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Increased Use of Dental Services by Children Covered by Medicaid: 2000–2010

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Abstract

This report analyzes the use of dental services by children enrolled in Medicaid from federal fiscal years (FFY) 2000 to 2010. The number and percent of children receiving dental services under Medicaid climbed continuously over the decade. In FFY 2000, 6.3 million children ages 1 to 20 were reported to receive some form of dental care (either preventive or treatment); the number more than doubled to 15.4 million by FFY 2010. Part of the increase was because the overall number of children covered by Medicaid rose by 12 million (50%), but the percentage of children who received dental care climbed appreciably from 29.3% in FFY 2000 to 46.4% in FFY 2010.

In that same time period, the number of children ages 1 to 20 receiving **preventive** dental services climbed from a reported 5.0 million to 13.6 million, while the percentage of children receiving preventive dental services rose from 23.2% to 40.8%. For children ages 1 to 20 who received dental **treatment** services, the reported number rose from 3.3 million in FFY 2000 to 7.6 million in FFY 2010. The percentage of children who obtained dental treatment services increased from 15.3% to 22.9%. In FFY 2010, about one sixth of children covered by Medicaid (15.7%) ages 6-14 had a dental sealant placed on a permanent molar.

While most states have made steady progress in improving children's access to dental care in Medicaid over the past decade, there is still substantial variation across states and more remains to be done.

Keywords: Access, Demand, Utilization of Services, Child and Adolescent Health, Dentistry, Dental Care, Medicaid, Children's Health Insurance Program, CHIP, SCHIP

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Background

In 2007, the tragic death of a 12-year-old Maryland boy, Deamonte Driver, who died from a brain infection caused by an untreated tooth infection, brought attention to the difficulties Medicaid-enrolled children could face in accessing dental care (Otto, 2007). It also prompted lawmakers to include in the Children's Health Insurance Program Reauthorization Act of 2009 (CHIPRA) a requirement for CHIP programs to cover dental services starting in 2010, a requirement for the Department of Health and Human Services to provide clients with a Web site listing dentists who serve Medicaid or CHIP clients, and an order for the Government Accountability Office to conduct an analysis of the receipt of, and barriers to, dental services provided to Medicaid-enrolled children (GAO, 2010). The report found that in federal fiscal year (FFY) 2008, only 36% had received any dental service, 32% had received a preventive dental service, and 18% had received a dental treatment service. In eight states, 30% or less of Medicaid-enrolled children had received any dental service. While these percentages represented progress in that they were higher than the percentages for fiscal year 2001, they still reflected Medicaid's failure to adequately ensure children's access to dental services.

Dental care is a key component of Medicaid's Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) benefit. EPSDT does not apply to adult Medicaid beneficiaries, so dental care is an optional service for that population. Prior research has found that low-income children have poorer access to dental care and a higher prevalence of dental caries than higher-income children (Shi & Stevens, 2005; Dye, Li, & Beltran-Aguilar, 2012). However, research has also shown that, when holding constant socioeconomic factors, children covered by Medicaid or CHIP tend to have similar access to dental care as privately-insured children, and better access than uninsured children (Dubay & Kenney, 2001; Duderstadt, Hughes, Soobader, & Newacheck, 2006; Perry & Kenney, 2007).

To further bolster access to dental care, the Centers for Medicare & Medicaid Services (CMS) introduced an Oral Health Strategy in 2011 (CMS, 2011a). The strategy recognizes multiple barriers to children's dental care access, such as low reimbursement rates for dental providers, which results in fewer dentists willing to serve Medicaid beneficiaries. For children on Medicaid, and their parents/guardians, a lack of knowledge about the importance of dental care and of benefits available to them under Medicaid, and a difficulty with transportation to dental appointments represent further barriers to care. The Oral Health Strategy consists of five components: 1) working with states to develop pediatric oral health action plans; 2) strengthening technical assistance to states and facilitating state/tribal peer-to-peer learning; 3) bringing outreach to providers; 4) providing outreach to beneficiaries; and 5) partnering with other HHS agencies.

This article reviews the progress that has been made over the past decade (FFYs 2000 to 2010) in improving children's use of dental care in Medicaid. Major progress has been made, although further improvements are needed.

Methods and Data

These analyses are based on aggregate data reported annually to the federal government by state Medicaid agencies using Form CMS-416 for FFYs 2000 to 2010. All data reflect updates posted on the Medicaid.gov Web site by CMS as of April 11, 2013. The report includes all children covered by Medicaid, including those whose coverage was supported by CHIP. The form does not separately report CHIP-funded children and comparable data are not available for separate state CHIP programs. Typically, state agencies complete these reports depending on analyses of their Medicaid claims data, based on procedure codes using the Current Dental Terminology (CDT) system specified in the federal report instructions (CMS, 2011b). In many cases, states ask Medicaid managed care organizations to compile data based on their administrative records. They report the unduplicated number of children receiving various dental or oral health care services paid by Medicaid over the course of the federal fiscal year.

This report focuses on the number of children who received any dental service in the federal fiscal year, any preventive dental service (e.g., dental cleaning or application of dental sealants), or any dental treatment service (e.g., filling a cavity). Since the data reported for each category of service are unduplicated, a child who uses, for example, three preventive dental services in a year is reported as just one child in the preventive services category. If that same child also uses a dental treatment service, the child would be counted in the dental treatment category as well. Our analyses are limited to children between the ages of 1 and 20, since few children under 1 receive dental care. We report national trend data from FY 2000 to 2010 and state-specific data for FFY 2010, the most recent year of data fully available. We present cumulative growth rates over the decade, as well as compounded annual growth rates.

From FFY 2000 to FFY 2009, the format for reporting dental services was consistent, but the reporting instructions changed in FFY 2010. A particularly important change was that the universe of children for whom the receipt of dental services was to be reported shifted from all children, regardless of length of enrollment, to children covered by Medicaid for at least 90 continuous days, recognizing that children may have little opportunity to use services if they are enrolled for only a brief period. To make the FFY 2010 data consistent with earlier years, we inflated the dental service numbers reported for the year FFY 2010, by multiplying them by the ratio of the total number of children eligible for EPSDT benefits during the reporting period, to the number of children eligible for EPSDT benefits for 90 continuous days. This changes the count of children served in FFY 2010, but does not alter the percent estimate for that year.

For example, Maryland reported that 64,236 children ages 10 to 14 who were enrolled for at least 90 continuous days received preventive dental services in FFY 2010. The number of

children in Maryland in this age range who were eligible for EPSDT benefits for any period of time during FFY 2010 was 123,601, and the number of those children enrolled for at least 90 continuous days was 118,843—a ratio of 1.04. Multiplying by this ratio, the reported number of children in this age range receiving preventive dental care produces an estimate of 66,808 children ages 10 to 14 in FFY 2010 who received a preventive dental service. This number is methodologically more consistent with reports for 2000 to 2009. To make this clear, Exhibit 1 notes that the number of children receiving services in FFY 2010 are adjusted and are not exactly what states reported. In Exhibit 2, we present state-specific data for FFY 2010; since we are not making comparisons with prior years, those data are not adjusted.

The CMS-416 reporting instructions made other smaller changes in FFY 2010. They specified that dental services reported on certain lines should be limited to those provided “by or under the supervision of a dentist.” As a result, states had to shift services performed by health care professionals other than dentists or by dental professionals working without a dentist’s supervision to another category. We made no adjustment for this change even though the resulting reporting differences should have the effect of slightly lowering FFY 2010 estimates (even after the adjustment we described) for dental services, compared to earlier years.

Insofar as the CMS-416 data are based on administrative claims, they are not subject to respondent recall error and they represent the most comprehensive administrative data available on this topic for Medicaid. Nonetheless, they may be subject to reporting error if dental procedures are not coded correctly or if the state processing excludes some services paid by Medicaid or had other problems. For example, certain types of service locations (federally qualified health centers, rural health clinics and Indian Health Service providers) are not required to submit procedure codes, so dental procedures they perform may not be captured. Data for Maine in FFY 2003, FFY 2004, and FFY 2005 were missing; we estimated those data for use in the trend analysis through interpolation.

Results

National Trends for Children on Medicaid: FFY 2000–2010

Between FFY 2000 and 2010, the total number of children ages 1–20 enrolled in Medicaid grew from 21.6 to 33.2 million, an increase of 53.7% (Exhibit 1; children covered by Medicaid also include children covered in Medicaid expansions funded by CHIP). Other analyses have shown that the growth of publicly-funded insurance coverage for children helped fuel a reduction in the percent of children who are uninsured, despite the erosion of privately-funded insurance (Choi, Sommers, & McWilliams, 2011).

Any Dental Services

From FFY 2000 to FFY 2010, the number of children ages 1 to 20 who were reported as receiving any dental services (diagnostic, preventive, or treatment) in Medicaid more than doubled from

6.3 million to 15.4 million (Exhibit 1), representing a 144% growth over the decade. While this level of growth was partly attributable to overall increases in Medicaid enrollment, it also reflects a major increase in the percentage of enrolled children who used dental care in the reporting year, rising from 29.3% in FFY 2000 to 46.4% in FFY 2010 (Exhibit 2). The data also suggest that the increased utilization of dental services was relatively continuous at the national level, steadily improving from one year to the next.

Exhibit 1. Changes in the Number and Percentage of Children Ages 1–20 Covered by Medicaid and Receiving Dental Services, FFY 2000–2010

Federal Fiscal Year	Number of Children Ages 1-20 in EPSDT	Number of Children Receiving			Percent of Children Receiving		
		Any Dental Services	Preventive Dental Services	Dental Treatment Services	Any Dental Services	Preventive Dental Services	Dental Treatment Services
2000	21,623,551	6,333,525	5,027,395	3,303,971	29.3%	23.2%	15.3%
2001	22,892,995	6,593,050	5,381,495	3,548,745	28.8%	23.5%	15.5%
2002	24,782,926	7,477,755	6,158,301	4,062,069	30.2%	24.8%	16.4%
2003	26,186,138	8,604,571	7,083,302	4,704,768	32.9%	27.0%	18.0%
2004	27,975,234	9,561,670	7,909,744	5,186,416	34.2%	28.3%	18.5%
2005	28,631,327	10,092,537	8,474,147	5,345,997	35.2%	29.6%	18.7%
2006	29,311,369	10,359,215	8,772,210	5,506,873	35.3%	29.9%	18.8%
2007	29,093,903	10,795,130	9,275,966	5,611,363	37.1%	31.9%	19.3%
2008	29,815,099	11,634,314	10,142,684	5,787,100	39.0%	34.0%	19.4%
2009	31,394,986	13,368,421	11,688,076	6,487,957	42.6%	37.2%	20.7%
2010 (adj.)	33,246,146	15,419,670	13,557,599	7,629,261	46.4%	40.8%	22.9%
Average annual % growth	4.4%	9.3%	10.4%	8.7%			
Cumulative % Growth 2000-2010	53.7%	143.5%	169.7%	130.9%			

NOTE: Data for FFY 2010 are adjusted because of a change in reporting requirements. See the text for explanation.

SOURCE: FFY 2000-2010 CMS-416 reports, Line 1, (Line 1a and Line 1b for 2010), Lines 12a, 12b, and 12c.

Preventive Dental Services

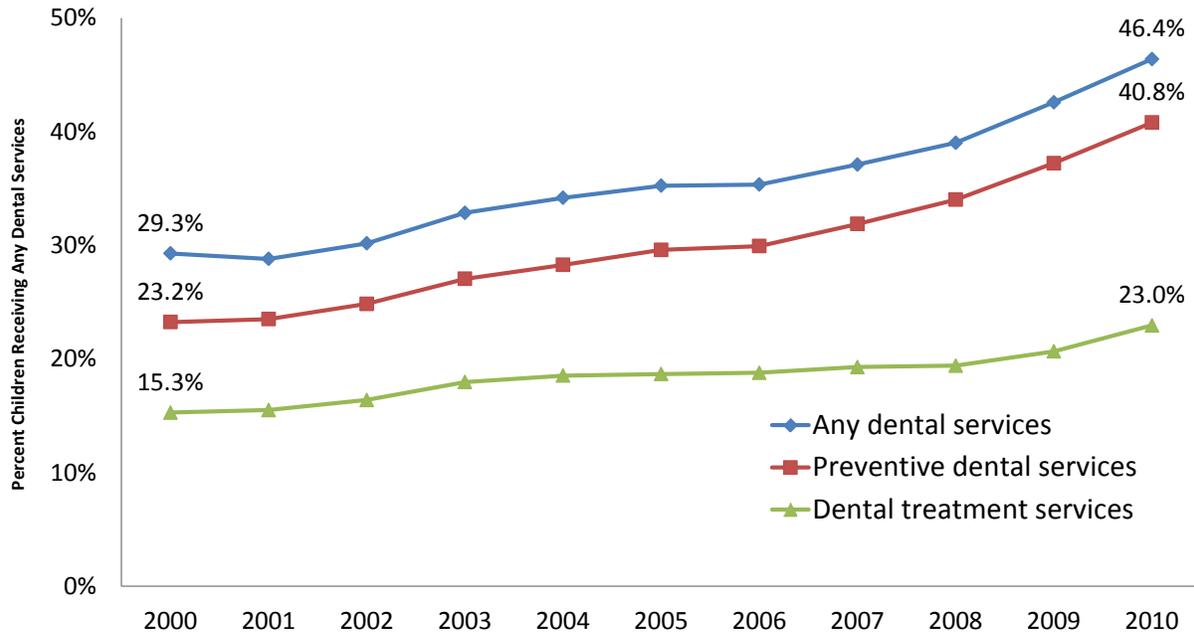
The results are also positive for data reported about the receipt of preventive dental care. The number of children ages 1 to 20 receiving at least one preventive dental service under Medicaid rose from 5.0 million in FFY 2000 to 13.6 million in FFY 2010 (adjusted), a 170% cumulative increase. The percentage of children who obtained preventive dental care almost doubled from 23.2% in FFY 2000 to 40.8% in FFY 2010 (Exhibit 2).

Dental Treatment Services

Between FFY 2000 and FFY 2010 (adjusted), the number of children ages 1 to 20 who received at least one dental treatment under Medicaid grew 131%, rising from 3.3 million to 7.6 million. The percentage of children covered by Medicaid who obtained dental treatment services rose from 15.3% in FFY 2000 to 22.9% in FFY 2010 (Exhibit 2).

In sum, while there were appreciable increases in the utilization of pediatric dental services in Medicaid from FFY 2000–2010, these data indicate that there was particularly strong growth in the use of preventive dental services for children.

Exhibit 2. Percentage of Children Ages 1–20 Covered by Medicaid Who Received Any Dental Services, Preventive Dental Services, or Dental Treatment Services FFY 2000–FFY 2010



Source: FFY 2000-2010 CMS-416 reports.

Dental Care for Children on Medicaid Across the States

There is substantial variation in the utilization of dental care from state to state. For example, in FFY 2010, the percent of children with any preventive dental care ranges almost four-fold across the states, from 15.1% in one state to 57.6% in another. Exhibit 3 presents state-specific data for FFY 2010. Since these data are not being reported as trends, they are presented as reported by states and are not adjusted to be comparable to prior year data. Thus, the universe is for children ages 1 to 20 enrolled for at least 90 continuous days in the federal fiscal year and the dental services are those provided by, or under the supervision of, a dentist.

As seen in Exhibit 2, on average, states report that a sizable percentage of Medicaid children receive dental care, but only 17 of 51 states reached more than half of enrolled children. The state data parallel the national results in showing that preventive dental care is more frequently used than dental treatment services. Forty-three states report that 40% or more of children received any type of dental care in FFY 2010 and 17 states report that 50% or more did so. Thirty-three states reported that 40% or more of children received preventive dental care and 15 reported that 25% or more received dental treatment services.

The new reporting requirements established for FFY 2010 may have led to problems for some states. There are often transitional difficulties when new reporting requirements are established and it may take time before the problems are resolved. CMS has conducted reviews to work with states that have anomalous results. Our comparison of FFY 2009 and FFY 2010 data suggests that most state data were consistent across the years.

Use of Dental Sealants for Children on Medicaid

Beginning in FFY 2010, the CMS-416 began reporting additional details about dental care. An important addition was the annual reporting of the use of dental sealants, as required by CHIPRA. States must report the unduplicated number of children ages 6 to 14 who have a dental sealant placed on a permanent molar in the federal fiscal year, regardless of whether a dentist or non-dentist applied it. The use of dental sealants (a tough plastic coating over the tooth) is considered one of the most effective methods to prevent dental caries (Beauchamp et al., 2008). The Healthy People 2020 public health goals for the nation include an objective to “increase the proportion of children and adolescents who have received dental sealants on their molar teeth” (DHHS, 2012).

There was a substantial variation in the percent of children receiving sealants reported by states, ranging from 0% to 57.2% (Exhibit 3). Nationwide, about one-sixth of children, ages 6 to 14 and covered by Medicaid (15.7%), had a dental sealant placed in FFY 2010. Since this was the first time that states had to report this information, these data should be considered preliminary, and reporting should improve with time; it seems unlikely that the actual levels varied as widely as reported.

A reporting problem in this area, in addition to the problems with federally qualified health centers and other sites described earlier, is that many children receive dental sealants in broad dental health programs at schools or other community settings. If the care in these broad programs was not paid by Medicaid, then it will not be reported in the Medicaid claims system, even if Medicaid-enrolled children were the recipients. Thus, the level of sealants paid by Medicaid and reported in the CMS-416 is not the same as the incidence of care received by children covered by Medicaid. Some data reported on dental sealants, such as those in the Center for Disease Control and Prevention’s National Oral Health Surveillance System, are prevalence data based on the percentage of children who ever had a dental sealant placed. Since sealants may last for years, the incidence of dental sealants applied in a year should be less than the prevalence of children who ever had them placed.

Exhibit 3. The Number of Children Ages 1–20 Covered by Medicaid and the Percentage Receiving Dental Services in FFY 2010

State	Number of Children Ages 1-20 in EPSDT	Percentage of Children Receiving:			
		Any Dental Care	Preventive Dental Care	Dental Treatment	Dental Sealants (for Children Ages 6-14)
Alabama	492,002	52.7%	49.6%	21.4%	26.8%
Alaska	80,121	48.3%	41.2%	27.2%	20.4%
Arizona	731,295	51.1%	45.6%	26.0%	16.8%
Arkansas	361,256	50.0%	46.0%	25.3%	10.2%
California	4,005,732	41.8%	34.2%	22.0%	12.2%
Colorado	358,138	52.0%	46.9%	26.5%	16.9%
Connecticut	286,569	59.9%	54.1%	27.0%	24.1%
Delaware	88,534	44.9%	41.1%	21.2%	20.6%
District of Columbia	83,009	47.4%	39.1%	21.8%	11.9%
Florida	1,758,401	25.0%	15.1%	8.3%	6.0%
Georgia	1,031,380	49.0%	45.7%	22.4%	12.3%
Hawaii	130,008	52.9%	41.1%	25.0%	8.2%
Idaho	163,146	62.6%	55.3%	35.1%	15.1%
Illinois	1,507,535	50.4%	46.7%	18.8%	21.2%
Indiana	688,158	33.2%	29.3%	14.9%	11.6%
Iowa	260,000	45.0%	39.7%	18.9%	13.2%
Kansas	209,264	45.1%	41.9%	20.4%	23.0%
Kentucky	482,301	48.5%	42.6%	24.6%	57.2%
Louisiana	747,075	46.5%	42.6%	24.6%	10.1%
Maine	123,555	24.5%	19.7%	10.9%	8.6%
Maryland	530,930	52.9%	47.6%	25.0%	20.6%
Massachusetts	512,473	54.0%	50.0%	29.8%	28.6%
Michigan	1,129,494	35.8%	35.0%	15.4%	9.0%
Minnesota	410,006	44.0%	39.6%	19.9%	15.0%
Mississippi	370,081	48.2%	43.2%	22.4%	16.8%
Missouri	602,755	34.1%	30.4%	15.6%	11.6%
Montana	68,884	39.6%	34.5%	21.5%	13.6%
Nebraska	143,664	50.0%	46.2%	22.1%	18.9%
Nevada	191,222	41.4%	36.5%	23.6%	20.5%
New Hampshire	86,347	60.1%	55.6%	25.9%	17.3%
New Jersey	617,282	45.4%	39.7%	24.1%	12.1%
New Mexico	338,259	49.5%	45.5%	48.9%	14.0%
New York	1,914,047	40.4%	37.2%	19.3%	11.1%
North Carolina	985,743	47.7%	43.7%	23.5%	14.6%
North Dakota	42,134	38.5%	30.3%	15.7%	12.6%
Ohio	1,102,254	48.0%	44.0%	20.4%	0.0%
Oklahoma	503,597	51.1%	46.9%	28.3%	9.3%
Oregon	292,572	41.9%	36.0%	20.1%	13.6%
Pennsylvania	1,084,889	41.8%	36.9%	20.3%	13.5%
Rhode Island	100,017	49.0%	42.9%	21.5%	12.6%

Exhibit 3 (cont.)

State	Number of Children Ages 1-20 in EPSDT	Percentage of Children Receiving:			
		Any Dental Care	Preventive Dental Care	Dental Treatment	Dental Sealants (for Children Ages 6-14)
South Carolina	523,043	55.7%	53.0%	26.0%	14.6%
South Dakota	77,040	43.7%	39.1%	15.6%	9.9%
Tennessee	763,634	49.0%	44.5%	24.5%	13.3%
Texas	2,911,715	66.5%	54.7%	35.6%	32.3%
Utah	168,528	49.3%	48.4%	24.3%	0.0%
Vermont	57,994	58.8%	57.6%	24.1%	16.0%
Virginia	576,017	49.9%	46.0%	25.7%	14.6%
Washington	701,292	55.4%	51.0%	32.1%	18.9%
West Virginia	194,131	50.0%	43.6%	49.6%	13.8%
Wisconsin	498,473	25.8%	23.0%	11.5%	9.5%
Wyoming	51,705	43.4%	43.3%	23.7%	14.8%
U.S. Total	31,137,701	46.4%	40.8%	23.0%	15.7%

NOTE. All data in this table is for children continuously enrolled for at least 90 days in FFY 2010. They are not adjusted to be comparable with prior year data and thus differ somewhat from data in Exhibit 1 and Exhibit 3.

SOURCE: FFY 2010 CMS-416 reports, Lines 1b, 12a, 12b, 12c, and 12d.

Discussion

The data in this paper come from Medicaid administrative data reported in the CMS-416 report. Like other administrative data, the accuracy depends on the quality of the information reported by state agencies or their managed care contractors over the years. As noted, there was a change in reporting requirements in 2010, but states may have changed their reporting methods over the years as well. Nonetheless, these data represent the most accurate source of information currently available.

Over the past decade, states have made substantial progress in improving children's access to dental care in Medicaid. The good news is that there has been steady improvement: the number of children receiving dental care more than doubled from FFY 2000 to 2010 and the percentage of children receiving dental care grew from 29.3% to 46.4%. On the other hand, data from the 2010 Medical Expenditure Panel Survey show that the 53.0% of children with private insurance aged 1 to 20 were reported as receiving any dental care in the past 12 months (authors' analysis), suggesting that there is room for improvement in Medicaid utilization. Although Medicaid always offers pediatric dental coverage, millions of children enrolled in Medicaid do not receive routine dental care. Federal and state governments have begun to address numerous barriers to dental care, but they continue to persist as obstacles: there is an inadequate number and geographic distribution of dentists and other oral health care providers who treat Medicaid patients; families misunderstand the importance of pediatric dental care, particularly preventive services; and there are transportation and scheduling problems that make it harder for families

to take their children for care (CMS, 2011a). CMS has taken several proactive steps to work with states and other partnering organizations to further improve access to dental care in Medicaid, including the development of its Oral Health Strategy. These efforts should lead to further improvements in the utilization of dental services and in reductions to problems caused by a lack of dental care.

In addition, the enactment of the Affordable Care Act (ACA) means that federal responsibilities for dental coverage have expanded beyond Medicaid and CHIP. The ACA creates new health insurance exchanges, and requires most private health plans offered in the individual and small group markets to offer “Essential Health Benefits.” The Essential Health Benefits includes ten types of services, including pediatric dental and vision care, based on benefit designs, such as those offered by CHIP programs or the Federal Dental and Vision Insurance Program (Center for Consumer Information and Insurance Oversight, 2011). About one-fifth of privately-insured children lack any dental insurance coverage (Liu et al, 2007). The expanded availability of pediatric dental coverage under the ACA will assure that many more privately-insured children will have dental coverage, and children will be able to maintain dental coverage even as they shift between public and private insurance coverage.

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