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Research Brief

A Ten-Year, State-by-State, Analysis of Medicaid Fee-for-Service Reimbursement Rates for Dental Care Services

Authors: Kamyar Nasseh, Ph.D.; Marko Vujicic, Ph.D.; Cassandra Yarbrough, M.P.P.

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Key Messages

- *In 2013, the average Medicaid fee-for-service reimbursement rate was 48.8 percent of commercial dental insurance charges for pediatric dental care services.*
- *In 2014, the average Medicaid fee-for-service reimbursement rate was 40.7 percent of commercial dental insurance charges for adult dental care services in states that provide at least limited adult dental benefits in their Medicaid program.*
- *From 2003 to 2013, for pediatric dental care services, Medicaid fee-for-service reimbursement relative to commercial dental insurance charges fell in 39 states and rose in seven states and the District of Columbia.*
- *The available evidence strongly suggests that increasing Medicaid reimbursement rates for dental care services, in conjunction with other reforms, increases provider participation and access to dental care for Medicaid enrollees.*

Introduction

Recent years have brought significant changes in dental care use patterns for low-income Americans. In 47 out of 50 states plus the District of Columbia (DC), dental care utilization among Medicaid-enrolled children increased during the past decade.[1,2] In contrast, dental care use among low-income adults has declined steadily.[3] As a result, the gap in dental care utilization between low-income and high-income children has narrowed,[4] while it has widened for adults.[5]

Low-income children and adults are subject to different dental safety nets. Medicaid and the Children's Health Insurance Program (CHIP) must provide dental benefits for children, but states have the option of providing dental benefits for adults in Medicaid.[6] In fact, increased

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enrollment in Medicaid and CHIP led to a decline in the percentage of U.S. children without any form of dental benefits.[7] The increase in the dental care utilization rate among Medicaid-enrolled children during a time of significant enrollment expansion – one out of three U.S. children were in Medicaid or CHIP by 2011[8] – has been a truly remarkable achievement.

A key issue for Medicaid is having a sufficient number of providers willing to participate. Research has shown that a variety of reasons, including a high rate of cancelled appointments among Medicaid enrollees, low reimbursement rates, low compliance with recommended treatment and cumbersome administrative procedures, limit the number of dentists that accept Medicaid. For a good overview of factors contributing to the low use of dental services by low-income individuals, see a report published in 2000 by the U.S Government Accountability Office (GAO).[9] In terms of reimbursement rates, recent research has documented a modest, but statistically significant positive relationship between Medicaid fee-for-service (FFS) reimbursement rates and dental care utilization among publicly insured children[10,11] as well as dentist participation in Medicaid.[12,13]

In this research brief, we analyze the most up-to-date information on Medicaid FFS reimbursement rates for dental care services. We measure Medicaid FFS reimbursement relative to typical commercial dental insurance charges. We analyze changes in pediatric Medicaid FFS reimbursement between 2003 and 2013. For pediatric dental care services, we present data for all states and DC. For adult dental care services, we focus only on states that provide dental benefits beyond emergency care to their adult Medicaid population. We discuss the policy implications of our findings, particularly in light of Medicaid enrollment expansion under the Affordable Care Act (ACA).

Data & Methods

We acquired pediatric Medicaid FFS reimbursement rate data for 2003 from previously published research.[14] The Health Policy Institute collected 2013 reimbursement rate data from state Medicaid program webpages. Reimbursement rate data for pediatric dental care services were collected for all states and DC. Data for adult dental care services were collected, where available, from states that provided either extensive (AK, CA, CO, CT, IA, IL, MA, NC, ND, NM, NY, OH, OR, RI, WA and WI) or limited (AR, DC, IN, KY, KS, MI, MN, MT, NJ, PA, SD, VT, VA and WY) adult Medicaid dental benefits as of August 2014.[15,16,17,18,19] Two states, Louisiana and Nebraska, offer limited adult Medicaid dental benefits, but have insufficient FFS data on their webpages and are excluded from the analysis. Medicaid programs in Kansas and Maryland do not officially cover services beyond emergency care. The majority of Medicaid beneficiaries in these states are enrolled in managed care programs which provide limited adult dental benefits. [20,21]

Many state Medicaid programs contract with a “managed care” provider and do not pay dentists directly through FFS. For example, New Jersey is a state that contracts the majority of their pediatric Medicaid enrollees to dental managed care providers. Managed care reimbursement data are not available publicly in any state, to our knowledge, and were not included in our analysis. In other words, we focused solely on Medicaid FFS reimbursement rates understanding that in many states this is not how most dental care is reimbursed. We attempted to identify the states that enroll the majority of their Medicaid beneficiaries in dental managed care programs based on an email survey and interviews with Medicaid dental program directors carried out between September 2, 2014 and September 9, 2014. In instances where we did not receive a conclusive response from program

directors (AL, DE, FL, HI, IA, LA,OH, TN and VT), we reviewed state Medicaid websites and the Centers for Medicare and Medicaid Services website to try to ascertain how states managed Medicaid dental services.[22,23,24,25,26,27,28,29,30] In instances where we did not receive a response and could not find information on the management of Medicaid dental services on a state's website (KS, KY, ME, MS, OK, PA, SC, UT and WV), we referenced previous analysis of managed care in Medicaid from 2010 data.[31] We could find no other source of information to classify states according to their intensity of managed care in Medicaid.

In fiscal year 2010, approximately 62 percent of full-benefit Medicaid-enrolled children were in a comprehensive managed care program.[32] However, we cannot definitively state how many of these managed care enrolled children received dental benefits via managed care. Further, these data are from fiscal year 2010, and many states have made changes to their Medicaid delivery models since then.

The lack of availability of reimbursement data within managed care systems presented a significant limitation to our analysis. While state Medicaid programs post FFS schedules on their websites, Medicaid managed care providers may be subject to completely different reimbursement schedules.

We obtained commercial dental insurance reimbursement charges for each state and DC for 2003 and 2013 from the FAIR Health Dental Benchmark Module.[33] The most recent data contained within the FAIR Health database cover 125 million individuals with commercial dental insurance,[34] which captures approximately 80 percent[35] of the total commercial dental insurance market. The FAIR Health database provides charge data for dental procedures, billed using the American Dental Association (ADA) CDT® codes. The benchmarks are based on the non-discounted reimbursement rates charged by providers before network discounts are applied. Since our Medicaid FFS data for adult dental care services were from 2014, we inflated the 2013 FAIR Health reimbursement rates to 2014 levels using the all-items Consumer Price Index in order to match data years.[36]

We constructed an index that measures FFS reimbursement rates in Medicaid relative to commercial dental insurance charges. We feel this is a useful measure as it takes into account Medicaid reimbursement relative to "market" conditions. Nationwide, 97.6 percent of dentists report accepting some form of commercial dental insurance and, on average, such payments account for 53.9 percent of gross billings.[37] Commercial dental insurance is a significant source of dental care financing in the United States, accounting for 48 percent of dental care expenditure in 2012.[38]

The index for pediatric dental care services is based on fourteen common procedures: periodic oral exam (D0120), comprehensive oral exam (D0150), complete x-rays (D0210), bitewing x-rays with two radiographic images (D0272), panoramic x-rays (D0330), child prophylaxis (D1120), application of topical fluoride (D1203/D1208), application of dental sealants (D1351), permanent tooth amalgam (D2150), anterior tooth resin (D2331), prefabricated steel crown (D2930), therapeutic pulpotomy (D3220), root canal (D3310), and extractions (D7140). This same basket of procedures was used to construct a Medicaid reimbursement index in previous research.[39]

The index for adult dental care services is based on ten common procedures: periodic oral exam (D0120), comprehensive oral exam (D0150), complete x-rays (D0210), bitewing x-rays with four radiographic images (D0274), panoramic x-rays (D0330), adult prophylaxis (D1110), permanent tooth amalgam (D2150), anterior tooth resin (D2331), root canal (D3310) and extractions (D7140).

Within our index, the reimbursement rate for each procedure was weighted by its share of total billings in the aggregated 2010-12 FAIR Health database.[40] In other words, both the Medicaid FFS reimbursement index and the commercial dental insurance charges index were constructed using a common weighting scheme that is based on commercial dental insurance billings patterns. We divided the Medicaid FFS reimbursement index by the commercial dental insurance charges index to calculate our main outcome of interest: Medicaid reimbursement relative to commercial dental insurance charges. We did this separately for pediatric and adult dental care services.

To test the sensitivity of our analysis, we also created indices where the reimbursement rate for a procedure is weighted by its share of total number of procedures in the aggregated 2010-12 FAIR Health database. Our results did not change substantively.

We calculated the percentage change in Medicaid-to-commercial-dental-insurance fees from 2003 to 2013 for pediatric dental services.

We also calculated Medicaid-to-commercial-dental-insurance fees in 2014 for adult dental services. The list of procedures and their corresponding weights in the pediatric and adult dental fee indices are shown in Tables 1 and 2.

There are several limitations to our analysis. First, as noted, our Medicaid reimbursement rates are based on FFS schedules. In some states, these are less relevant since most care is delivered through managed care arrangements. Second, our reimbursement indices are based on a limited set of procedures. While, ideally, all procedures would be included, this is not feasible given the data availability on Medicaid webpages and our interest in comparability across states. Moreover, our sensitivity analysis shows that alternative weighting schemes do not alter our conclusions significantly. Third, our weighting scheme is based on care patterns within the commercially-insured population. There are differences in the relevant importance of various procedures between the Medicaid and commercially-insured population.[41,42] Due to data constraints – mainly that we do not have access to claims-level data from Medicaid programs – we feel our approach is the best possible. Fourth, there may be some inconsistency in how dentists submit charge data in commercial claims which could lead to measurement error. FAIR Health's dental module provides fee data based on "the non-discounted fees charged by providers before network discounts are applied." However, based on anecdotal information, we feel that providers often submit the fees they expect to be paid rather than their true, non-discounted fees. We have no basis to evaluate this empirically and simply raise this as a potential limitation.

An alternative data source for market fees would be HPI's annual fee survey that collects full, undiscounted fees from a national sample of dentists. We did not use these data because they are not available at the state level.[43]

Results

As shown in Figure 1, there is wide variation in Medicaid reimbursement rates for pediatric dental care services. In the United States in 2013, Medicaid reimbursement was, on average, 48.8 percent of commercial insurance charges for pediatric dental services. Minnesota (26.7 percent), Rhode Island (27.9 percent), California (29.0 percent), Wisconsin (31.5 percent), Michigan (32.5 percent), Illinois (32.5 percent) and Oregon (32.6 percent) have the lowest Medicaid reimbursement rates. Delaware (81.1 percent), West Virginia (69.9 percent), New Jersey (68.8 percent) and Connecticut (66.8 percent) have the highest. As noted in the Data & Methods section, it is important to note that New Jersey, for example, has a high concentration of managed care and the Medicaid FFS reimbursement rate does not capture average

payment rates to dental providers. As a result, the New Jersey calculation needs to be interpreted extremely carefully.

Figure 2 and Table 3 also show the percentage change in Medicaid-to-commercial-dental-insurance fees for pediatric dental care services from 2003 to 2013. Connecticut, Louisiana and Texas had the largest increase in Medicaid FFS reimbursement relative to commercial dental insurance charges for pediatric dental services. For example, in Connecticut, pediatric dental Medicaid FFS reimbursement increased from 38.7 percent of commercial dental insurance charges in 2003 to 66.8 percent in 2013. Conversely, Minnesota, Tennessee, Wisconsin, New York and Iowa had the largest decline in the Medicaid-to-commercial-dental-insurance fee ratio for pediatric dental services between 2003 and 2013.

Between 2003 and 2013, 39 states experienced a decline in the Medicaid-to-commercial-dental-insurance fee ratio for pediatric dental services. Only seven states and DC experienced an increase. This means that Medicaid FFS reimbursement has not kept up with “market” rates in most states.

In 2014, there is also wide variation in Medicaid FFS reimbursement for adult dental care services (see Figure 3). Illinois (13.8 percent), New Jersey (17.8 percent) and Michigan (20.3 percent) have the lowest Medicaid FFS reimbursement rates compared to commercial dental insurance charges. Arkansas (60.5 percent), North Dakota (60.2 percent) and Alaska (58.4 percent) have the highest Medicaid FFS reimbursement rates relative to commercial dental insurance charges. In the sample of states we focused on – those that have at least a limited adult dental benefit in Medicaid – Medicaid FFS reimbursement averaged 40.7 percent of commercial dental insurance charges for adult dental care services.

Indices using weights based on the total count of procedures do not produce substantively different results. This alternative analysis is available on request.

Table 1: List of Procedures and Corresponding Weights for Pediatric Dental Services

CDT Procedure Code	Weight
D0120: Periodic Oral Exam	32.1%
D1120: Child Prophylaxis	10.5%
D0150: Comprehensive Oral Exam	8.9%
D0210: Complete X-Rays	7.4%
D7140: Extraction	7.0%
D0330: Panoramic X-rays	6.5%
D2150: Permanent Tooth Amalgam	5.5%
D1203/D1208: Application of Topical Fluoride	4.5%
D2331: Anterior Tooth Resin	4.5%
D0272: Bitewing X-rays with 2 Radiographic	4.4%
D3310: Root Canal	3.8%
D1351: Application of Dental Sealants	3.0%
D2930: Prefabricated Steel Crown	1.1%
D3220: Therapeutic Pulpotomy	0.6%

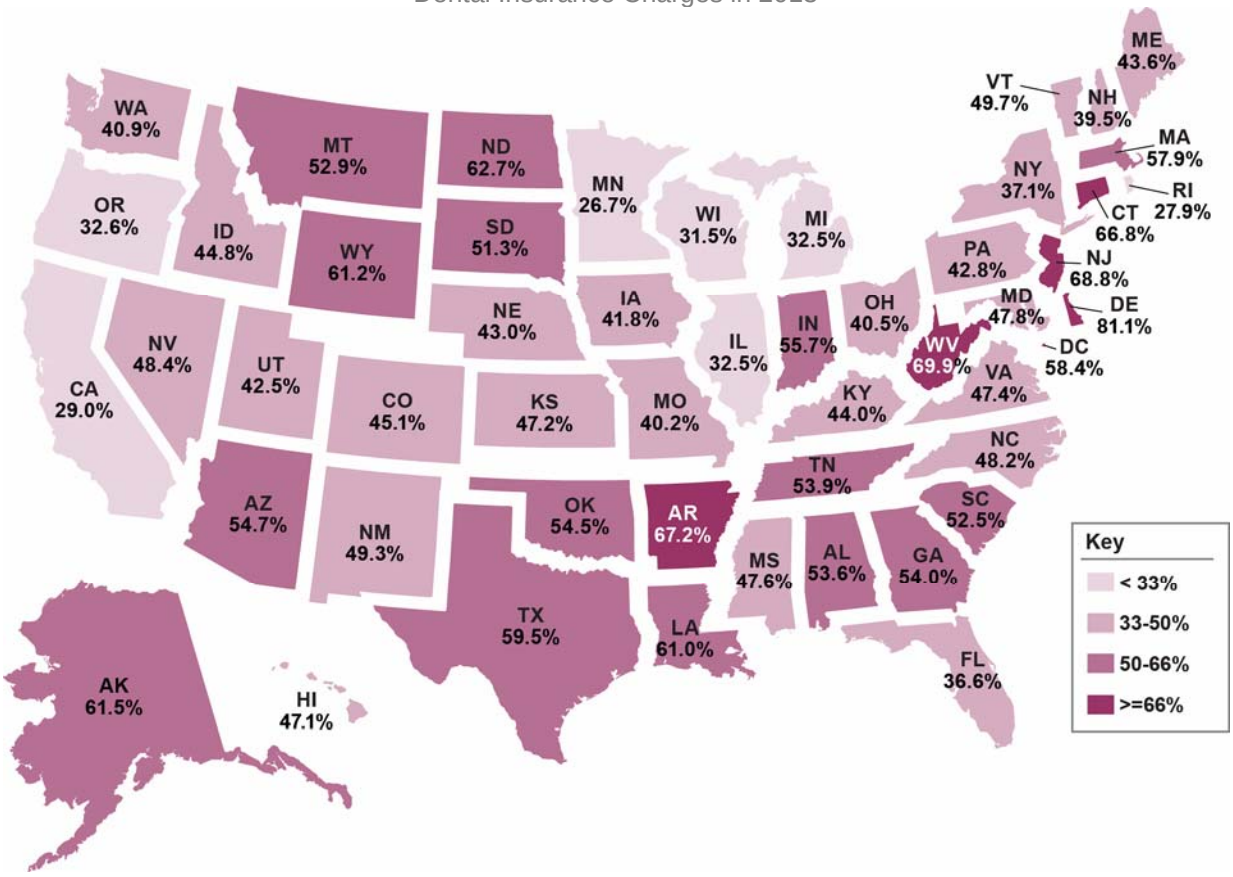
Source: FAIR Health Dental Module. **Notes:** Weights based on data from 2010-2012.

Table 2: List of Procedures and Corresponding Weights for Adult Dental Services

CDT Procedure Code	Weight
D1110: Adult Prophylaxis	37.8%
D0120: Periodic Oral Exam	21.8%
D0274: Bitewing X-rays with 4 Radiographic	10.7%
D0150: Comprehensive Oral Exam	6.0%
D0210: Complete X-Rays	5.0%
D7140: Extraction	4.8%
D0330: Panoramic X-rays	4.4%
D2150: Permanent Tooth Amalgam	3.7%
D2331: Anterior Tooth Resin	3.0%
D3310: Root Canal	2.6%

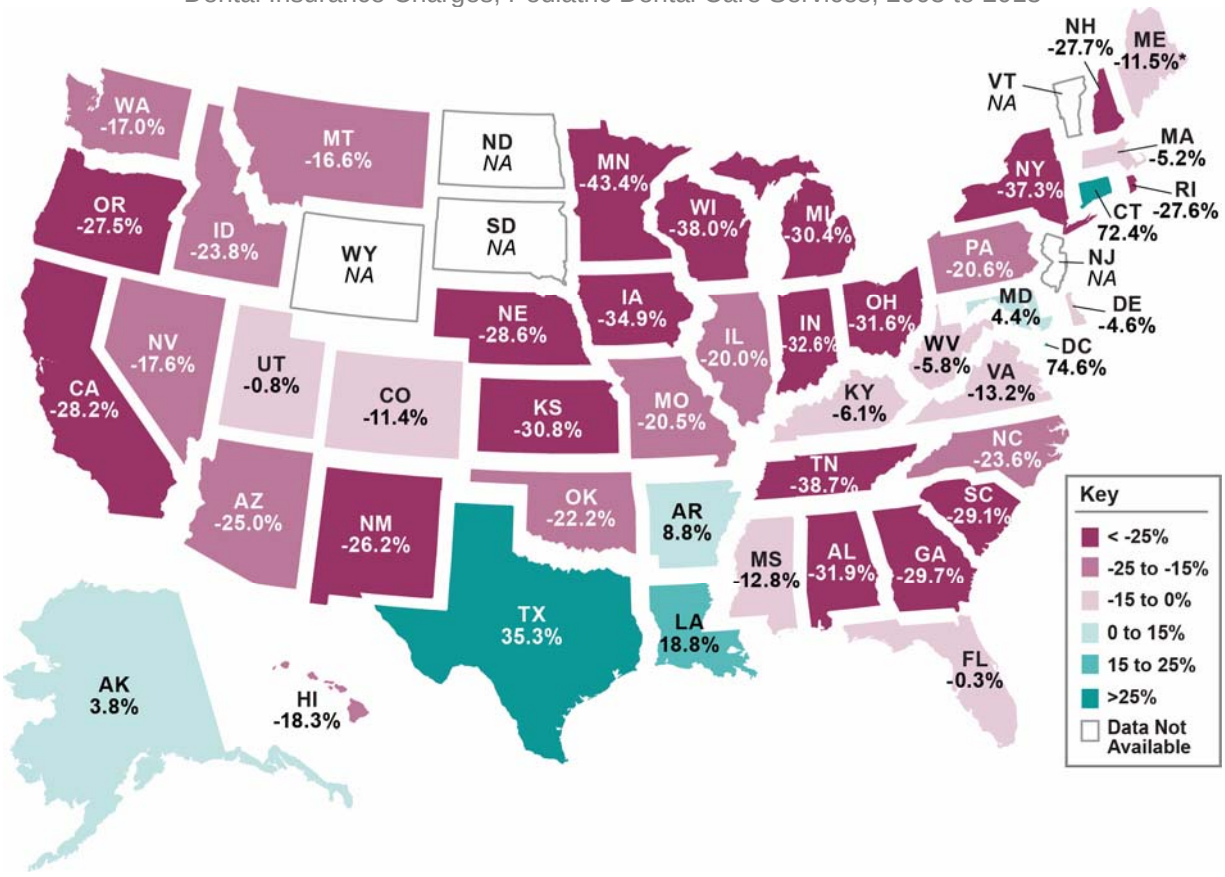
Source: FAIR Health Dental Module. **Notes:** Weights based on data from 2010-2012.

Figure 1: Pediatric Dental Medicaid Fee-for-Service Reimbursement as a Percentage of Commercial Dental Insurance Charges in 2013



Source: Medicaid FFS reimbursement data collected from state Medicaid agencies. Commercial dental insurance charges data collected from FAIR Health. **Notes:** The following states contract the majority of their Medicaid enrollees to managed care programs for dental services: DC, FL, GA, ID, KY, LA, MI, MN, NJ, NM, NV, NY, OH, OR, RI, TN, TX, VT and WV. The relative fee rates shown in this figure for these states, therefore, may not be representative of typical dentist reimbursement in Medicaid.

Figure 2: Percentage Change in the Ratio of Medicaid Fee-for-Service Reimbursement to Commercial Dental Insurance Charges, Pediatric Dental Care Services, 2003 to 2013



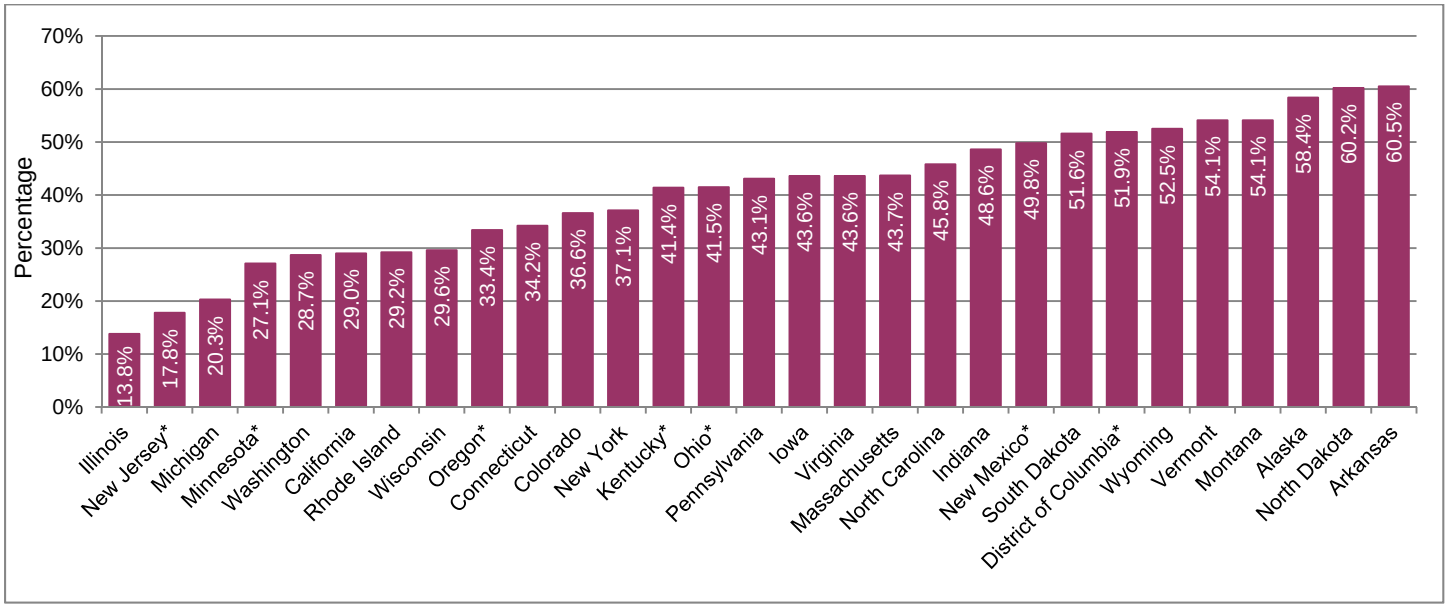
Source: Medicaid FFS reimbursement data collected from state Medicaid agencies. Commercial dental insurance charges data collected from FAIR Health. **Notes:** 2003 Medicaid FFS data for pediatric services were not available for Maine, North Dakota, South Dakota, Vermont and Wyoming. For Maine, the percentage change in the relative Medicaid FFS to commercial insurance charges rate for pediatric dental services was calculated from 2004 through 2013. The following states contract the majority of their Medicaid enrollees to managed care programs for dental services: DC, FL, GA, ID, KY, LA, MI, MN, NJ, NM, NV, NY, OH, OR, RI, TN, TX, VT and WV. For these states, the percentage change from 2003 through 2013 in relative reimbursement rates shown in this figure may not be representative of changes in typical dentist reimbursement in Medicaid.

Table 3: Medicaid Fee-for-Service Reimbursement as a Percentage of Commercial Dental Insurance Charges, Pediatric Dental Care Services, 2003 and 2013

State	2003	2013	% change
Alabama	78.7%	53.6%	-31.9%
Alaska	59.2%	61.5%	3.8%
Arizona	72.9%	54.7%	-25.0%
Arkansas	61.8%	67.2%	8.8%
California	40.4%	29.0%	-28.2%
Colorado	50.9%	45.1%	-11.4%
Connecticut	38.7%	66.8%	72.4%
Delaware	85.0%	81.1%	-4.6%
District of Columbia**	33.4%	58.4%	74.6%
Florida**	36.7%	36.6%	-0.3%
Georgia**	76.8%	54.0%	-29.7%
Hawaii	57.6%	47.1%	-18.3%
Idaho**	58.8%	44.8%	-23.8%
Illinois	40.6%	32.5%	-20.0%
Indiana	82.6%	55.7%	-32.6%
Iowa	64.1%	41.8%	-34.9%
Kansas	68.2%	47.2%	-30.8%
Kentucky**	46.8%	44.0%	-6.1%
Louisiana**	51.3%	61.0%	18.8%
Maine*	NA	43.6%	-11.5%*
Maryland	45.7%	47.8%	4.4%
Massachusetts	61.1%	57.9%	-5.2%
Michigan**	46.8%	32.5%	-30.4%
Minnesota**	47.3%	26.7%	-43.4%
Mississippi	54.6%	47.6%	-12.8%
Missouri	50.5%	40.2%	-20.5%
Montana	63.4%	52.9%	-16.6%
Nebraska	60.2%	43.0%	-28.6%
Nevada**	58.7%	48.4%	-17.6%
New Hampshire	54.7%	39.5%	-27.7%
New Jersey**	NA	68.8%	NA
New Mexico**	66.8%	49.3%	-26.2%
New York**	59.1%	37.1%	-37.3%
North Carolina	63.1%	48.2%	-23.6%
North Dakota	NA	62.7%	NA
Ohio**	59.2%	40.5%	-31.6%
Oklahoma	70.1%	54.5%	-22.2%
Oregon**	44.9%	32.6%	-27.5%
Pennsylvania	53.9%	42.8%	-20.6%
Rhode Island**	38.6%	27.9%	-27.6%
South Carolina	74.1%	52.5%	-29.1%
South Dakota	NA	51.3%	NA
Tennessee**	88.0%	53.9%	-38.7%
Texas**	44.0%	59.5%	35.3%
Utah	42.8%	42.5%	-0.8%
Vermont**	NA	49.7%	NA
Virginia	54.6%	47.4%	-13.2%
Washington	49.3%	40.9%	-17.0%
West Virginia**	74.2%	69.9%	-5.8%
Wisconsin	50.8%	31.5%	-38.0%
Wyoming	NA	61.2%	NA

Source: Medicaid FFS reimbursement data collected from state Medicaid agencies. Commercial dental insurance charges data collected from FAIR Health. **Notes:** 2003 Medicaid FFS data for pediatric dental care services were not available for ME, ND, SD, VT and WY. *For Maine, the percentage change in the ratio of Medicaid FFS to commercial dental insurance charges for pediatric dental care services was calculated from 2004 through 2013. **These states enroll the majority of their Medicaid beneficiaries in managed care programs for dental services; for these states, the data shown in this table may not be representative of typical dentist reimbursement in Medicaid.

Figure 3: Medicaid Fee-for-Service Reimbursement as a Percentage of Commercial Dental Insurance Charges, Adult Dental Care Services, 2014



Source: Medicaid FFS reimbursement data collected from state Medicaid agencies. Commercial dental insurance charges data collected from FAIR Health. **Notes:** 2013 commercial charges inflated to 2014 dollars using the all-items CPI. *These states enroll the majority of their adult Medicaid beneficiaries in managed care programs for dental services; for these states, the data in this figure may not be representative of typical dentist reimbursement in Medicaid.

Discussion

In most states included in our analysis, Medicaid FFS reimbursement rates have decreased in recent years when measured relative to "market" rates. For pediatric dental care services, 39 states experienced a decline in Medicaid-to-commercial-dental-insurance fees compared to seven states and DC that experienced an increase.

Low Medicaid FFS reimbursement is one of many important factors influencing the success of Medicaid programs. Research has shown that Medicaid FFS reimbursement increases, in conjunction with other reforms, have a significant positive effect on provider participation and access to dental care. For example, Connecticut, Maryland and Texas significantly reformed their Medicaid programs in recent years and this led to increased dental care use for Medicaid-eligible children.[44]

The Medicaid program in Connecticut increased dental reimbursement rates to the 70th percentile of commercial dental insurance rates in mid-2008 and implemented a case management program to reduce appointment cancellations. This led to a significant increase in provider participation, access to dental care, and dental care use among Medicaid-enrolled children.[45]

Maryland's Medicaid program increased dental care reimbursement, carved Medicaid dental services out of managed care,[46] increased the Medicaid dental provider network, improved customer services for providers and patients, streamlined credentialing, and created a missed appointment tracker.[47] Over the past decade Maryland has seen one of the largest increases in dental care use among Medicaid-enrolled children of any state.[48,49]

The Texas Medicaid program increased dental reimbursement by more than 50 percent in September 2007,[50] implemented loan forgiveness programs for dentists who agreed to practice in underserved areas and allocated more funds to dental clinics in underserved communities.[51] By 2010, dental care use among Medicaid-enrolled children in Texas had increased so much that it actually exceeded the rate among children with commercial dental insurance.[52]

The experience of Maryland, Texas and Connecticut illustrate the impact of "enabling conditions" – reimbursement closer to market rates, patient and provider outreach, streamlined administrative procedures, patient navigators, enhanced incentives in underserved areas – on provider participation and, ultimately, access to dental care.

In addition to state-specific evidence of the impact of Medicaid reforms, analysis at the national level also confirms the important role enhanced provider reimbursement plays in increasing provider participation and dental care use[53,54]. Unfortunately, far less research is available to quantify the impact of other types of program innovations such as the introduction of patient navigators, community dental health coordinators, enhanced program integrity measures, and streamlined administrative procedures. This is an important area for future research.

Looking forward, over eight million adults[55] and more than three million children[56] could gain dental benefits through Medicaid expansion under the ACA, significantly increasing demand for dental care among the Medicaid population. At the same time, there is strong evidence of significant unused capacity within the dental care delivery system,[57] which could potentially be leveraged to deliver care to this growing Medicaid population. In fact, new research demonstrates that significant increases in dental care delivery to low-income adults can be achieved with the existing dental workforce.[58] However, for the unused capacity in the dental care delivery system to be harnessed effectively, certain "enabling conditions" are needed, one of which, is reasonable financial incentives to providers.

It is important to highlight that low Medicaid reimbursement has been recognized as a critical issue not just in dentistry but in primary care more broadly. In fact, one key provision of the ACA mandated increases in Medicaid reimbursement rates to primary care physicians. Specifically, states were mandated to increase Medicaid reimbursement rates for key primary care services to Medicare levels, resulting in a 73 percent average increase in Medicaid reimbursement rates in 2013.[59] Dental care services were exempt from this provision of the Affordable Care Act.

The evidence strongly suggests that moving Medicaid FFS reimbursement rates for dental care services closer to commercial dental insurance levels, in conjunction with other reforms, increases provider participation and access to dental care for Medicaid enrollees. To reverse the growing gap in dental care utilization between low-income and high-income adults[60] policy makers can look to the success stories and 'promising practices' of states such as Maryland, Texas, and Connecticut in considering reforms to their Medicaid program.

Acknowledgments

We would like to thank Thomas Buchmueller, Ph.D., from the University of Michigan for providing HPI historical Medicaid FFS dental reimbursement data and Jonathan Gruber, Ph.D., from the Massachusetts Institute of Technology for providing insightful comments on an earlier draft. We would also like to thank Paul O'Connor from the American Dental Association for his tireless assistance and support in collecting Medicaid reimbursement data.

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This Research Brief was published by the American Dental Association's Health Policy Institute.

211 E. Chicago Avenue
Chicago, Illinois 60611
312.440.2928
hpi@ada.org

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$$Price\ Index = \frac{\sum_{i=1}^{P} weight_i * Fee_i}{\sum_{i=1}^{P} weight_i}$$

where "P" is the number of dental procedures in the basket of services that make up the reimbursement index. Fee_i is the measured dollar reimbursement rate for procedure *i.* Separate commercial and Medicaid reimbursement indices are calculated in this brief.

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Suggested Citation

Nasseh K, Vujicic M, Yarbrough C. A ten-year, state-by-state, analysis of Medicaid fee-for-service reimbursement rates for dental care services. Health Policy Institute Research Brief. American Dental Association. October 2014. Available from: http://www.ada.org/~/media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_1014_3.ashx.