supplemental fluoride therapy	total number of high caries risk enrollees	7	7	3	3	7	6
18	Prevention	Fluoride Exposure	Obtained from SNAC – source not identified	Percentage of children who received a fluoride exposure assessment	Number of children who receive a fluoride exposure assessment	total number of children	4	5	3	3	5	6
19	Prevention	Dental Sealant Prevalence Among School Children	Obtained from SNAC: part of Dental Plan Performance Measures (DPPM), version 1.0	Percent of 8-14 year old children who have one or more sealed permanent molar teeth	number of 8-14 year old children surveyed who have at least one sealant on a permanent molar tooth	number of 8-14 year old children surveyed	4	5	4	5	6	6
20	Prevention	High-risk Eight Year Olds with Sealants	Obtained from SNAC – source not identified	Proportion of high-risk eight year olds with sealants on four first molar occlusal surfaces	number of high-risk eight year olds with sealants on four first molar occlusal surfaces	total number of high-risk eight year olds	7	7	4	5	7	7
21	Prevention	Advising Mothers About Baby Bottle Tooth Decay	Obtained from SNAC: Recommended measure from NCQA's Public Call for Measures	Percentage of women (pre/postpartum) that receive advice on preventing baby bottle tooth decay	Number of women (pre/postpartum) that receive advice on preventing baby bottle tooth decay	number of pre/postpartum women responding to this survey item	4	5	3	3	7	7
22	Prevention	Prophy/Fluoride Service Rate	Obtained from SNAC: Currently being used by Sacramento County GMC Dental Program	Service rate for selected preventive procedures	Total incidences of CDT-2 codes 01120, 01201, 01203, 01330 provided during the reporting year multiplied times 1000	Unduplicated number of members enrolled in the dental plan during the reporting year.	6	5	8	8	5	5
23	Prevention	Prophylaxis	Obtained from SNAC: Part of Dental Plan Performance Measures (DPPM), version 1.0 and used in Delta Dental's 1998 report card on HMO and FFS providers.	Proportion of enrollees who have a prophylaxis procedure during the reporting year, or the number of prophylaxis per 1,000 enrollees	number of enrollees that received a prophylaxis during the reporting year	Number of enrollees	7	6	8	8	6	5
24	Prevention	Sealant to Prophy Procedure Ratio (Indice)	Obtained from SNAC: currently being used by Sacramento County GMC Dental Program	Indicator of whether sealants are being considered within treatment plans	Total number of CDT-2 code 01351 performed during reporting year	Total number of CDT-2 codes 01120, 01201, 01203 and 01330	4	5	8	8	6	6
25	Prevention	Sealant Service Rate	Obtained from SNAC: Currently being used by Sacramento County GMC Dental Program	Services rate for dental sealant procedures	Total incidences of CDT-2 code 01351 provided during the reporting year multiplied time 1000	Unduplicated number of members enrolled in the dental plan during the reporting year.	6	6	8	8	7	7
26	Prevention	Preventive Treatment for Caries-active Children	Obtained from SNAC – source not identified	Percentage of all caries-active child enrollees who receive a dental sealant or a fluoride treatment within the reporting year.	number of caries-active child enrollees who receive a dental sealant or a fluoride treatment within the reporting year.	number of caries-active child enrollees	6	7	5	5	8	8
27	Prevention (Non-Dentist)	Primary Caries Prevention Intervention as Part of Well/Ill Child Care as Offered by Primary Care Medical Providers	Obtained from NQF: University of Minnesota	The measure will a) track the extent to which the PCMP or clinic (determined by the provider number used for billing) applies FV as part of the EPSDT examination and b) track the degree to which each billing entity's use of the EPSDT with FV codes increases from year to year (more children varnished and more children receiving FV four times a year according to ADA recommendations for high-risk children).	The number of EPSDT examinations done with FV.	All high-risk children (Medicaid/CHIP-eligible) who receive an EPSDT examination from a provider (PCMP or clinic).	5	5	5	5	5	6
28	Satisfaction / Experience	Comfort During Treatment	Obtained from SNAC: Used in Delta Dental's 1998 report card on its HMO and FFS providers	Percentage of parents/caregivers who felt that their child's dental provider made them feel comfortable during treatment (for commercial and Medicaid)	Number of parents/caregivers who felt that their child's dental provider made them feel comfortable during treatment (for commercial and Medicaid)	number of parents/caregivers responding to this survey item	7	6	7	6	6	6
29	Satisfaction / Experience	Length of Time Spent Waiting	Obtained from SNAC: Used in Delta Dental's 1998 report card on its HMO and FFS providers	Percentage of parents/caregivers who were satisfied with the length of time spent in the waiting room (for commercial and Medicaid).	Number of parents/caregivers who were satisfied with the length of time spent in the waiting room (for commercial and Medicaid).	number of parents/caregivers responding to this survey item	6	6	7	6	5	5
30	Satisfaction / Experience	Office Reminder/Recall System	Obtained from SNAC: Used in Delta Dental's 1998 report card on its HMO and FFS providers	Percentage of parents/caregivers who were satisfied with the dental office reminder/recall system (for commercial and Medicaid).	Number of parents/caregivers who were satisfied with the dental office reminder/recall system (for commercial and Medicaid).	number of parents/caregivers responding to this survey item	7	6	7	7	5	6
31	Satisfaction / Experience	Emergency/After-Hours care	Obtained from SNAC: Used in Delta Dental's 1998 report card on HMO and FFS providers	Percentage of parents/caregivers who were satisfied with the emergency and after-hours care provisions available to their children (for commercial and Medicaid).	Number of parents/caregivers who were satisfied with the emergency and after-hours care provisions available to their children (for	number of parents/caregivers responding to this survey item	6	6	7	7	6	7

					commercial and Medicaid).							
32	Satisfaction / Experience	Courtesy and Professionalism of the Dentist	Obtained from SNAC: Used in Delta Dental's 1998 report card on its HMO and FFS providers	Percentage of parents/caregivers who felt their dentist was courteous and professional to them and their child (for commercial and Medicaid).	Number of parents/caregivers who felt their dentist was courteous and professional to them and their child (for commercial and Medicaid).	number of parents/caregivers responding to this survey item	7	6	7	6	6	6
33	Satisfaction / Experience	Courtesy and Professionalism of Dental Office Staff	Obtained from SNAC: Used in Delta Dental's 1998 report card on its HMO and FFS providers.	Percentage of parents/caregivers who felt the dentist office staff was courteous and professional to them and their child (for commercial and Medicaid).	Number of parents/caregivers who felt the dentist office staff was courteous and professional to them and their child (for commercial and Medicaid).	number of parents/caregivers responding to this survey item	7	6	7	6	6	6
34	Treatment	Basic restorative service rate	Obtained from SNAC: currently being used by Sacramento County GMC Dental Program.	Service rate for basic restorative procedures	total incidences of CDT-2 codes 02110, 02120, 02130, 02131, 02336, 02380, 02381, 02382, 02930 provided during the reporting year multiplied times 1000	Unduplicated number of members enrolled in the dental plan during the reporting year.	6	6	8	8	6	6
35	Treatment	Restorative Procedures	Obtained from SNAC: currently used in Delta Dental's 1998 report card on HMO and FFS providers	Number of restorative procedures compared to all procedures	number of restorative procedures	total number of procedures	6	6	8	8	6	6
36	Treatment	New Caries Among Caries-active Children	Obtained from: https://www.cms.gov/	Proportion of all caries-active child enrollees who receive treatment for caries-related reasons within the reporting year	number of caries-active child enrollees who receive treatment for caries-related reasons within the reporting year	number of caries-active child enrollees	5	6	4	4	7	7
37	Treatment	New Caries Among Caries-inactive Children	Obtained from: https://www.cms.gov/	proportion of all previously caries-inactive child enrollees who receive treatment for caries-related reasons within the reporting year	Number of previously caries-inactive child enrollees who receive treatment for caries-related reasons within the reporting year	number of previously caries-inactive child enrollees	5	6	3	3	7	7
38	Use of (Any Non-Dentist) Services	Total Eligible's Receiving Oral Health Services Provided by a Non-Dentist Provider	Obtained from: CMS 416 Measures	Enter the unduplicated number of children receiving at least one oral health service as defined a HCPCS or CDT code furnished by a licensed practitioner that is not a dentist. For example, a pediatrician that applies a fluoride varnish or an independently practicing dental hygienist not under the supervision of a dentist furnishing a prophylaxis. These are only examples and are not intended to limit your reporting. NOTE: Due to the variance in State Practice Acts some States may not have data to report on this line.	Unduplicated number of children receiving at least one oral health service as defined a HCPCS or CDT code furnished by a licensed practitioner that is not a dentist.	Total unduplicated number of all individuals under the age of 21 determined to be eligible for EPSDT services, distributed by age and by basis of Medicaid eligibility.	6	6	7	7	6	6

TABLE 3: High-scoring measure concepts

(Measure concepts that scored above 7 in all criteria following Delphi round II)

	Category	Title	Source	Description	Numerator	Denominator	Validity		Feasibility		Importance	
							MEDIAN	MEAN	MEDIAN	MEAN	MEDIAN	MEAN
1	Diagnosis	Use of Dental Services by Children - periodic or comprehensive examination	Obtained from SNAC: PHP 35 HRSA	Percentage of enrollees who received a comprehensive or periodic exam	number of enrollees who received comprehensive or periodic exam	Number of enrollees	8	8	8	8	8	8
2	Diagnosis	Examination Rate	Obtained from SNAC: Part of Dental Plan Performance Measures	The proportion of enrollees who receive an examination during the reporting year	Number of enrollees who receive an examination during the reporting year	Number of enrollees	7	7	8	8	7	8

			(DPPM), version 1.0									
3	Diagnosis	Total Eligible's Receiving Diagnostic Dental Services	Obtained from: CMS 416 measures	Enter the unduplicated number of children receiving at least one diagnostic dental service by or under the supervision of a dentist, as defined by HCPCS codes D0120 – D0180 (CDT codes D0120 – D0180).	Unduplicated number of children receiving at least one diagnostic dental service by or under the supervision of a dentist, as defined by HCPCS codes D0120 – D0180 (CDT codes D0120 – D0180).	Total unduplicated number of all individuals under the age of 21 determined to be eligible for EPSDT services, distributed by age and by basis of Medicaid eligibility.	7	7	8	8	7	7
4	Prevention	Total Eligible's Receiving Preventive Dental Services	Obtained from CMS 416 Measures	Enter the unduplicated number of children receiving at least one preventive dental service by or under the supervision of a dentist as defined by HCPCS codes D1000 - D1999 - (CDT codes D1000-D1999)	Unduplicated number of children receiving at least one preventive dental service by or under the supervision of a dentist as defined by HCPCS codes D1000 - D1999 - (CDT codes D1000-D1999)	Total unduplicated number of all individuals under the age of 21 determined to be eligible for EPSDT services, distributed by age and by basis of Medicaid eligibility.	7	6	8	8	7	7
5	Prevention	Children Who Received Preventive Dental Care	CAHMI	Assesses how many preventive dental visits during the previous 12 months	Percentage of children who had one or more preventive dental visits in the past 12 months.	Children age 1-17 years	7	6	8	8	7	7
6	Prevention	Dental Sealant Ratio	Obtained from: NCQA	The ratio of sealed occlusal surfaces in permanent molar teeth to restored occlusal surfaces in permanent molar teeth. This measure would examine first molars in 5-8 year olds and second molars in 11-14 year-olds.	Number of sealed occlusal surfaces in permanent molar teeth	Number of restored occlusal surfaces in permanent molar teeth	7	7	8	8	7	7
7	Prevention	Dental Sealant Ratio	Obtained from SNAC – source not identified	The measure examines the ratio of sealed occlusal surfaces in permanent molar teeth to restored occlusal surfaces in permanent teeth	number of sealed occlusal surfaces in permanent molar teeth	number of restored occlusal surfaces in permanent molar teeth. Since ideally, sealants should be placed as soon after eruption as possible, timeliness of the sealant application is an important component of assessing plan performance. Thus, by stratifying the measure by age groups when first and second molars are most likely to appear (i.ie 5-8 for the first molars and 11-14 for the second) will make for a more meaningful comparison between plans.	7	7	7	8	7	7
8	Prevention	Dental Sealants Placed Per Available Tooth Year	Obtained from SNAC – source not identified	The proportion of teeth available sealed in the biologic year(s) following the eruption of the permanent molar teeth	The number of individual teeth receiving sealants subsequent to the available patient pool achieving the ages defined in the denominator. These data would be derived from claims or encounter from data on CDT-2 code 01351	The number of permanent molar teeth available for sealant application in the population being served by the plan. This includes both the first and second molar eruptions and makes the assumption that in the population served, there is a normal eruption distribution where the first molars erupt during the 6th year of life and the second molars erupt during the 12th year. These data would be calculated based on the number of available recipients as determined by eligibility data.	7	6	7	7	7	7
9	Prevention	Total Eligible's Receiving a Sealant on a Permanent Molar Tooth	Obtained from CMS 416 Measures	Enter the unduplicated number of children in the age categories of 6-9 and 10-14 who received a sealant on a permanent molar tooth regardless of whether the sealant was provided by a dentist or a non-dentist, as defined by HCPCS code D1351 (CDT code D1351).	Unduplicated number of children in the age categories of 6-9 and 10-14 who received a sealant on a permanent molar tooth regardless of whether the sealant was provided by a dentist or a non-dentist, as defined by HCPCS code D1351 (CDT code D1351).	Total unduplicated number of all individuals under the age of 21 determined to be eligible for EPSDT services, distributed by age and by basis of Medicaid eligibility.	7	7	7	8	7	7
10	Satisfaction / Experience	Quality of care	Obtained from SNAC: Used in Delta Dental's 1998 report card on its HMO and FFS providers	Percentage of parents/caregivers who are highly satisfied with the quality of dental care their child receives (for commercial and Medicaid).	Number of parents/caregivers who are highly satisfied with the quality of dental care their child receives (for commercial and Medicaid).	number of parents/caregivers responding to this survey item	7	7	7	7	7	7
11	Satisfaction / Experience	Time to Schedule an Appointment	Obtained from SNAC: Used in Delta Dental's 1998 report card	Percentage of parents/caregivers who are satisfied with the time it took to schedule an appointment for their child (for commercial and	Number of parents/caregivers who are satisfied with the time it took to schedule an appointment for their child (for commercial and	number of parents/caregivers responding to this survey item	7	7	7	7	7	6

			on its HMO and FFS providers	Medicaid)	Medicaid)								
12	Satisfaction / Experience	Treatment Provided in a Timely Manner	Obtained from SNAC: used in Delta Dental's 1998 report card on its HMO and FFS providers	Percentage of parents/caregivers who felt that their child received the care they needed in a timely manner (for commercial and Medicaid)	Number of parents/caregivers who felt that their child received the care they needed in a timely manner (for commercial and Medicaid)	number of parents/caregivers responding to this survey item	7	7	7	7	7	7
13	Satisfaction / Experience	Dentist's Discussion of Options for Treatment	Obtained from SNAC: Used in Delta Dental's 1998 report card on its HMO and FFS providers	Percentage of parents/caregivers who felt that their child's dentist discussed options for treatment (for commercial and Medicaid)	Number of parents/caregivers who felt that their child's dentist discussed options for treatment (for commercial and Medicaid)	number of parents/caregivers responding to this survey item	7	6	7	7	7	7
14	Satisfaction / Experience	Unmet Dental Care Wants	Obtained from SNAC –source not identified	Proportion of enrollees (in the case of children, their parents) reporting unmet dental care wants as determined by survey	Number of enrollees reporting unmet dental care wants	number of enrollees	7	6	7	7	7	7
15	Treatment	Total Eligible's Receiving Dental Treatment Services	Obtained from: CMS 416 Measures	Enter the unduplicated number of children receiving at least one treatment service by or under the supervision of a dentist, as defined by HCPCS codes D2000 - D9999 (CDT codes D2000 - 09999).	Unduplicated number of children receiving at least one treatment service by or under the supervision of a dentist, as defined by HCPCS codes D2000 - D9999 (CDT codes D2000 - 09999).	Total unduplicated number of all individuals under the age of 21 determined to be eligible for EPSDT services, distributed by age and by basis of Medicaid eligibility.	7	6	8	8	7	7
16	Use of (Any Dentist + Non-Dentist) Services	Total Eligible's Receiving any Dental or Oral Health Service	Obtained from : CMS- 416 measures	Enter the unduplicated number of children who received a dental service by or under the supervision of a dentist or an oral health service by a non-dentist. A child should only be counted once on this line even if the child received a dental service and an oral health service.	Unduplicated number of children who received a dental service by or under the supervision of a dentist or an oral health service by a non-dentist. A child should only be counted once on this line even if the child received a dental service and an oral health service.	Total unduplicated number of all individuals under the age of 21 determined to be eligible for EPSDT services, distributed by age and by basis of Medicaid eligibility.	7	7	7	7	7	6
17	Use of (Any) Services	Dental care: HEDIS® 2011: Healthcare Effectiveness Data & Information Set	Obtained from: NCQA and Some information at NQMC	Percentage of members 2 through 21 years of age who had at least one dental visits during the measurement year	Medicaid members who had one or more dental visits with a dental practitioner during the measurement year. A member had a dental visit if a submitted claim/encounter contains any code in Table ADV-A of the original measure documentation.	Medicaid members* 2 through 21 years of age as of December 31 of the measurement year	7	7	8	8	7	7
18	Use of (Any) Services	Total Eligibles Receiving Any Dental Services	Obtained from CMS 416 Measures	Enter the unduplicated number of children receiving at least one dental service by or under the supervision of a dentist as defined by HCPCS codes D0100 - D9999 (CDT codes D0100 - D9999).	Unduplicated number of children receiving at least one dental service by or under the supervision of a dentist as defined by HCPCS codes D0100 - D9999 (CDT codes D0100 - D9999).	Total unduplicated number of all individuals under the age of 21 determined to be eligible for EPSDT services, distributed by age and by basis of Medicaid eligibility.	7	7	8	8	7	7
19	Usual Source of Care	Source of Dental Care	Obtained from SNAC –source not identified	Proportion of enrollees having a regular/usual source of dental care as determined by survey of enrollees (in the case of children, their parents).	Number of enrollees having a regular/usual source of dental care	number of enrollees	7	7	6	7	7	7
20	Cost	Value of Services	Obtained from SNAC: Used in Delta Dental's 1998 report card on its HMO and FFS providers	Percentage of every premium dollar that pays for dental ~~treatment~~ services	Total expenditure for dental services	Total expenditure for dental benefits (clinical services + plan administration)	7	6	7	6	7	7
21	Cost	Medicaid Expenditures on Pediatric Dental Care	Obtained from SNAC: HCFA measure	Percentage of Medicaid child health expenditures that is expended by the plan on dental care.	Total Medicaid expenditures for dental services	Total Medicaid expenditures for child health services	7	7	7	7	7	7

APPENDIX 3: Additional sets of measures identified

Category	Description	Numerator	Denominator
HRSA Collaborative Proposed measures http://www.nationaloralhealthconference.com/			
Annual Dental Visit	The percentage of patients who had at least one dental visit during the measurement year.	Number of patients with one or more dental visits with a dental practitioner during the measurement year.	All eligible patients served by the HRSA funded program.
Cavity Free	Percentage of oral health patients that are caries free	Number of oral health patients from the denominator who are Caries Free.	All oral health patients seen in the measurement year
Oral health education: Service given by a dentist or dental hygienist, dental assistant and/or dental case manager	Percentage of all oral health patients who received oral health education at least once in the measurement year	Number of oral health patients who received oral health education at least once in the measurement year.	Number of oral health patients that received a clinical oral evaluation at least once in the measurement year.
OHI in medical setting	Percentage of children age 12 to 48 months who received patient education and anticipatory guidance for oral health in the medical setting		
Documented Comprehensive Treatment Plan (Comprehensive dental exam includes periodontal assessment as well as determination of presence of decay.] (HDC)	Percentage of all dental patients with a comprehensive or periodic recall oral exam, for whom the Phase I treatment plan is documented	Number of patients from the denominator that have a treatment plan.	Number of patients that receive a comprehensive oral exam (ADA code 0110) or a periodic recall (ADA code 0120) oral exam
Completed Comprehensive Treatment Plan	Percentage of all dental patients for whom the Phase I treatment plan is completed within a 12 month period.	Number of patients from the denominator with a completed Phase 1* treatment within 12 months of initiation.	Number of patients that receive a comprehensive oral exam (ADA code 0110) or a periodic recall (ADA code 0120) oral exam within the measurement year
Topical Fluoride	percentage of patients, assessed moderate to high risk of developing dental caries, with at least one topical fluoride treatment during the report period	number of patients, assessed moderate to high risk of developing dental caries, with at least one topical fluoride treatment during the report period	Number of patients, assessed moderate to high risk of developing dental caries, with a documented dental visit during the report period
Oral Health collaborative (ECC): Fluoride varnish applications	Percentage of children age 12 to72 months defined as higher risk with 1 or more fluoride varnish applications documented	Number of patients in the denominator with a topical fluoride varnish (D1206) documented (within the previous 12 months)	Number of children 1-6 years of age with a documented dental visit in the last 12 months
Dental Sealant	The percentage of children between the ages of 6 and 21 years who received at least a single sealant treatment from a dentist during the reporting period.	The number of children between the ages of 6 and 21 years who received at least a single sealant treatment from a dentist during the reporting period.	The percentage of all children between the ages of 6 and 21 years who had a dental visit during the reporting period. *
Managed Risk Medical Insurance Board http://www.mrmib.ca.gov/			
Annual Dental Visit	The percentage of enrolled members 2-18 years of age who had at least one dental visit during the measurement year. Members who have had no more than one gap in enrollment of up to 45 days during the measurement year should be included in this measure.	One or more dental visits with a dental practitioner during the measurement year. A member had a dental visit if a submitted claim/encounter contains any of the codes in Table ADV-A.	The eligible population for each age group and the combined total.
Treatment/prevention of Caries	Percentage of members enrolled for at least 11 of the past 12 months who received a treatment for caries or a caries-preventive procedure	Number of members enrolled for at least 11 of the past 12 months who received a treatment for caries (D2000-D2999) or a caries-preventive procedure (D1203, D1206, D1310, D1330, D1351).	Number of members enrolled for at least 11 of the past 12 months.
Continuity of Care	Percentage of members continuously enrolled in same plan for 2 years who received a comprehensive oral evaluation ro a prophylaxis in the year prior to the measurement, who also received a comprehensive or periodic oral evaluation or a prophylaxis in the measurement year	Number of members in the denominator who also received a comprehensive or periodic oral evaluation (D0120, D0150) or a prophylaxis (D1110, D1120) in the measurement year.	Number of members continuously enrolled in the same plan for 2 years with no gap in coverage who received a comprehensive oral evaluation (D0150) or a prophylaxis (D1110, D1120) in the year prior to the measurement year.
Examinations/Oral Health Evaluations	Percentage of members enrolled for at least 11 of the past 12 months who received a comprehensive or periodic oral evaluation (or, for members <3, who received an oral evaluation and counseling w/ primary caregivers) in past year	Number of members enrolled for at least 11 of the past 12 months who received a comprehensive or periodic exam (D0120 or D0150) or, for members under three years of age, who received an oral evaluation and counseling with the primary caregiver (D0145) in the past year.	Number of members enrolled for at least 11 of the past 12 months.
Filling to Preventive Services Ratio	Percentages of members enrolled for at least 11 of the past 12 months with 1+ fillings in past year who also received a topical fluoride or sealant application	Number of members enrolled for at least 11 of the past 12 months with 1 or more fillings (D2000-D2999) who received a topical fluoride (D1203 or D1204 or D1206) or sealant application (D1351).	Number of members enrolled for at least 11 of the past 12 months with one or more fillings.
Overall Utilization of Dental Services	Percentage of members continuously enrolled in the same	**Numerator (1):** Number of members	

	plan for 1, 2, and 3 years who received any dental service, including preventive services, over those periods.	continuously enrolled in the same plan for 1 year who received any dental service (D0100-D9999), including preventive services, during that year. **Numerator (2):** Number of members continuously enrolled in the same plan for 2 years who received any dental service (D0100-D9999), including preventive services, during those two years. **Numerator (3):** Number of members continuously enrolled in the same plan for 3 years who received any dental service (D0100-D9999), including preventive services, during those three years.	**Denominator (1):** Number of members continuously enrolled in the same plan for 1 year. **Denominator (2):** Number of members continuously enrolled in the same plan for 2 years. **Denominator (3):** Number of members continuously enrolled in the same plan for 3 years.
Preventive Dental Services	Percentage of members enrolled for at least 11 of the past 12 months who received any preventive dental service in the past year.	Number of members enrolled for at least 11 of the past 12 months who received any preventive dental service (D1000-D1999) in the past year.	Number of members enrolled for at least 11 of the past 12 months.
Use of Dental Treatment Services (Excludes diagnostic and preventive services)	Percentage of members enrolled for at least 11 of the past 12 months who received any dental treatment, other than diagnostic or preventive services, in the past year.	Number of members enrolled for at least 11 of the past 12 months who received any dental treatment (D2000-D9999) in the past year.	Number of members enrolled for at least 11 of the past 12 months.
State of Texas Dashboard http://www.hhsc.state.tx.us/			
Annual Dental Visit	• % of enrollees (6 to 11 months) who had a dental visit; Annual Dental Visit; • % of enrollees (12 to 23 months) who had a dental visit; • % of enrollees (1 to 3 years) who had a dental visit; • % of enrollees (4 to 6 years) who had a dental visit; • % of enrollees (7 to 10 years) who had a dental visit; • % of enrollees (11 to 14 years) who had a dental visit; • % of enrollees (15 to 20 years) who had a dental visit.		
Use of Preventive Dental Services	• % of enrollees enrolled for 12 consecutive months receiving at least one preventive visit during measurement year *; • % of enrollees enrolled for 11 of the past 12 months receiving any preventive dental service; • Number of enrollees (1 to 20 years) receiving preventive dental services; • Number and % of members (6 to 35 months) enrolled for at least 11 of the past 12 months receiving First Dental Home Services *; • % enrollees receiving two THSteps Dental Checkups per year (FREW); • % enrollees receiving one THSteps Dental Checkup per year (FREW); • % of new enrollees receiving a THSteps Dental Checkup within 90 days of enrollment (FREW); • % enrollees (0 through 20 years) receiving one or more sealants (FREW)		
Use of Dental Treatment Services	• % of members enrolled for at least 11 of the past 12 months receiving any dental treatment, other than diagnostic or preventive services, in the past year *; • Number of members enrolled for at least 11 of the past 12 months receiving orthodontic services in the past year *; • Number of enrollees (1 to 20 years) receiving dental treatment services other than preventive		
Treatment and Prevention Caries	% of members enrolled for at least 11 of the past 12 months receiving treatment for caries or a caries preventive procedure *		
Overall Utilization for Dental Services	% of members enrolled in the same health plan for one year receiving dental services		

APPENDIX 4: Citations on Oral Health-related Quality of Life (OHQOL)

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