

Access to Outpatient Dental Care for Children

Section 1. Basic Measure Information

1.A. Measure Name

Access to Outpatient Dental Care for Children

1.B. Measure Number

0234

1.C. Measure Description

Please provide a non-technical description of the measure that conveys what it measures to a broad audience.

This measure assesses the rate of participating dental providers who have seen at least one enrolled child for any dental procedure in the measurement year per eligible population of children. This rate will be expressed in terms of 1,000 eligible children (number of dental providers/1,000 enrolled children). The eligible population includes children younger than 18 years at the end of the measurement year, who have been enrolled in a Medicaid program or health plan that includes outpatient dental care for at least one 90-day period (or 3 consecutive months) within the measurement year. Dental providers will be identified by taxonomy codes and dental procedures by procedure codes, respectively, as outlined in the numerator statement below.

This measure is implemented with administrative claims data and is calculated as the rate of dental providers who have provided any dental procedure to at least one eligible child (provider numerator divided by child population denominator). A higher rate indicates better performance, as reflected by increased availability of service.

1.D. Measure Owner

The Quality Measurement, Evaluation, Testing, Review, and Implementation Consortium (Q-METRIC).

1.E. National Quality Forum (NQF) ID (if applicable)

Not applicable.

1.F. Measure Hierarchy

Please note here if the measure is part of a measure hierarchy or is part of a measure group or composite measure. The following definitions are used by AHRQ:

- 1. Please identify the name of the collection of measures to which the measure belongs (if applicable). A collection is the highest possible level of the measure hierarchy. A collection may contain one or more sets, subsets, composites, and/or individual measures.**

This measure is part of the Q-METRIC Availability of Specialty Services Measures collection.

- 2. Please identify the name of the measure set to which the measure belongs (if applicable). A set is the second level of the hierarchy. A set may include one or more subsets, composites, and/or individual measures.**

Not applicable.

- 3. Please identify the name of the subset to which the measure belongs (if applicable). A subset is the third level of the hierarchy. A subset may include one or more composites, and/or individual measures.**

Not applicable.

- 4. Please identify the name of the composite measure to which the measure belongs (if applicable). A composite is a measure with a score that is an aggregate of scores from other measures. A composite may include one or more other composites and/or individual measures. Composites may comprise component measures that can or cannot be used on their own.**

Not applicable.

1.G. Numerator Statement

The eligible population for the numerator is the number of dental providers who have provided any dental procedure to at least one enrolled child.

Dental providers are to be identified using internal coding systems where available. Otherwise, taxonomy codes may be used to link to provider National Provider Identifier (NPI). For example, the National Plan & Provider Enumeration System (NPPES) registry may be used to identify specialists, using the rendering NPI or billing NPI. Individual dental providers are to be included as eligible providers. For this measure, a dental procedure is defined as any claim with a procedure code in the range of D0100-D9999; see Table 1 in the Supporting Documents.

1.H. Numerator Exclusions

- NPIs representing organizations and clinics.
- Dental hygienists.
- NPIs representing professionals who are not dental providers (e.g., physicians, surgeons).

1.I. Denominator Statement

The eligible population for the denominator is the number of children younger than 18 years of age on December 31 of the measurement year who have at least one enrollment period of 90

days (or 3 consecutive months) within the measurement year in a health plan that includes outpatient dental care.

1.J. Denominator Exclusions

None.

1.K. Data Sources

Check all the data sources for which the measure is specified and tested.

Administrative data (e.g., claims data).

If other, please list all other data sources in the field below.

Not applicable.

Section 2: Detailed Measure Specifications

Provide sufficient detail to describe how a measure would be calculated from the recommended data sources, uploading a separate document (+ Upload attachment) or a link to a URL. Examples of detailed measure specifications can be found in the CHIPRA Initial Core Set Technical Specifications Manual 2011 published by the Centers for Medicare & Medicaid Services. Although submission of formal programming code or algorithms that demonstrate how a measure would be calculated from a query of an appropriate electronic data source are not requested at this time, the availability of these resources may be a factor in determining whether a measure can be recommended for use.

Detailed measure specifications are provided in the Supporting Documents.

Section 3. Importance of the Measure

In the following sections, provide brief descriptions of how the measure meets one or more of the following criteria for measure importance (general importance, importance to Medicaid and/or CHIP, complements or enhances an existing measure). Include references related to specific points made in your narrative (not a free-form listing of citations).

3.A. Evidence for General Importance of the Measure

Provide evidence for all applicable aspects of general importance:

- **Addresses a known or suspected quality gap and/or disparity in quality (e.g., addresses a socioeconomic disparity, a racial/ethnic disparity, a disparity for Children with Special Health Care Needs (CSHCN), a disparity for limited English proficient (LEP) populations).**
- **Potential for quality improvement (i.e., there are effective approaches to reducing the quality gap or disparity in quality).**

- **Prevalence of condition among children under age 21 and/or among pregnant women.**
- **Severity of condition and burden of condition on children, family, and society (unrelated to cost).**
- **Fiscal burden of measure focus (e.g., clinical condition) on patients, families, public and private payers, or society more generally, currently and over the life span of the child.**
- **Association of measure topic with children’s future health – for example, a measure addressing childhood obesity may have implications for the subsequent development of cardiovascular diseases.**
- **The extent to which the measure is applicable to changes across developmental stages (e.g., infancy, early childhood, middle childhood, adolescence, young adulthood).**

Oral health is an important, but often understated, component of an individual’s overall health, for children as well as adults. In the United States, data for 2005-2008 from the National Health and Nutrition Examination Survey (NHANES) indicated that 20.4 percent of children aged 5-11 and 13.3 percent of children aged 12-19 years old had untreated dental caries (tooth decay or cavities). Furthermore, 38.7 percent of children aged 5-11 and 52.0 percent of children aged 12-19 had undergone dental restoration at some point (Dye, Li, Beltran-Aguilar, 2012).

If left untreated, dental disease can cause major problems, including significant pain, school absences, infections, and even death (Centers for Medicare & Medicaid Services [CMS], 2011). In a 2000 report, the Surgeon General estimated the effect on missed school time to be quite significant, at 51 million school hours lost to dental disease (CMS, 2009).

Recommended schedules for both starting and maintaining regular dental visits vary, but the general recommendation is to begin visits around 1-2 years of age (or at first eruption). For example, the American Academy of Pediatric Dentistry recommends beginning by age 1 at the latest, with services including “at a minimum, relief of pain and infections, restoration of teeth, and maintenance of dental health” (CMS 2009). Despite these recommendations, many children fail to get annual dental services of any kind. An estimate from 2004 data suggests that less than half of children (49.6 percent) visited a dentist in the previous year; this is a slight improvement from 1997, when it was 45.7 percent (Wall, Brown, 2008). More recent evidence suggests that rates of dental visits have not improved. A recent update to the Healthy People 2020 goals notes that “the indicator for dental visits is losing ground,” though this indicator includes all people over the age of 2 years (Koh, Blakey, Roper, 2014).

Many factors can contribute to a child’s failure to obtain a dental visit in a given year, including general availability of dental providers and the availability of providers who will accept the child’s payment source. A 2010 U.S. Government Accountability Office (GAO) report highlights the geographic disparities in access to dental providers: 4,377 areas in the United States have a shortage of dental health professionals; 7,008 dentists would be needed to fill the gap (GAO, 2010). Moreover, the reluctance of many dentists to accept Medicaid-enrolled children has been demonstrated in numerous studies (Damiano, Brown, Johnson, et al., 1990; Eklund, Pittman,

Clark, 2003; Iben, Kanellis, Warren, 2000; Mayer, Stearns, Norton, et al., 2000; Milgrom, Riedy, 1998; Nainar, Tinanoff, 1997; Shulman, Ezemobi, Sutherland, et al., 2001; Venzie, Vann Jr, 1993). Reasons cited include low reimbursement rates, excessive paperwork, late or frequently denied reimbursement, and high rates of missed appointments. As a result, the availability of dental providers for Medicaid-enrolled children is widely viewed as inadequate. This is borne out by data indicating that children on Medicaid are less likely to have had a dental visit in the previous year compared with children with private insurance (GAO, 2008). Similarly, children with special health care needs—many of whom are enrolled in Medicaid—are less likely to see a dentist compared with children without any special health care needs (Kane, Mosca, Zotti, et al., 2008).

3.B. Evidence for Importance of the Measure to Medicaid and/or CHIP

Comment on any specific features of this measure important to Medicaid and/or CHIP that are in addition to the evidence of importance described above, including the following:

- **The extent to which the measure is understood to be sensitive to changes in Medicaid or CHIP (e.g., policy changes, quality improvement strategies).**
- **Relevance to the Early and Periodic Screening, Diagnostic and Treatment benefit in Medicaid (EPSDT).**
- **Any other specific relevance to Medicaid/CHIP (please specify).**

Availability and EPSDT

Medicaid's Early and Periodic Screening, Diagnosis and Treatment (EPSDT) benefit provides the foundation for comprehensive and preventive health care services for all Medicaid-enrolled children under age 21. Health screenings are mandated by the EPSDT guidelines, under which States are required to arrange (directly or through referral) for corrective treatment, as indicated by the screenings (CMS, 2014). In order to fulfill these obligations, it is imperative that providers are available to treat patients.

Though EPSDT is designed to cover screening, diagnosis, and treatment, parents of children on Medicaid may find it more difficult to obtain treatment from dentists compared with the ease of finding dental providers for children with private insurance. Dentists may decide not to take children on Medicaid (or limit how many they will take) due to low reimbursement rates, inability to charge for missed appointments, or due to the processes they must follow for Medicaid reimbursement (GAO, 2010).

3.C. Relationship to Other Measures (if any)

Describe, if known, how this measure complements or improves on an existing measure in this topic area for the child or adult population, or if it is intended to fill a specific gap in an existing measure category or topic. For example, the proposed measure may enhance an existing measure in the initial core set, it may lower the age range for an existing adult-focused measure, or it may fill a gap in measurement (e.g., for asthma care quality, inpatient care measures).

There are no known existing quality measures that assess the availability of dental providers to Medicaid-enrolled children.

Section 4. Measure Categories

CHIPRA legislation requires that measures in the initial and improved core set, taken together, cover all settings, services, and topics of health care relevant to children. Moreover, the legislation requires the core set to address the needs of children across all ages, including services to promote healthy birth. Regardless of the eventual use of the measure, we are interested in knowing all settings, services, measure topics, and populations that this measure addresses. These categories are not exclusive of one another, so please indicate "Yes" to all that apply.

Does the measure address this category?

- a. Care Setting – ambulatory: Yes.
- b. Care Setting – inpatient: No.
- c. Care Setting – other – please specify: No.
- d. Service – preventive health, including services to promote healthy birth: Yes.
- e. Service – care for acute conditions: Yes.
- f. Service – care for children with special health care needs/chronic conditions: Yes.
- g. Service – health promotion: No.
- h. Service – other: No.
- i. Measure Topic – duration of enrollment: No.
- j. Measure Topic – clinical quality: No.
- k. Measure Topic – patient safety: No.
- l. Measure Topic – family experience with care: Yes.
- m. Measure Topic – care in the most integrated setting: No.
- n. Population – other: No.
- o. Population – pregnant women: No.
- p. Population – neonates (28 days after birth) (specify age range): No.
- q. Population – infants (29 days to 1 year) (specify age range): Yes; all ages in this range.
- r. Population – pre-school age children (1 year through 5 years) (specify age range): Yes; all ages in this range.
- s. Population – school-aged children (6 years through 10 years) (specify age range): Yes; all ages in this range.
- t. Population – adolescents (11 years through 20 years) (specify age range): Yes; ages 11 through 17 years (i.e., younger than 18 years)
- u. Other category (please specify): No.

Section 5. Evidence or Other Justification for the Focus of the Measure

The evidence base for the focus of the measures will be made explicit and transparent as part of the public release of CHIPRA deliberations; thus, it is critical for submitters to specify the scientific evidence or other basis for the focus of the measure in the following sections.

5.A. Research Evidence

Research evidence should include a brief description of the evidence base for valid relationship(s) among the structure, process, and/or outcome of health care that is the focus of the measure. For example, evidence exists for the relationship between immunizing a child or adolescent (process of care) and improved outcomes for the child and the public. If sufficient evidence existed for the use of immunization registries in practice or at the State level and the provision of immunizations to children and adolescents, such evidence would support the focus of a measure on immunization registries (a structural measure).

Describe the nature of the evidence, including study design, and provide relevant citations for statements made. Evidence may include rigorous systematic reviews of research literature and high-quality research studies.

Table 2 (see Supporting Documents) presents the evidence supporting this measure.

5.B. Clinical or Other Rationale Supporting the Focus of the Measure (optional)

Provide documentation of the clinical or other rationale for the focus of this measure, including citations as appropriate and available.

Not applicable.

Section 6. Scientific Soundness of the Measure

Explain the methods used to determine the scientific soundness of the measure itself. Include results of all tests of validity and reliability, including description(s) of the study sample(s) and methods used to arrive at the results. Note how characteristics of other data systems, data sources, or eligible populations may affect reliability and validity.

6.A. Reliability

Reliability of the measure is the extent to which the measure results are reproducible when conditions remain the same. The method for establishing the reliability of a measure will depend on the type of measure, data source, and other factors.

Explain your rationale for selecting the methods you have chosen, show how you used the methods chosen, and provide information on the results (e.g., the Kappa statistic). Provide appropriate citations to justify methods.

Reliability testing was done to examine the extent to which this measure yields reproducible results. Two methods were used to test the reliability of the measure: (1) replication of the measure calculation process, and (2) comparison of the taxonomy-based provider identification data sources.

Reliability Test 1: Replication of the Measure Calculation Process

Reliability testing for this measure was performed for one State Medicaid program (Michigan) using data housed in program files in the State's data warehouse. Testing was performed using the same measure specifications for two calendar years (2012, 2013). Analyst 1 performed data extraction and initial measure calculation in October 2014; Analyst 2 repeated data extraction and measure calculation in August 2015.

Measures were calculated according to measure specifications, with Analysts 1 and 2 using their own discretion in determining how to process the data. Provider NPIs from rendering and billing provider fields were linked to relevant taxonomy codes from two data sources: (1) the National Plan & Provider Enumeration System (NPPES) registry, a national system developed by CMS to assign unique identifiers for providers (www.nppesregistry.com), and (2) taxonomy codes in provider enrollment data collected and maintained for use by the Michigan Medicaid program.

The measure calculated the rate of participating dental providers who had seen at least one enrolled child, younger than 18 years, for any dental procedure during the measurement year. This measure represents the number of providers per member, where a higher rate indicates better performance, as reflected by increased availability of service. Results for Analysts 1 and 2 are shown in Table 3 (see Supporting Documents). The differences in measure results for Analyst 1 versus Analyst 2 were 0.018 dental providers per 1,000 children for 2012 and 0.329 for 2013.

Examination of differences was performed to describe the reasons for the variance between Analysts 1 and 2.

Numerator Differences

With respect to identification of dental providers, Analyst 2 identified seven additional providers compared with Analyst 1. Upon investigation, it was determined that:

- Seven dental providers in 2012 and five dental providers in 2013 were identified by Analyst 1 only; these providers had their NPI deactivated after Analyst 1's data extraction but before Analyst 2's data extraction. Once an NPI is deactivated (e.g., when a provider dies or reports that s/he is retired from practice), that NPI will no longer be available for linkage.
- Analyst 2 identified 20 dental providers in 2012 and 14 dental providers in 2013 who were excluded by Analyst 1 because the entity type code did not reflect an individual provider.
- Analyst 2 identified one dental provider in 2012 and three dental providers in 2013 whose dental taxonomy records were newly added to the data warehouse after Analyst 1's data extraction.

- Analyst 2 identified five dental providers in 2012 and 329 dental providers in 2013 with claims added to the data warehouse after Analyst 1's data extraction for dental services delivered to the eligible population of children.

Denominator Differences

In reliability testing for the measure denominator (enrolled children), Analyst 2 had enrollment counts that were <.001 percent higher than Analyst 1. This was the result of updates to enrollment data that occurred in the period between the data extraction for Analysts 1 and 2. Thus, the reliability of denominator calculation was 99.999 percent.

In summary, Reliability Test 1 demonstrates excellent reliability of this measure, with some minor variance observed due to the dynamic nature of health administrative data. Consequently, it is likely that Medicaid programs assessing availability of specialty services using these methods would yield very consistent results; this suggests a high degree of reproducibility, given similar conditions in other settings.

Reliability Test 2: Comparison of National vs. Program-Specific Taxonomy-Based Provider Identification Data Sources

A second component of reliability testing compared the results of dental provider identification by data source. Initial feasibility testing for Michigan's Medicaid program used two sources of specialty information: the NPPES registry and the taxonomy codes from Michigan Medicaid's provider enrollment data. Using the population of dental providers identified for 2012 and/or 2013, comparison of the relative contribution of each data source is shown in Table 4 (see Supporting Documents).

As shown, 45-46 percent of the identified dental providers have matching taxonomy codes in both the NPPES and State taxonomy data, while 54-55 percent of identified dental providers have NPPES taxonomy codes only. Use of NPPES taxonomy codes as the sole source of specialty identification would yield 99.8 percent of dental providers who were identified by the combined method. The addition of State taxonomy codes contributed less than 1 percent of identified dental providers.

As all Medicaid programs and health plans have access to the NPPES taxonomy data, all would be expected to have reliability of specialist identification of at least 99 percent. Nearly all dental providers identified in the program-specific taxonomy data were also identified in the NPPES registry. Thus, Reliability Test 2 demonstrates excellent reliability for the use of taxonomy-based specialty codes, and for use of the NPPES registry.

6.B. Validity

Validity of the measure is the extent to which the measure meaningfully represents the concept being evaluated. The method for establishing the validity of a measure will depend on the type of measure, data source, and other factors.

Explain your rationale for selecting the methods you have chosen, show how you used the methods chosen, and provide information on the results (e.g., R2 for concurrent validity).

Face Validity

The validity of this measure was determined from face validity, the degree to which the measure construct characterizes the concept being assessed. The face validity of the measure was reviewed by a panel convened by Q-METRIC, which included nationally recognized experts representing pediatrics, family medicine, psychiatry, dentistry, and two parent representatives. In addition, validity was considered by experts in State Medicaid program operations, health plan quality measurement, health informatics, and health care quality measurement. In total, the Q-METRIC Availability of Specialty Services panel included 13 experts, providing a comprehensive perspective on the availability of specialty services and the measurement of quality metrics for States and health plans.

The Q-METRIC expert panel concluded that this measure has a high degree of face validity through a detailed review of concepts and metrics considered to be essential to parents' access to outpatient dental care for their children. Concepts and draft measures were rated by this group for their relative importance. The measure was rated as follows: parent-reported availability of outpatient dental appointments for their children received a score of 7.0 on a scale of 1-9, with 9 representing the highest possible ranking.

Measure Validity

Validity testing was performed to assess whether the exclusion of organizational NPIs had a substantial impact on dental provider identification.

For 2012, there were 752 organizational NPIs excluded (Taxonomy Codes 261QF0400X, 261QR1300X, 261QC1500X, 261QD0000X, 261QP0904X, 261QP0905X). Examination of the text labels for these 752 NPIs found 222 person names with a DDS/DMD credential (i.e., had "DDS" or "DMD" in the text label and did not have text indicating a clinic or partnership), and 530 other names, typically clinics or partnerships (i.e., had "dental" "dentistry" "associates" "and" in the text label).

- For the 222 person names, 107 names (48 percent) matched one of the individual provider NPIs already identified and counted toward the measure numerator. The other 115 person names (52 percent) did not match an already-identified dental provider, and thus represented potentially uncounted providers, with some likely exceptions due to circumstances such as marriage-related name changes.
- For the 530 other names, 373 records listed an authorized official with a DDS/DMD credential and/or dentist title; 194 of these 373 names (52 percent) matched one of the individual provider NPIs already identified and counted toward the measure numerator. For the remaining 157 organizations, the authorized official did not appear to be a dentist; thus, there was no ability to match with already-identified providers. The extent to which already-identified dental providers were affiliated with these organizations is unclear.

For 2013, there were 737 organizational NPIs excluded. Examination of the text labels for these 737 NPIs found 214 person names with a DDS/DMD credential (i.e., had "DDS" or "DMD" in

the text label and did not have text indicating a clinic or partnership), and 523 other names, typically clinics or partnerships (i.e., had “dental” “dentistry” “associates” “and” in the text label).

- For the 214 person names, 105 names (49 percent) matched one of the individual provider NPIs already identified and counted toward the measure numerator. The other 115 person names (51 percent) did not match an already-identified dental provider, and thus represented potentially uncounted providers.
- For the 523 other names, 378 records listed an authorized official with a DDS/DMD credential and/or dentist title; 204 of these 378 names (54 percent) matched an individual provider NPI already identified and counted toward the measure numerator. For the remaining 145 organizations, the authorized official did not appear to be a dentist, and thus there was no ability to match with already-identified providers; the extent to which already-identified dental providers were affiliated with these organizations is unclear.

Thus, the inclusion of organizational NPIs in the measure calculation would yield a significant number of dental providers double-counted toward the numerator and an unknown number that potentially could be double-counted. Conversely, it is likely that some dental providers are serving Medicaid-enrolled children under an organizational NPI only, and this measure does not identify those providers. Given the relatively high proportions of already-counted dental providers within the organizational NPIs, the overall validity of the measure is very good with respect to the impact of excluding organizational NPIs.

Section 7. Identification of Disparities

CHIPRA requires that quality measures be able to identify disparities by race, ethnicity, socioeconomic status, and special health care needs. Thus, we strongly encourage nominators to have tested measures in diverse populations. Such testing provides evidence for assessing measure’s performance for disparities identification. In the sections below, describe the results of efforts to demonstrate the capacity of this measure to produce results that can be stratified by the characteristics noted and retain the scientific soundness (reliability and validity) within and across the relevant subgroups.

7.A. Race/Ethnicity

This measure does not address any disparities related to race or ethnicity, as the measure does not track any demographic information for the children being seen.

7.B. Special Health Care Needs

This measure does not address any disparities related to special health care needs, as the measure does not track any demographic information for the children being seen.

7.C. Socioeconomic Status

This measure does not address any disparities related to socioeconomic status, as the measure does not track any demographic information for the children being seen.

7.D. Rurality/Urbanicity

This measure does not address any disparities related to rurality/urbanicity, as the measure does not track any demographic information for the children being seen.

7.E. Limited English Proficiency (LEP) Populations

This measure does not address any disparities related to LEP populations, as the measure does not track any demographic information for the children being seen.

Section 8. Feasibility

Feasibility is the extent to which the data required for the measure are readily available, retrievable without undue burden, and can be implemented for performance measurement. Using the following sections, explain the methods used to determine the feasibility of implementing the measure.

8.A. Data Availability

1. What is the availability of data in existing data systems? How readily are the data available?

We expect that data to calculate this measure will be widely available to State Medicaid programs. The measure requires the following data elements:

- Enrolled provider NPI – consistently collected during provider enrollment in a Medicaid program or health plan; consistently included in provider demographic files.
- Provider specialty – available by linking provider NPI with national or State databases via taxonomy codes.
- Child age – consistently collected during enrollment in a Medicaid program or health plan; consistently included in enrollee demographic files.
- Child enrollment duration – consistently maintained in Medicaid program/health plan enrollee demographic files.
- Rendering/billing provider NPI – consistently collected through the processing of administrative claims for services provided.

These data are considered typical components of health care administrative claims information. As such, they are expected to be routinely collected and maintained by public and private payers.

Feasibility testing for this measure was performed for one State Medicaid program (Michigan) using data routinely maintained in the State's data warehouse. The data warehouse contains health care utilization and eligibility information for Michigan Medicaid members, as well as provider enrollment data. Feasibility testing was performed for two calendar years (2012, 2013) by a data analyst experienced in extracting and analyzing Medicaid enrollment, utilization, and

provider data. Testing was performed according to measure specifications; measure results were calculated (shown in Section 6, Reliability).

For feasibility testing, provider NPIs were linked to relevant taxonomy codes in two data sources: (1) the NPES (National Plan & Provider Enumeration System) registry, a national data source available to all Medicaid programs and health plans, and (2) taxonomy codes in provider enrollment data collected by the Michigan Medicaid program. Child enrollment data were drawn from enrollment files in the data warehouse; utilization data were drawn from adjudicated claims files in the data warehouse. Dental service procedure codes in the range D0100-D9999 were used to determine visits where dental procedures were provided. Rendering and billing provider NPIs were used to identify dental providers.

The required data were readily available in these data sources, with a missing data rate of <0.001 percent.

In summary, the feasibility of calculating this measure is excellent. It is anticipated that calculation of this measure is highly feasible by a data analyst experienced with Medicaid administrative data.

2. If data are not available in existing data systems or would be better collected from future data systems, what is the potential for modifying current data systems or creating new data systems to enhance the feasibility of the measure and facilitate implementation?

Not applicable.

8.B. Lessons from Use of the Measure

1. Describe the extent to which the measure has been used or is in use, including the types of settings in which it has been used, and purposes for which it has been used.

Not applicable.

2. If the measure has been used or is in use, what methods, if any, have already been used to collect data for this measure?

Not applicable.

3. What lessons are available from the current or prior use of the measure?

Not applicable.

Section 9. Levels of Aggregation

CHIPRA states that data used in quality measures must be collected and reported in a standard format that permits comparison (at minimum) at State, health plan, and provider levels. Use the following table to provide information about this measure's use for reporting at the levels of aggregation in the table.

For the purpose of this section, please refer to the definitions for provider, practice site, medical group, and network in the Glossary of Terms.

If there is no information about whether the measure could be meaningfully reported at a specific level of aggregation, please write "Not available" in the text field before progressing to the next section.

Level of aggregation (Unit) for reporting on the quality of care for children covered by Medicaid/ CHIP†:

State level* Can compare States

Intended use: Is measure intended to support meaningful comparisons at this level? (Yes/No)

Yes.

Data Sources: Are data sources available to support reporting at this level?

Yes.

Sample Size: What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?

This measure was tested using the universe of all eligible individual dental providers furnishing services to beneficiaries in a State Medicaid program. As such, the numerator and denominator are based on the entire population of dental providers and beneficiaries and are not intended to be based on a sample.

In Use: Have measure results been reported at this level previously?

No.

Reliability & Validity: Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?

No.

Unintended consequences: What are the potential unintended consequences of reporting at this level of aggregation?

None identified.

Other geographic level: Can compare other geographic regions (e.g., MSA, HRR)

Intended use: Is measure intended to support meaningful comparisons at this level? (Yes/No)

No.

Data Sources: Are data sources available to support reporting at this level?

Not applicable.

Sample Size: What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?

Not applicable.

In Use: Have measure results been reported at this level previously?

Not applicable.

Reliability & Validity: Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?

Not applicable.

Unintended consequences: What are the potential unintended consequences of reporting at this level of aggregation?

Not applicable.

Medicaid or CHIP Payment model: Can compare payment models (e.g., managed care, primary care case management, FFS, and other models)

Intended use: Is measure intended to support meaningful comparisons at this level? (Yes/No)

Yes.

Data Sources: Are data sources available to support reporting at this level?

Yes.

Sample Size: What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?

This measure was tested using the universe of all eligible individual dental providers furnishing services to beneficiaries in a State Medicaid program. As such, the numerator and denominator are based on the entire population of dental providers and beneficiaries and are not intended to be based on a sample. Although not tested, stratification of State-level results by Medicaid payment model may be feasible in some States.

In Use: Have measure results been reported at this level previously?

No.

Reliability & Validity: Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?

No.

Unintended consequences: What are the potential unintended consequences of reporting at this level of aggregation?

None identified.

Health plan*: *Can compare quality of care among health plans.*

Intended use: **Is measure intended to support meaningful comparisons at this level?
(Yes/No)**

Yes.

Data Sources: **Are data sources available to support reporting at this level?**

Yes.

Sample Size: **What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**

This measure was tested using the universe of all eligible individual dental providers furnishing services to beneficiaries in a State Medicaid program. As such, the numerator and denominator are based on the entire population of dental providers and beneficiaries and are not intended to be based on a sample. Although not tested, stratification of State-level results by Medicaid payment model may be feasible in some States.

In Use: **Have measure results been reported at this level previously?**

No.

Reliability & Validity: **Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?**

No.

Unintended consequences: **What are the potential unintended consequences of reporting at this level of aggregation?**

None identified.

Provider Level

Individual practitioner: *Can compare individual health care professionals*

Intended use: **Is measure intended to support meaningful comparisons at this level?
(Yes/No)**

No.

Data Sources: **Are data sources available to support reporting at this level?**

Not applicable.

Sample Size: **What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?**

Not applicable.

In Use: **Have measure results been reported at this level previously?**

Not applicable.

Reliability & Validity: Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?

Not applicable.

Unintended consequences: What are the potential unintended consequences of reporting at this level of aggregation?

Not applicable.

Provider Level

Hospital: *Can compare hospitals*

Intended use: Is measure intended to support meaningful comparisons at this level?

(Yes/No)

No.

Data Sources: Are data sources available to support reporting at this level?

Not applicable.

Sample Size: What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?

Not applicable.

In Use: Have measure results been reported at this level previously?

Not applicable.

Reliability & Validity: Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?

Not applicable.

Unintended consequences: What are the potential unintended consequences of reporting at this level of aggregation?

Not applicable.

Provider Level

Practice, group, or facility:** *Can compare: (i) practice sites; (ii) medical or other professional groups; or (iii) integrated or other delivery networks*

Intended use: Is measure intended to support meaningful comparisons at this level?

(Yes/No)

No.

Data Sources: Are data sources available to support reporting at this level?

Not applicable.

Sample Size: What is the typical sample size available for each unit at this level? What proportion of units at this level of aggregation can achieve an acceptable minimum sample size?

Not applicable.

In Use: Have measure results been reported at this level previously?

Not applicable.

Reliability & Validity: Is there published evidence about the reliability and validity of the measure when reported at this level of aggregation?

Not applicable.

Unintended consequences: What are the potential unintended consequences of reporting at this level of aggregation?

Not applicable.

Section 10. Understandability

CHIPRA states that the core set should allow purchasers, families, and health care providers to understand the quality of care for children. Please describe the usefulness of this measure toward achieving this goal. Describe efforts to assess the understandability of this measure (e.g., focus group testing with stakeholders).

This measure provides States, Medicaid programs, parents, and other stakeholders with a way to assess the availability of dental care for children. Low rates of available providers are easily understood to be unacceptable. The simplicity of the measure allows providers and purchasers to assess the rate of how many dental providers are available for a State's Medicaid population.

Section 11. Health Information Technology

Please respond to the following questions in terms of any health information technology (health IT) that has been or could be incorporated into the measure calculation.

11.A. Health IT Enhancement

Please describe how health IT may enhance the use of this measure.

Health IT enhancements by providers such as electronic health records (EHRs) are not applicable to this measure. Enhancements of State Medicaid programs to provide more robust data warehouse capabilities for administrative data may improve the timeliness, completeness, and accuracy of provider information used for this measure.

11.B. Health IT Testing

Has the measure been tested as part of an electronic health record (EHR) or other health IT system?

No. This measure is derived from administrative data sources that characterize the dental providers authorized to bill for services for State Medicaid programs. Consequently, EHR-based information for individual encounters is not applicable.

If so, in what health IT system was it tested and what were the results of testing?

Not applicable.

11.C. Health IT Workflow

Please describe how the information needed to calculate the measure may be captured as part of routine clinical or administrative workflow.

Not applicable; this measure is derived from State Medicaid program administrative files.

11.D. Health IT Standards

Are the data elements in this measure supported explicitly by the Office of the National Coordinator for Health IT Standards and Certification criteria (see healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov__standards_ifr/1195)?

No.

If yes, please describe.

Not applicable.

11.E. Health IT Calculation

Please assess the likelihood that missing or ambiguous information will lead to calculation errors.

Missing or ambiguous information has a direct impact on this measure. The completeness and accuracy of Medicaid administrative data files designating authorized providers will influence the validity of this measure. Missing provider specialty codes in administrative data files will understate the availability of dental providers. In addition, dental providers serving Medicaid-enrolled children under an organizational NPI only will be uncounted.

11.F. Health IT Other Functions

If the measure is implemented in an EHR or other health IT system, how might implementation of other health IT functions (e.g., computerized decision support systems in an EHR) enhance performance characteristics on the measure?

Not applicable.

Section 12. Limitations of the Measure

Describe any limitations of the measure related to the attributes included in this CPCF (i.e., availability of measure specifications, importance of the measure, evidence for the focus of

the measure, scientific soundness of the measure, identification of disparities, feasibility, levels of aggregation, understandability, health information technology).

Limitations to this measure pertain primarily to the accuracy of data sources for provider specialty identification and to the lack of information regarding individual dental providers practicing within dental clinics that bill only through organizational NPIs.

Accuracy of Provider Specialty Identification Data Sources

There is no single data source to identify provider specialty with complete accuracy. The NPDES registry has significant advantages, in that it is a national system that is widely available to Medicaid programs and health plans. The NPDES is very accurate; reliability testing demonstrated that over 99 percent of dental providers identified for the measure calculation were found in the NPDES. However, NPIs can be deactivated in NPDES (e.g., for deceased dentists), which limits its use as a retroactive data source. Still, reliability testing for this measure demonstrated that the NPDES has a much greater likelihood of identifying dental providers than State taxonomy codes.

It should be noted that Medicaid programs that carve or contract out for dental services should require detailed provider identification data, including individual billing and rendering NPI numbers, so that dental provider participation can be monitored.

Identification of Dental Providers Practicing Under Organizational NPIs

Specification of this measure calls for exclusion of organizational NPIs – i.e., those with taxonomy codes representing clinics or centers. This may be particularly important in measuring the numbers of dental providers, as some providers practice in multiple locations. Thus, the most specific unit of analysis is at the individual level. Indeed, as demonstrated in validity testing, the inclusion of organizational NPIs yielded a significant number of dental providers who would have been double-counted toward the numerator if included in the measure calculation.

However, it should be noted that the exclusion of organizational NPIs will undercount those dental providers who serve Medicaid-enrolled children under an organizational NPI only. Anecdotal reports suggest that this occurs when a provider wishes to devote a limited amount of service to the Medicaid population but does not want to become an authorized Medicaid provider, due to limited reimbursement or other known barriers. It is not possible to quantify the extent to which this occurs.

Another situation that could be represented by encounters with an organizational NPI is delivery of dental public health services by a dental hygienist from that organization. As seen in the measure specifications, dental hygienists are not among the provider types specified for this measure. Qualified dental services performed by dental hygienists should be done under the supervision of a dentist and billed as such. Thus, the exclusion of services performed by dental hygienists should have minimal impact on the measure calculation, if supervision and billing are done correctly.

Section 13. Summary Statement

Provide a summary rationale for why the measure should be selected for use, taking into account a balance among desirable attributes and limitations of the measure. Highlight specific advantages that this measure has over alternative measures on the same topic that were considered by the measure developer or specific advantages that this measure has over existing measures. If there is any information about this measure that is important for the review process but has not been addressed above, include it here.

This measure assesses the rate of participating dental providers who have seen at least one enrolled child for any dental procedure in the measurement year per eligible population of children. This rate will be expressed in terms of 1,000 eligible children (number of dental providers/1,000 enrolled children). The eligible population includes children younger than 18 years, as of the end of the measurement year, who have been enrolled in a Medicaid program or health plan that includes outpatient dental care for at least one 90-day period (or 3 consecutive months) within the measurement year. This measure is implemented with administrative claims data; dental providers are identified by taxonomy codes. There are no known existing quality measures that assess the availability of dental providers to Medicaid-enrolled children.

Despite recommendations that children receive routine preventive and diagnostic dental services, as well as necessary restorative care, many children fail to get annual dental exams of any kind. Several factors can contribute to a child's failure to obtain a dental visit in a given year, including known barriers that limit dentists' participation in Medicaid. This is borne out by data indicating that Medicaid-enrolled children are less likely to have had a dental visit in the previous year compared with children with private insurance. Furthermore, dental provider availability has geographic disparities; there are more than 4,000 dental health professional shortage areas in the United States.

Q-METRIC used two methods to test the reliability of the measure. Replication of the measure calculation process demonstrated excellent reliability, with minor variance due to the dynamic nature of health administrative data. Comparison of the taxonomy-based provider identification data sources showed excellent reliability, with over 99 percent of dental providers identified through the NPDES registry, to which all Medicaid programs have access. Validity testing was performed to assess the impact of excluding organizational NPIs from the measure calculation. Given the documented evidence that including the organizational NPIs would result in double-counting of a substantial number of dental providers, the overall validity of the measure is very good regarding the effect of excluding organizational NPIs.

This measure provides States, Medicaid programs, parents, and other stakeholders with a way to assess the availability of dental providers for Medicaid-enrolled children. While the data sources needed to calculate this measure are readily available to Medicaid programs, limitations include their accuracy for provider specialty identification and the potential for undercounting dental providers who serve Medicaid-enrolled children under organizational NPIs only. Health IT enhancements by State Medicaid programs to develop more robust data warehouse capabilities for administrative data, as well as requirements for provider-level (i.e., individual) billing and rendering information when dental services are carved or contracted out, may improve the timeliness, completeness, and accuracy of information used for this measure.

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Section 14: Identifying Information for the Measure Submitter

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The CHIPRA Pediatric Quality Measures Program (PQMP) Candidate Measure Submission Form (CPCF) was approved by the Office of Management and Budget (OMB) in accordance with the Paperwork Reduction Act.

The OMB Control Number is 0935-0205 and the Expiration Date is December 31, 2015.

Public Disclosure Requirements

Each submission must include a written statement agreeing that, should U.S. Department of Health and Human Services accept the measure for the 2014 and/or 2015 Improved Core

Measure Sets, full measure specifications for the accepted measure will be subject to public disclosure (e.g., on the Agency for Healthcare Research and Quality [AHRQ] and/or Centers for Medicare & Medicaid Services [CMS] websites), except that potential measure users will not be permitted to use the measure for commercial use. In addition, AHRQ expects that measures and full measure specifications will be made reasonably available to all interested parties. "Full measure specifications" is defined as all information that any potential measure implementer will need to use and analyze the measure, including use and analysis within an electronic health record or other health information technology. As used herein, "commercial use" refers to any sale, license or distribution of a measure for commercial gain, or incorporation of a measure into any product or service that is sold, licensed or distributed for commercial gain, even if there is no actual charge for inclusion of the measure. This statement must be signed by an individual authorized to act for any holder of copyright on each submitted measure or instrument. The authority of the signatory to provide such authorization should be described in the letter.

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