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Medicaid Caseload for Pediatric Dental Care

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Abstract

Background: The aims were to compare by strata: (1) dentists' participation in Medicaid; and (2) Medicaid provider-level caseload measured as the number of patients or visits for preventive or restorative care for two comparison years.

Methods: The data sources were the 2012–2013 Medicaid Analytic eXtract claims and 2013 National Provider Plan Enumeration System (NPES) datasets. Medicaid participation was measured as the proportion of Medicaid-participating dentists among those in the NPES. Provider-level caseload was measured by the number of patients or visits. Dental care providers were stratified by the state, whether practicing in rural, suburban or urban communities, and provider type.

Results: The differences in participation rates for Rural versus Suburban and versus Urban communities ranged from –4% to 27% and –6% to 37%, respectively. The 2012 state median number of patients per-provider for preventive care ranged from 99 to 358. The provider-level caseload increased from rural to urban, and from 'Other-Provider' to 'General-Dentist' to 'Pediatric-Dentist'. The difference in caseload from 2012 to 2013 was not statistically significant except for the 'Pediatric-Dentist' type.

Conclusions: This study suggests that the realized caseload for Medicaid-enrolled children varies by provider type and urbanicity. The state median caseload for preventive care is lower than the 500:1 patient-to-provider ratio used as the minimum caseload in access estimates from other studies.

Practical Implications: This study can assist states in gauging the level of dental care provided to the Medicaid-insured children in comparison to other states, with implications for the specification of oral health policies.

Keywords

dental care caseload; Medicaid-insured children; state variations; access to dental care

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INTRODUCTION

Recent research on estimating potential access to dental care for children with public health insurance in the United States (including Medicaid and CHIP) has pointed to a major challenge in measuring access, specifically, the specification of the caseload of dental care providers dedicated to children with public insurance.¹⁻³

The Health Policy Institute of the American Dental Association (HPI-ADA) has released state reports providing estimated Medicaid participation rates.⁴ However, participation by HPI-ADA means that a dentist participates in Medicaid if he or she is simply included in the [InsureNowKids.gov](https://www.insurenokids.gov) database. A follow-up research study has discussed the level of accuracy of the HPI-ADA's analysis, pointing out that the data sources available to derive estimated participation of dentists in Medicaid are unreliable.³ That study also highlighted the need to examine other measures of provider participation. For example, one operational definition of Medicaid participation could be based on a minimum number of Medicaid-enrolled children treated by a dental care provider, such as a minimum caseload of 50 or 100 patients. Ultimately, such measures account for a minimum caseload before considering a provider as participating in public insurance programs and reflect actual clinical engagement by the provider.

The caseload of dental care providers devoted to Medicaid/CHIP-enrolled children is not only important in providing a more meaningful measure of participation in Medicaid/CHIP, but it is also important in providing an accurate estimate of access to dental care for publicly-insured children. Most recent state-level access estimates reported by HPI-ADA⁵ have assumed generic caseload levels for all dental care providers, regardless of the provider type, e.g. general dentists versus pediatric dentists, and/or location of dentist's practice, e.g. urban versus rural location. As shown in those reports, potential access can vary significantly depending on the assumed caseload level. For example, for North Carolina, HPI-ADA reported that 90% of children live within 15 minutes travel time to a dentist reported as participating in Medicaid. However, assuming that a dentist's caseload of Medicaid/CHIP enrolled children is 500 patients a year, only 42% live within 15 minutes of a participating dentist, less than one-half of the initial estimate.⁶

Using Medicaid Analytic eXtract (MAX) claims data, this study provides a detailed analysis of provider-level outcomes, including: (1) Medicaid participation measured by the proportion of Medicaid-participating dental care providers recorded in the National Provider Plan Enumeration System (NPPES) database; and (2) Provider-level caseload measured by the number of Medicaid-enrolled children for which preventive and restorative dental care claims have been billed and the number of visits by Medicaid-enrolled children within a year. We stratified the dental care providers by state, whether the practice address is in a rural, suburban or urban community (deemed herein '*urbanicity*' level), and provider type. We also considered two years of data for consistency of the results. We compared the stratified measures across 39 states, selected because the claims data of these states provided accurate information on the identification of the dental care providers needed to derive the caseload measures of interest.

Although other studies have investigated state-level participation of dentists in Medicaid^{3, 4}, this study is the first known provider-level analysis of Medicaid caseload, with comparison across multiple states and for multiple types of dental care providers. Medicaid participation and provider-level caseload together can be used to accurately measure geographic access to dental care, and to inform policies and interventions for the Medicaid-enrolled children.

METHODS

Data Sources

The main data source was the 2012–2013 Medicaid Analytic eXtract (MAX) medical claims data acquired from the Centers for Medicare & Medicaid Services (CMS), consisting of identifiable individual-level claims data for all Medicaid-enrolled beneficiaries. For year 2012, we considered data from 39 states, excluding Arizona, California, Florida, Hawaii, Idaho, Michigan, Missouri, North Dakota, Pennsylvania, South Carolina, and South Dakota. The primary exclusion criterion was insufficient provider-level data in the Medicaid claims for the purposes of this study. For year 2013, we considered data from 20 states; we included those states because of data availability and sufficient provider-level data. Although we have a reduced number of states, year 2013 was included in the analysis to assess the difference in caseload between 2012 and 2013. Institutional Review Board (IRB) approval for this research was obtained under the protocol number H11287. All data derived from the MAX files meet a minimum cell size of 11 of patients according to the Data Use Agreement with CMS.

The second data source was the 2013 National Provider Plan and Enumeration System (NPES), consisting of publicly available provider-specific information. NPES provides detailed information on all healthcare providers in the United States using their reported National Provider Index, including billing and service address, taxonomy and entity.

Study Population

The study population consisted of all beneficiaries aged 0–18 years enrolled in the Medicaid program in the selected states in years 2012–2013.

Service Provider Identification and Stratification

We identified the service providers by using the following process. First, the NPIs of all dental care providers with the taxonomy codes provided in Online-Appendix A were identified in the NPES data for the states in this study. Second, for all dental care claims with a procedure code provided in the Supplemental-Tables 1 and 2 in Online-Appendix A and for the study population, the Service Provider Identification Number was checked to match a valid NPI from the NPES database. If that criterion was not met, then the Billing Provider Identification Number was checked, and finally, the National Provider Index data field was checked to match to a valid NPI from the NPES database. The outcome of this procedure was a set of valid NPIs corresponding to the dental care claims for the study population.

The set of unique NPIs for providers who delivered preventive or restorative dental care identified in the MAX files was joined with NPPES data to examine NPI-specific stratifications, including provider entity, taxonomy, urbanicity of the practice business address, and state.

According to NPPES, entity 1 corresponded to individual dental providers whereas entity 2 indicated group providers. Providers were able to list multiple taxonomies to describe their business. To ensure that this study only included dental care providers, only providers that listed any of the dental care taxonomies as their primary or secondary taxonomy were selected. We classified the provider type into three groups: pediatric dentist, general dentist, or other dental care providers. We used the rural-urban continuum codes⁷ (RUCCs) to determine whether the county of the provider's address provided in the NPPES database was urban (RUCCs: 1,2,3), suburban (RUCCs: 4,5,6), or rural (RUCCs: 7,8,9,10). We used RUCCs because they have been developed to differentiate urban (not necessarily metropolitan areas) from suburban and rural communities.

We derived the stratifications only for providers with 11 or more patients with dental care claims reported in the MAX data.

Provider-Level Caseload: Number of Patients and Visits

We considered multiple claims for the same type of dental service (preventive or restorative) in a single day for the same provider, and for the same Medicaid-enrolled child, as one *dental care visit*. Following the aggregation of claims into visits for restorative and preventive dental care, we identified the number of patients and visits per unique NPI in each state. Patients with at least one claim under the preventive or restorative care designation were considered a patient of those types of care.

Outcome Measures—The outcome measures of interest were:

1. *Medicaid participation* measured by the proportion of dental care providers identified with reimbursed Medicaid claims for children among the providers recorded in the NPPES; and
2. *Provider-level caseload* measured by the number of patients and number of visits per-year per provider with unique NPI, differentiated into preventive and restorative care.

The outcomes were stratified by state, by provider type (General Dentist, Pediatric Dentist, Other Provider), and by urbanicity of the recorded practice address (Urban, Suburban and Rural). We also differentiated the outcomes for two years, 2012 and 2013.

RESULTS

All statistical statements for the hypothesis testing procedures are provided at the significance level $\alpha = 0.01$. In cases of multiple comparison, we used the Bonferroni correction for multiplicity. When comparing percentages or proportions, the test of equal proportions assuming Binomial distribution was performed. When comparing medians, the Wilcoxon rank test was used.

Service Provider Identification and Stratification: Medicaid Participation Outcome

Table 1 presents the percentage for the dental care providers identified in the 2012 and 2013 MAX claims data of all dental care providers within each state. For comparison, we added the participation rates estimated by the Health Policy Institute of the American Dental Association (ADA-HPI). We also added the providers with less than 11 patients in the 'Overall' column. All other columns do not include these providers because we cannot report provider-detailed data on providers with less than 11 patients. The results from this table are as follows:

- The difference between the Overall and Overall with <11 patients ranged between 1% (GA 2013) to 17% (LA 2013).
- Across all states, the ADA-HPI estimate was larger than the participation estimates derived from the claims data. The difference between ADA-HPI rates and those based on MAX claims for at least 11 patients ranged from 7% (OH) to 64% (IA). All differences were statistically significant (p-value≈0).
- The difference in participation rate between General and Pediatric Dentists was statistically significant except for IL, ranging from 4% (IL) to 62% (VT). Other dental providers had a participation rate between 1% (IL) and 15% (WV), but generally was lower than 10%.
- Except for MD, which had no providers in Rural communities, the difference in participation for Rural vs Suburban communities ranged from -4% to 27%. Except for DE, which had no providers in Rural or Suburban communities, the difference in participation for Rural vs Urban communities ranged from -6% to 37%, with only seven states having lower participation in rural communities than in urban communities. The difference between Urban and Suburban was statistically significant for 15 states.
- Comparing the participation estimates from the claims data for years 2012 vs 2013, most differences were less than five percentage points with some exceptions: LA and UT had a 5–6 percentage point increase and IN experienced a 25% decrease in participation for Pediatric Dentists from 2012 to 2013. Moreover, OK and WA had significantly lower participation from 2012 to 2013 across all types of providers and urbanicity. The differences were statistically significant, except for AR, GA, and LA.

Provider-Level Caseload Outcomes: State Stratification

Table 2 provides the state-level median number of patients and of visits per provider, estimated as the median value across all provider capacities within a state. The results from this table are as follows:

- In 2012, the median number of patients and of visits per-provider for preventive care ranged from 99 (MS) to 358 (VA) and from 344 (OH) to 1901 (VA), respectively.

- In 2012, the median number of patients and of visits per-provider for restorative care ranged from 39 (MS) to 131 (VA) and from 107 (OH) to 567 (VT), respectively.
- In 2012, the caseload for preventive care was statistically significantly higher than for restorative care overall ($p\text{-value}\approx 0$), with a difference ranging from 65 to 441 visits per-provider.
- One-half of the states with 2013 data had a median caseload for preventive and restorative care that was higher in 2013 than in 2012. VT had a significant drop in realized caseload in 2013. The difference in medians between the two years across all states was only statistically significant for LA restorative care, MN preventive care and NY, OK, and WA for both types of care. (See Supplemental-Table 3.)

Figures 1A and 2A in the Online-Supplement display boxplots of the provider-level caseload in number of visits and of patients stratified by state. The boxplots in these figures show not only the wide variation in the median caseload, but also the skewedness of the distributions with long right tails, corresponding to providers with higher caseload.

Provider-Level Caseload Outcome: Urbanicity and Provider-Type Stratification

Figure 1 presents the distribution boxplots of the provider-level caseload in numbers of visits by urbanicity and type of providers. Figure 3A in the Online-Supplement presents the same caseload distributions as histograms. Figure 4A in the Online-Supplement presents the same boxplots and histograms but for caseload in numbers of patients. The results from these figures are as follows:

- Across both strata, the distribution of the provider-level caseload was skewed with a long right tail. While there were many providers with a low Medicaid caseload, there also were some providers with a very large caseload; not all such providers fell in the category of entity 2 (group providers) of the provider's NPI.
- Comparing the distributions across different levels of urbanicity specified by providers' practice address according to NPPES, the provider-level caseload increased with the level of urbanicity for both restorative and preventive care ($p\text{-value}\approx 0$ for the Wilcoxon test of equal medians). The increase was similar for the number of visits and for the number of patients. Comparing the distributions across different provider types, specified by providers' taxonomy according to NPPES, the provider-level caseload was more than twice as high for General Dentists than for 'Other Providers' (including mostly dental specialists) and more than twice as high for Pediatric Dentists than for General Dentists. The differences were larger for the number of visits than for the number of patients.

Figure 2 compares the distributions of the provider-level caseload measured by the number of preventive dental care visits for years 2012 and 2013, by urbanicity level and provider type. Figure 5A in the Online-Supplement presents the same caseload distributions as histograms. Figure 6A in the Online-Supplement compares the provider-level caseload by state.

- The distributions by the urbanicity and provider type had similar shape, median, and spread for the two years. The test of the null hypothesis of equal medians, using the Wilcoxon rank test with Bonferroni correction for multiplicity, found that the difference in medians between the two years across all groups in the urbanicity and provider type strata was not statistically significant except for the difference in provider-level caseload for Pediatric Dentists (p-value≈0).
- The distributions of the provider-level caseloads were different across the states.

DISCUSSION

Our study provides a multi-state analysis of the Medicaid caseload of providers that can deliver dental care services for children. It is the first such study that examined Medicaid caseload at the provider level.

A first important observation is that the estimated Medicaid participation rates were significantly lower than previously reported by HPI-ADA. One primary reason for this difference is a much larger denominator in the participation rates provided in the present study. We considered the universe of all dental care providers with a National Provider Index, although a proportion of the providers were inactive. For example, we identified 6148 dental care providers in Georgia in the 2012 NPES database; in contrast, a survey by the Georgia Dental Association⁹ identified 5881 dentists, among whom only 4044 reportedly were active. While for some states the difference in participation rates may be explained by the larger number of providers in the denominator of the participation rates provided by our study, the difference between our rates and those provided by HPI-ADA are much larger than may be explained only by that factor.

Another important finding was the difference in participation rates calculated by limiting the numerator to providers who saw 11 or more patients within the calendar year compared with the estimate based on including providers who accepted less than 11 patients. That difference suggests that while some providers accept Medicaid patients, their realized caseload is too small to be counted as such. This finding aligns with the recommendation of using multiple measures to impose a minimum caseload to deem a provider as participating in Medicaid, particularly accounting for how extensively dentists treated Medicaid beneficiaries.³

Our study fills the gap in stipulating access standards and in deriving access estimates by providing insights on the realized caseload of dental care providers by state, provider type and level of urbanicity. A recent study identified New Jersey as being a lower bound in mandating a 500:1 enrollee to dentist provider ratio in its Medicaid program while other states mandate as high as a 2000:1 ratio.¹⁰ The HPI-ADA has provided access estimates for varying ratios, assuming a 500:1 patient-to-provider ratio as the lower bound and unlimited caseload as the upper bound.⁵ These bounds assume that the Medicaid caseload is the same across all dental care providers, and that on average a dental care provider will see as many as 500 or more Medicaid-insured children in their practice. In contrast to these assumptions, we found that none of the states had a median realized caseload as high as 500 Medicaid pediatric patients-per-provider.

Another important finding relevant to estimation of the potential access to dental care is the wide variation across the strata considered in this study: state, provider type, and urbanicity. We identified a clear trend in the caseload with respect to provider type, with pediatric dentists having the largest caseload, followed by general dentists and then specialists and other licensed professionals. Only one study to date has taken into consideration the provider type in estimating access.¹¹ We also identified substantive differences in caseload across states. The HPI-ADA state reports assumed that all providers have the same caseload regardless of their taxonomy or state. We also found a trend in Medicaid caseload across urbanicity levels of the provider's business practice address, with practices in urban areas having larger caseload followed by suburban and then by rural areas. This trend, however, may be driven by demand rather than the potential caseload of the dental care providers.

There are several data limitations in this study. The primary data source used in this analysis consists of claims data submitted by state Medicaid agencies. One limitation of this study is that some claims may not be filed, resulting in a potential under-reporting bias of the providers' caseload. It is unclear as to whether or not some prevention initiatives, such as school-based sealant programs, file claims for services rendered; CMS form 416—used by the HPI report—is filed by states to CMS and may include adjustments for these interventions. MAX files may be incomplete, especially for states with large managed care populations.¹²

Another study limitation is inherent in the NPPES database, the data source that provided the practice and provider characteristics of the dental care providers included in our study. While it has been mandatory to enter an NPI for all providers submitting for reimbursements since 2009, there still may be dental care providers without an NPI, particularly those who provide dental care within a large group practice. In addition, there may be a large proportion of inactive providers with an NPI. Consequently, the denominator in the Medicaid participation rates may be larger than the actual number of providers, resulting in lower estimated rates of Medicaid participation. Finally, some providers may not have updated their practice address information in the NPPES database.

Our definition of preventive dental services include several CDT codes typically classified as diagnostic services, such as D0120 (routine oral evaluation) and D0150 (comprehensive oral evaluation). Our rationale is that diagnostic services are an essential part of a preventive visit, even if no other service is delivered. The net effect of including diagnostic codes in our definition of preventive care is more inclusive counting of preventive care patients and visits per provider. Consequently, our calculated caseloads probably err towards more generous estimates of preventive care per provider.

CONCLUSION

Findings from this study suggest that the realized dental care caseload for Medicaid-enrolled children varies greatly across providers, with some consistent trends across different provider types and urbanicity of the providers' practice. While we capture only realized caseload, with the potential caseload being possibly larger, it is still informative in the specification of the providers' caseload in potential access estimates for the Medicaid-

insured children. Recent research has used the realized caseload to specify whether a provider has low or high Medicaid caseload, and based on this, additional excess caseload was considered to more accurately specify potential caseload.¹¹

Differences in how various state Medicaid programs are administered along with state policies on supervision of licensed providers and on reimbursement may greatly affect the providers' Medicaid caseload, and may partially explain the wide variations across states. Thus, this study can assist states in gauging the level of dental care provided to the Medicaid-insured children in comparison with other states, with implications on the specification of access standards and oral health policies.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

REFERENCES

1. Health Policy Institute ADA. Webinar: Measuring What Matters - A New Way of Measuring Geographic Access to Dental Care Services; 2017.
2. Serban N, Tomar S. ADA Health Policy Institute's Methodology Overestimates Spatial Access to Dental Care for Publicly Insured Children. *Journal of Public Health Dentistry* Accepted June 2018; in press.
3. Warder Clayton J., Edelstein Burton L. Evaluating levels of dentist participation in Medicaid. *J Am Dent Assoc* 2016;148(1):26–32. [PubMed: 27866643]
4. Health Policy Institute. The Oral Health Care System: A state by state Analysis In: Association AD, editor; 2015.
5. Health Policy Institute. Geographic Access to Dental Care: State Reports; 2017.
6. Vujicic M A New Way to Measure Geographic Access to Dentists in North Carolina. *North Carolina Medical Journal* 2017;78(3):391–92 [PubMed: 29203602]
7. Morrill R, Cromartie J, Hart L. Metropolitan, urban, and rural commuting areas: toward a better depiction of the U.S. settlement system. *Urban Geography*;20(8):727–48.
8. Institute HP. Dental Practice In: Association AD, editor; 2016.
9. Georgia Health Policy Center. A Study of Georgia's Dental Workforce 2012. Georgia: Presented to the Georgia Dental Association; 2012.
10. Nasseh Kamyar, Eisenberg Yochai, Vujicic Marko. Geographic access to dental care varies in Missouri and Wisconsin. *Journal of Public Health Dentistry* 2017;in press.
11. Cao S, Gentili M, Griffin P, Griffin S, Serban N. Disparities in Access to Preventive Dental Care between Publicly and Privately Insured Children in Georgia. *Preventing Chronic Disease* 2018;14:170–76.
12. Byrd VL, Dodd AH. Assessing the usability of MAX 2008 encounter data for comprehensive managed care. *Medicare Medicaid Res Rev* 2013;3(1).

Figure 1.

Box plots of the provider-level capacity measured according to the number of visits, for preventive and restorative care separately, and according to urbanicity (A) and type of provider (B). We have reduced the y axis such that approximately 7% to 8% of outlying observations with a large number of patients are excluded.

Figure 2.

Box plots of the provider-level capacity for preventive care comparing 2012 (blue box plots) and 2013 (green box plots) according to urbanicity (A) and type of provider (B). We have reduced the y axis such that approximately 7% to 8% of outlying observations with a large number of patients are excluded.

Table 1: Dental Provider Participation in Children's State Medicaid Programs, by State, Year, Provider Type, and Urbanicity of Practice Location.*

State/Year	Overall Participation Rate Based on Medicaid Claims		Participation Rate According to ADA-HPI**	Provider Type			Urbanicity		
	Including all Providers with a Claim	Including Providers with a Claim for 11 Patients		General Dentist	Pediatric Dentist	Other Providers	Rural	Suburban	Urban
AK 2012	24%	35%	43%	26%	48%	12%	32%	27%	21%
AL 2012	18%	20%	74%	18%	43%	8%	41%	31%	15%
AR 2012	15%	25%	61%	16%	30%	4%	24%	24%	11%
AR 2013	17%	29%		17%	35%	5%	27%	28%	11%
CO 2012	8%	10%	53%	9%	28%	3%	7%	7%	8%
CT 2012	13%	18%	46%	14%	46%	6%	9%	12%	13%
CT 2013	18%	24%		15%	48%	6%	10%	12%	15%
DE 2012	21%	28%	55%	24%	48%	6%	0%	0%	21%
GA 2012	14%	16%	28%	14%	44%	7%	22%	24%	13%
GA 2013	16%	17%		14%	43%	7%	22%	23%	13%
IA 2012	22%	30%	86%	23%	57%	9%	30%	29%	18%
IA 2013	24%	32%		23%	55%	9%	34%	29%	17%
IL 2012	11%	13%	30%	12%	16%	1%	10%	11%	11%
IN 2012	21%	37%	50%	20%	75%	10%	31%	25%	20%
IN 2013	22%	28%		20%	50%	10%	37%	24%	19%
KS 2012	12%	14%	26%	12%	42%	5%	21%	14%	10%
KY 2012	20%	23%	39%	22%	40%	8%	44%	24%	16%
LA 2012	22%	26%	43%	23%	56%	8%	44%	29%	21%
LA 2013	26%	43%		25%	61%	8%	50%	32%	23%
MA 2012	10%	12%	39%	11%	30%	3%	13%	6%	9%
MA 2013	12%	15%		12%	30%	3%	11%	7%	9%
MD 2012	14%	23%	25%	15%	60%	3%	0%	24%	14%
ME 2012	11%	14%	42%	12%	57%	6%	14%	15%	13%
MN 2012	15%	26%	69%	17%	48%	5%	29%	22%	14%
MN 2013	17%	27%		16%	46%	4%	32%	21%	13%
MS 2012	26%	40%	55%	28%	51%	7%	41%	27%	21%
MS 2013	28%	32%		27%	48%	8%	42%	27%	20%
MT 2012	19%	30%	72%	22%	42%	7%	24%	19%	18%
NC 2012	17%	21%	27%	17%	50%	8%	21%	24%	16%

State/Year	Overall Participation Rate Based on Medicaid Claims		Participation Rate According to ADA-HPI**	Provider Type			Urbanicity		
	Including all Providers with a Claim	Including Providers with a Claim for 11 Patients		General Dentist	Pediatric Dentist	Other Providers	Rural	Suburban	Urban
NE 2012	13%	27%	61%	14%	44%	3%	19%	12%	12%
NH 2012	9%	17%	45%	9%	46%	4%	15%	13%	9%
NJ 2012	8%	10%		8%	28%	3%	7%	7%	8%
NJ 2013	10%	13%	24%	9%	27%	3%	7%	8%	9%
NM 2012	20%	25%	53%	22%	64%	7%	30%	17%	20%
NV 2012	10%	23%	42%	9%	58%	2%	39%	15%	10%
NY 2012	13%	19%		14%	34%	6%	18%	15%	13%
NY 2013	15%	20%	38%	14%	35%	6%	18%	19%	13%
OH 2012	13%	15%		13%	45%	4%	26%	18%	12%
OH 2013	14%	16%	20%	13%	44%	4%	27%	19%	12%
OK 2012	30%	39%		32%	75%	7%	36%	40%	27%
OK 2013	21%	24%	52%	19%	41%	5%	21%	24%	16%
OR 2012	11%	16%		13%	42%	1%	13%	14%	10%
OR 2013	12%	17%	39%	13%	42%	1%	15%	13%	10%
RI 2012	8%	18%	45%	7%	49%	6%	0%	0%	6%
TN 2012	17%	19%		17%	44%	12%	33%	23%	16%
TN 2013	18%	20%	35%	18%	46%	12%	31%	23%	17%
TX 2012	19%	21%	48%	20%	43%	5%	20%	19%	19%
UT 2012	12%	18%		11%	51%	2%	24%	20%	11%
UT 2013	13%	20%	60%	11%	57%	3%	23%	19%	11%
VA 2012	6%	7%	31%	7%	17%	3%	15%	16%	6%
VT 2012	26%	33%		27%	89%	14%	27%	25%	27%
VT 2013	33%	39%	76%	28%	89%	13%	26%	24%	28%
WA 2012	20%	30%		22%	83%	4%	56%	29%	19%
WA 2013	15%	18%	29%	14%	48%	3%	36%	19%	12%
WI 2012	9%	15%	36%	9%	42%	3%	19%	13%	7%
WV 2012	32%	37%		34%	67%	15%	40%	41%	29%
WV 2013	35%	40%	71%	34%	67%	14%	43%	40%	29%
WY 2012	28%	41%		30%	40%	7%	39%	19%	18%
WY 2013	36%	50%	73%	32%	40%	4%	39%	22%	18%

* All reported participation rates are based on providers who submitted claims for 11 patients during that calendar year. The only exceptions are the participation rates in the column that included overall rates based on providers with at least one claim and the participation rates in the column labeled "Participation Rate According to ADA-HPI"

** ADA-HPI = American Dental Association – Health Policy Institute. Estimates from reference 4

Table 2:

State level capacity – **median** number of dental visits and patients across all providers participating in Medicaid (except those with less than 11 patients) within each state and by year. The capacity is differentiated for preventive and restorative services.

State	2012				2013			
	Preventive care patients/ provider	Preventive care visits/ provider	Restorative care patients/ provider	Restorative care visits/ provider	Preventive care patients/ provider	Preventive care visits/ provider	Restorative care patients/ provider	Restorative care visits/ provider
AK	270	903	130	409				
AL	155	538	76	213				
AR	141	453	64	207	109	353	52	162
CO	118	364	46	143				
CT	124	424	55	177	128	415	43	135
DE	117	474	51	146				
GA	214	759	71	200	170	670	68	193
IL	227	783	81	249				
IN	203	684	72	198	115	436	43	110
IA	332	1048	116	324	302	953	116	311
KS	200	681	73	218				
KY	150	564	63	184				
LA	141	485	55	169	155	558	63	191
ME	153	487	66	193				
MD	217	675	102	309				
MA	171	651	63	175	183	606	76	215
MN	191	779	67	180	161	582	61	164
MS	99	358	39	114	175	524	69	182
MT	215	642	72	183	110	330	39	97
NE	164	489	58	159				
NV	150	634	56	189				
NH	142	837	45	227				
NJ	115	615	43	192				
NM	218	815	98	279				

State	2012				2013			
	Preventive care patients/ provider	Preventive care visits/ provider	Restorative care patients/ provider	Restorative care visits/ provider	Preventive care patients/ provider	Preventive care visits/ provider	Restorative care patients/ provider	Restorative care visits/ provider
NY	148	491	58	170	163	566	63	173
NC	116	353	48	140				
OH	113	344	42	107	139	447	51	139
OK	124	382	45	119	148	454	52	131
OR	206	741	76	247	242	832	92	267
RI	271	902	83	234				
TN	181	596	71	225	237	751	89	267
TX	208	787	83	270				
UT	337	1563	131	537	230	712	95	315
VT	326	1639	126	567	161	419	64	154
VA	358	1901	131	518				
WA	321	1670	122	484	192	648	68	181
WV	107	375	50	169	195	704	69	180
WI	126	420	46	135				
WY	160	545	66	169	167	563	64	205