

# The impact of insurance coverage on children's dental visits and expenditures, 1996

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Approximately two-thirds of U.S. children were covered by private health insurance during 1996.<sup>1,2</sup> Health insurance coverage has been shown to be a contributing factor in the decision to seek health care services.<sup>3,4</sup>

Health insurance coverage also has been shown to relate positively with the use of dental services, even if insurance does not uniformly include dental benefits.

**Medicaid dental coverage seems to have had a lesser effect on the likelihood of a child's having a dental visit than had private coverage.**

An analysis of the National Medical Expenditure Survey,<sup>5</sup> or NMES, conducted by the Agency for Health Care Policy and Research (now the Agency for Healthcare Research and Quality) in 1987, showed that disparities in the use of dental services appeared to correlate with children's health insurance status, even though dental benefits were not uniformly held in private insurance plans.<sup>6</sup> According to this analysis, children covered by health insurance were 2.5 times more likely to obtain dental care than those without coverage.<sup>6</sup> Additionally, a study of children's access to health care reported that almost 18 percent of uninsured children were unable to get needed dental care<sup>7</sup> and authors of another study of unmet health needs among children reported that dental care was the most prevalent unmet need.<sup>8</sup> For uninsured children with special health care needs, this is especially true, since they are nearly six times more

**Background.** Health insurance coverage has been shown to relate positively with the use of dental services. The purpose of the authors' study was to describe the level of dental coverage among U.S. children and to assess the impact of dental coverage on children's use of dental services and expenditures for dental care.

**Methods.** The focus of these analyses is on dental care coverage, use and expenditures for U.S. children during 1996. National estimates are provided for the population with dental coverage, the population with a dental visit, and mean total expenditure for each of several socioeconomic and demographic categories during 1996 using data from the Medical Expenditure Panel Survey.

**Results.** Fifty-two percent of children younger than 18 years of age had private dental coverage during 1996. Approximately 56 percent of children in families with a poverty status level of 133 percent of the federal poverty level or below were covered by Medicaid during 1996. Fifty-six percent of children with private coverage had made at least one dental visit, compared with 28 percent of noncovered children. Twenty-eight percent of children covered by Medicaid had made at least one dental visit compared with 19 percent of noncovered children.

**Conclusion.** Medicaid dental coverage seems to have had a lesser effect on the likelihood of a child's having a dental visit than had private coverage. Improving oral health for poorer children may depend partly on improving the design of Medicaid dental coverage programs.

**Practice Implications.** By understanding these analyses, practitioners, advocates and policymakers will be better positioned to provide care, improve access and better meet the needs of all American children.

likely to have an unmet dental treatment need than insured chronically ill and disabled children.<sup>8,9</sup>

The effect of not having dental care coverage specifically appears to be even greater than that of not having health insurance. For instance, children with no dental insurance are three times more likely to have an unmet dental need than are their covered peers.<sup>10</sup> An analysis of the 1989 National Health Interview Surveys, or NHIS, conducted by the National Center for Health Statistics of the Centers for Disease Control and Prevention, provides further evidence of the outcome of not having dental insurance. NHIS data suggest that while 70 percent of all people with insurance had had at least one dental visit during 1989, only 50 percent of similar people without dental insurance reported having had at least one visit during the same time period.<sup>11</sup>

Dental insurance is not distributed uniformly among the U.S. population. While slightly less than 52 percent of the population reported having dental insurance during 1989, approximately 16 percent of children younger than 9 years of age and 25 percent of children between the ages of 9 and 11 years were covered by dental insurance during this same period.<sup>11</sup> As a result of these disparities, additional interest in and impetus to improve children's dental health and access to care recently have increased. For example, federal efforts to improve children's access to dental care since 1997 have included legislation allowing dental coverage in the Centers for Medicare and Medicaid Services' State Child Health Insurance Program, or SCHIP, expanding advanced dental education training programs to address pediatric care, and creating demonstration projects for low-income children. The U.S. Department of Health and Human Services has developed a series of oral health initiatives in its agencies, and the U.S. surgeon general has commissioned a coordinated effort to address children's access to dental care.

In light of all this, we undertook a study to examine further the status of children's dental health and the impact of dental care coverage on children's access to dental care by analyzing data from the Agency for Healthcare Research and Quality-sponsored 1996 Medical Panel Expendi-

ture Survey, or MEPS<sup>12</sup> (the successor to the NMES).

## METHODS

The 1996 MEPS is the third in a series of nationally representative health surveys of the U.S. community-based, noninstitutionalized population that is sponsored by the Agency for Healthcare Research and Quality, or AHRQ. The MEPS collects health care expenditure, use and payment source data, along with socioeconomic, demographic and health insurance data similar to those in its predecessor surveys. It differs from the NMES and the National Medical Care Expenditure Survey, or NMCES, in that data on household respondents in each panel are collected for two consecutive years and the survey is fielded continuously.<sup>12</sup> The target for the 1996

MEPS was a sample of 10,500 households derived from the NHIS consisting of 21,571 people. To collect health expenditure and use data for 1996, investigators interviewed each MEPS household in person three times over an approximate 18-month period; the third round of interviews was conducted at some time between February and May of 1997.<sup>12</sup> The combined full-year 1996 response rate of the

MEPS sample through the third round was 70 percent.<sup>12</sup>

The focus of our analysis is on dental coverage and dental services use in 1996 among the U.S. noninstitutionalized child population. Specifically, we provide national estimates of dental coverage status and the population percentage with a dental visit for children from newborn to 18 years of age for each of several socioeconomic and demographic categories during 1996.

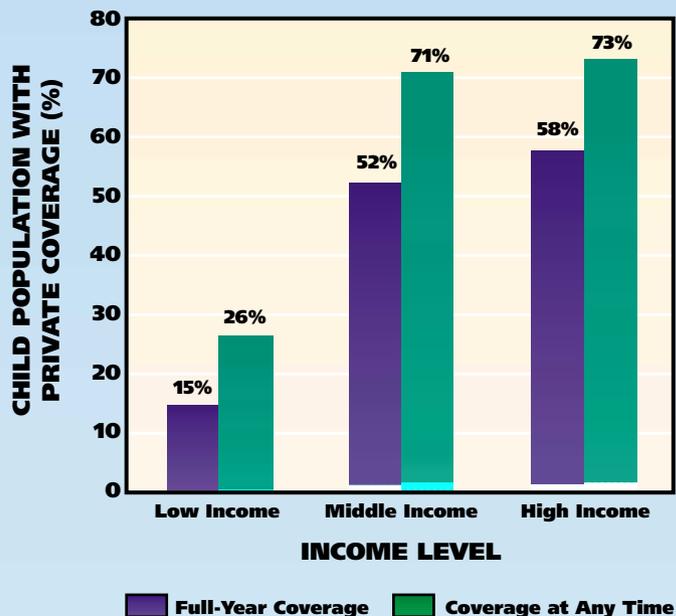
The variable for dental coverage indicates whether a participant was eligible to receive and/or actually received payments on his or her behalf for dental care obtained during 1996. More specifically, we considered a person to have dental coverage if he or she had a self-report or a proxy's report of having received dental coverage at any time during 1996. We also considered a person to have dental coverage if he or she had a self-report or a proxy's report of having received an insurance payment for dental care received during 1996. Children who qualified as covered at each of the three MEPS interviews were con-

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sidered to have been covered for a full year.

While Medicaid provides medical care coverage for all enrolled children, Medicaid dental coverage varies in scope and generosity among the states. The variable for Medicaid dental coverage indicates whether a participant was eligible and enrolled to receive dental Medicaid coverage and/or actually received Medicaid payments on his or her behalf for dental care obtained during 1996. Specifically, we considered a person to have Medicaid dental coverage if he or she had a self-report or a proxy's report of Medicaid coverage at any time during 1996 consistent with 1989 Consolidated Omnibus Budget Reconciliation Act and state regulations and state eligibility expansions. For instance, we considered the following people to have Medicaid dental coverage if they reported having Medicaid coverage: pregnant women in families with a poverty status up to 133 percent of the federal poverty level, or FPL; children up to 6 years of age in families with a poverty status at least up to 133 percent FPL; and children up to 14 years of age in families with a poverty status at least up to 100 percent FPL. Additionally, we considered children residing in states that expanded Medicaid eligibility beyond these minimum income requirements to have had Medicaid coverage if they resided in an "expansion state" and reported having Medicaid coverage. Expansion states are California, Connecticut, Indiana, Iowa, Maine, Massachusetts, Michigan, Minnesota, New Jersey, New Mexico, New York, North Dakota, Pennsylvania, Washington and Wisconsin. We considered children who qualified as Medicaid-covered at each of the three MEPS interviews to have been covered for a full year.

These measures of private or Medicaid dental coverage are more inclusive than a simple self-report of coverage; they also are less likely to miss covered participants who fail to report coverage and are similar to methods used in other studies, including a recent study of Medicare beneficiaries and drug coverage.<sup>13</sup> We obtained coverage variables from the Health Insurance Section of the Household Component of MEPS. Private dental coverage is coverage offered as a supplement to medical coverage or as coverage obtained from an unrelated and separate plan. Distinctions between these types of dental coverage offerings are not discernible with these data. Additionally, since some medical coverage plans may include dental benefits that were not reported by respon-



**Figure 1. Percentage of the U.S. child population with private dental coverage by income and coverage type, 1996, private coverage for a full year vs. private coverage at any time during the year. Low income is defined as incomes below 200 percent of the federal poverty level; middle income, 200 percent to 399 percent of the poverty level; and high income, 400 percent of the poverty level and higher. Population without private coverage may include people with public coverage. Source: Cohen.<sup>12</sup>**

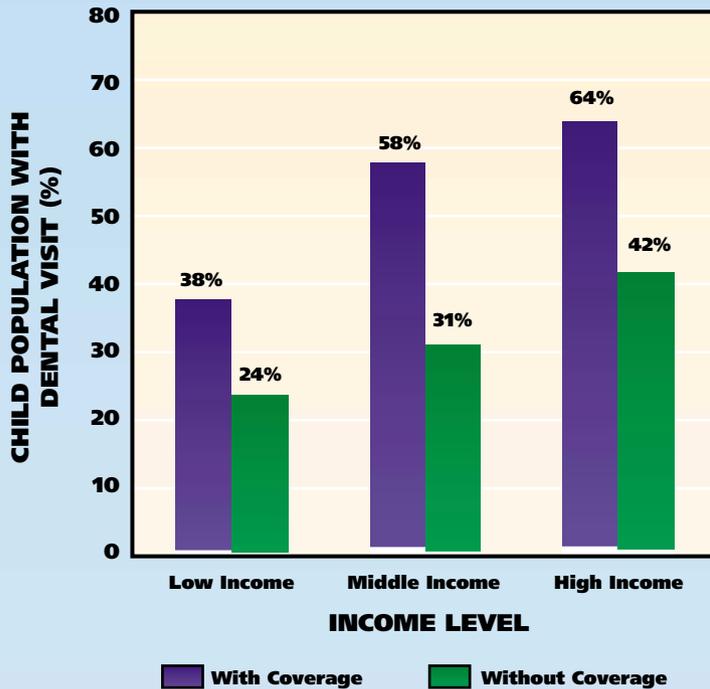
dents, these estimates may understate somewhat the actual number of children with coverage.

To ensure sufficient numbers to produce reliable national estimates, we combined sociodemographic variable categories when necessary. All estimates and statistics we report here were computed with the use of the software package SUDAAN,<sup>14</sup> taking into account the complex sampling design of MEPS.

## RESULTS

There were 6,595 participants younger than 18 years of age in the 1996 MEPS, representing 75,326,026 noninstitutionalized U.S. children. Of these children, 49 percent ( $n = 3,235$ ) were female, 49 percent ( $n = 3,225$ ) were nonwhite and 36 percent ( $n = 2,364$ ) were between the ages of 11 and 18 years.

Figure 1 shows the percentage of the child population with full-year and partial-year dental coverage according to income. Figure 2 displays the percentage of the child population that had had a dental visit for those with and without coverage, by income level. Low-income children were less



**Figure 2. Percentage of the U.S. child population that had made a dental visit, by income and private dental coverage, 1996. Dental coverage refers to coverage at any time during the year. Population without private coverage may include people with public coverage. Low income is defined as incomes below 200 percent of the federal poverty level; middle income, 200 percent to 399 percent of the poverty level; and high income, 400 percent of the poverty level and higher. Source: Cohen.<sup>12</sup>**

likely ( $P < .05$ ) to have dental coverage than were children with more income. For those with coverage, low-income participants were least likely ( $P > .05$ ) to report a dental visit among all income groups. Children at all income levels without coverage were less likely ( $P > .05$ ) to report a dental visit than were children with coverage.

Table 1 shows private dental coverage, percentage of the population that had had a dental visit and mean total expenditures for children newborn to 18 years of age by dental coverage status and by selected population characteristics. Overall, a little more than 52 percent ( $n = 39,380,446$ ) of children newborn to 18 years of age had dental coverage at any time during 1996. Slightly more than 37 percent ( $n = 28,134,270$ ) had coverage continuously for the entire year. Of those with coverage at any time, nearly 57 percent ( $n = 42,001,792$ ) reported having had at least one dental visit during 1996. On the other hand, substantially fewer

( $P < .05$ ) children (approximately 28 percent,  $n = 21,046,091$ ) without coverage reported a visit. Of those with coverage at any time during the year, the mean total expenditure was substantially larger ( $P < .05$ , ~ \$439 vs. ~ \$235) than that for those without coverage.

Differences in rates of coverage were apparent for the categories of race, income, age and education, but sex did not appear to affect the likelihood ( $P > .05$ ) of coverage. Nonwhite, younger and poorer children all were less likely ( $P < .05$ ) to have dental coverage than were white or older children or children with more income. In addition, children with parents or guardians who were college graduates were more likely ( $P < .05$ ) to have coverage than were children with parents or guardians who were not college graduates.

For each demographic and socioeconomic category, children with coverage were much more likely ( $P < .05$ ) to have had a dental visit than were comparable children without coverage. The effect of coverage on mean dental expenditures was mixed. For instance, coverage at any time during the year did not have an effect ( $P > .05$ ) on mean dental expenditures for children with parents or guardians who were college graduates, children from low-income families or children who resided in nonmetro areas. For other demographic and socioeconomic categories, children with coverage had higher ( $P < .05$ ) mean total expenditures than similar children without coverage.

Table 2 (page 1142) shows dental coverage status and the percentage of the population that had had a dental visit for children newborn to 18 years of age residing in a home with a poverty status up to 133 percent FPL, by dental coverage status and by selected population characteristics. Overall, about 56 percent ( $n = 11,711,000$ ) of these children had a self-report or proxy report of Medicaid coverage at any time during 1996. Slightly more than 39 percent ( $n = 8,271,000$ ) had such coverage continuously for the entire year. About 17 percent ( $n = 3,521,641$ ) reported having private coverage at any time during 1996. Slightly more than 30 percent ( $n = 6,399,688$ ) of these children were not covered by either Medicaid or a private plan any time during 1996. Of those with Medicaid coverage at any time, just more than 28 percent ( $n = 5,784,000$ ) reported having had at least one visit during 1996. Of those with private coverage at any time, almost 43 percent

TABLE 1

PRIVATE DENTAL COVERAGE, VISITS AND MEAN TOTAL EXPENDITURES FOR CHILDREN, 1996.*									
POPULATION CHARACTERISTIC	TOTAL POPULATION (MILLIONS)	PRIVATE COVERAGE†		PERCENTAGE OF POPULATION WITH A VISIT			MEAN TOTAL EXPENDITURE‡		
		% of Population With Dental Coverage All Year (SE§)	% of Population With Dental Coverage at Any Time (SE)	Population With Private Dental Coverage All Year (SE)	Population With Private Dental Coverage at Any Time (SE)	Population Without Private Coverage (SE)	Population With Private Dental Coverage All Year (SE)	Population With Private Dental Coverage at Any Time (SE)	Population Without Private Coverage (SE)
<b>Total**</b>	75.326	37.35 (1.19)	52.28 (1.21)	56.75 (1.53)	55.76 (1.33)	27.94 (1.18)	482.60 (41.33)	438.56 (30.44)	235.19 (25.41)
<b>Age in Years</b>									
Younger than 12	47.681	35.40 (1.33)	50.73 (1.34)	50.43 (1.87)	48.91 (1.58)	26.29 (1.32)	263.46 (26.26)	249.10 (20.03)	165.63 (23.05)
12 to 18	27.645	40.72 (1.56)	54.99 (1.59)	66.24 (1.98)	66.65 (1.87)	31.05 (2.03)	732.77 (84.09)	659.79 (61.13)	346.39 (52.20)
<b>Sex</b>									
Male	39.037	36.54 (1.34)	51.27 (1.40)	56.12 (2.15)	55.06 (1.86)	27.27 (1.40)	454.42 (61.16)	408.86 (45.03)	201.64 (24.13)
Female	36.289	38.23 (1.40)	53.40 (1.40)	57.40 (1.85)	56.48 (1.58)	28.69 (1.52)	510.92 (53.95)	468.45 (41.22)	271.07 (44.67)
<b>Race</b>									
White	49.084	43.50 (1.67)	60.59 (1.47)	60.24 (1.86)	59.69 (1.62)	33.42 (1.87)	491.53 (48.94)	446.93 (35.35)	274.33 (37.20)
Nonwhite††	26.242	25.84 (1.54)	36.78 (1.71)	45.79 (2.60)	43.63 (2.10)	21.54 (1.40)	445.58 (88.19)	403.26 (68.41)	164.37 (24.29)
<b>Family Income**</b>									
Low income	32.387	14.62 (1.17)	26.29 (1.37)	37.65 (3.56)	38.06 (2.52)	24.16 (1.35)	194.20 (28.28)	235.41 (28.16)	200.20 (28.82)
Middle income	25.405	52.34 (1.73)	71.06 (1.52)	57.65 (2.13)	58.01 (1.91)	31.17 (2.46)	483.48 (59.50)	434.01 (45.14)	264.49 (50.48)
High income	17.534	57.62 (1.91)	73.12 (1.95)	64.52 (2.24)	64.33 (1.99)	42.03 (3.88)	560.38 (73.32)	524.16 (59.10)	303.15 (70.15)
<b>Education§§</b>									
Some or no school	51.443	31.29 (1.18)	44.90 (1.41)	51.34 (1.93)	50.94 (1.76)	26.16 (1.30)	512.06 (67.99)	462.56 (49.22)	190.85 (23.63)
College graduate	21.406	55.47 (2.33)	74.44 (1.69)	64.24 (2.34)	63.25 (2.11)	38.83 (3.50)	451.99 (43.97)	412.21 (35.02)	376.84 (74.56)
<b>Rural/Urban***</b>									
Large metro	31.910	41.84 (2.08)	56.58 (1.67)	56.31 (2.05)	55.90 (1.87)	29.55 (1.93)	536.86 (76.05)	489.19 (57.06)	246.31 (32.21)
Small metro	25.747	40.78 (2.00)	54.92 (2.04)	56.57 (3.04)	58.71 (2.65)	27.63 (2.37)	470.47 (50.48)	431.78 (37.38)	206.09 (47.08)
Nonmetro	14.650	29.21 (1.93)	42.01 (2.44)	58.63 (3.35)	57.98 (2.79)	32.24 (2.37)	348.69 (57.42)	311.07 (41.16)	252.63 (58.57)

\* Source: Cohen.<sup>12</sup>  
† Population without private coverage may include people with public coverage.  
‡ For children with a visit.  
§ SE: Standard error.  
\*\* Includes people in families with negative income.  
†† Includes blacks and nonwhite Hispanics, as well as all other ethnic/racial groups.  
‡‡ Low income: incomes below 200 percent of the federal poverty level, or FPL. Middle income: 200 percent to 399 percent of the FPL. High income: 400 percent of the FPL and above.  
§§ For people aged 18 years and younger, refers to parent's education.  
\*\*\* Large metro: central counties of areas of 1 million or more. Small metro: other metropolitan counties. Nonmetro: nonmetropolitan counties either adjacent to urban areas or not adjacent to urban areas.

TABLE 2

### MEDICAID, PRIVATE DENTAL COVERAGE,\* VISITS AND MEAN TOTAL EXPENDITURES FOR LOW-INCOME CHILDREN, 1996.†

POPULATION CHARACTERISTIC	TOTAL POPULATION (MILLIONS)	% OF POPULATION WITH COVERAGE				% OF POPULATION WITH A VISIT			
		Population With Coverage All Year	Population With Medicaid Coverage at Any Time	Population With Private Coverage at Any Time	Population With No Coverage	Population With Medicaid Coverage All Year	Population With Medicaid Coverage at Any Time	Population With Private Coverage at Any Time	Population With No Coverage
<b>Total‡</b>	21.002	39.38 (2.08)	55.76 (1.93)	16.77 (1.44)	30.47 (1.76)	32.99 (2.31)	28.47 (2.00)	42.81 (4.42)	18.98 (2.41)
<b>Age in Years</b>									
Younger than 12	14.185	45.75 (2.40)	64.65 (2.12)	16.34 (1.49)	23.09 (1.87)	31.88 (2.41)	26.97 (2.17)	38.21 (5.36)	14.97 (3.01)
12 to 18	6.816	26.14 (2.24)	37.24 (2.40)	17.65 (2.10)	45.84 (2.64)	36.92 (4.75)	33.62 (3.84)	49.74 (5.98)	23.20 (3.07)
<b>Sex</b>									
Male	10.535	40.41 (2.54)	55.41 (2.24)	16.95 (1.67)	31.40 (2.06)	32.24 (3.18)	28.23 (2.74)	45.04 (5.51)	17.91 (2.48)
Female	10.466	38.35 (2.26)	56.10 (2.48)	16.58 (1.86)	29.54 (2.21)	33.78 (3.03)	28.69 (2.47)	40.75 (5.79)	20.13 (3.36)
<b>Race</b>									
White	8.633	33.31 (3.22)	45.95 (2.94)	24.29 (2.71)	32.66 (2.51)	35.72 (4.30)	31.40 (3.60)	48.75 (6.08)	26.46 (4.10)
Nonwhite§	12.369	43.62 (2.39)	62.60 (2.51)	11.52 (1.47)	28.94 (2.34)	31.55 (2.61)	26.99 (2.18)	32.34 (6.30)	13.10 (2.40)
<b>Rural/Urban**</b>									
Large metro	8.208	44.38 (2.71)	58.70 (2.66)	16.28 (2.11)	28.06 (2.45)	36.15 (3.71)	33.14 (3.09)	39.30 (7.31)	19.08 (3.65)
Small metro	6.651	42.19 (4.50)	58.17 (3.81)	19.19 (2.90)	25.41 (2.94)	27.27 (4.09)	26.43 (3.84)	40.31 (7.10)	19.39 (4.36)
Nonmetro	5.020	35.87 (3.82)	44.88 (4.03)	16.15 (2.91)	42.53 (3.91)	36.10 (4.43)	32.14 (3.83)	58.75 (8.52)	20.97 (5.07)

\* Private dental coverage and Medicaid dental coverage are not mutually exclusive since data are aggregated over time and children may have gained or lost coverage at any time during the year.

† Source: Cohen.<sup>12</sup>

‡ Includes people in families with negative income.

§ Includes blacks and nonwhite Hispanics, as well as all other ethnic/racial groups.

\*\* Large metro: central counties of areas of 1 million or more. Small metro: other metropolitan counties. Nonmetro: nonmetropolitan counties either adjacent to urban areas or not adjacent to urban areas.

( $n = 2,892,363$ ) reported having had at least one visit during 1996. Of those without coverage at any time, only 19 percent ( $n = 1,214,565$ ) reported having had at least one visit during 1996.

Low-income, white and older participants were less likely ( $P < .05$ ) to have Medicaid dental coverage than were high-income, nonwhite and

younger participants. On the other hand, low-income white children were more likely ( $P < .05$ ) to have private coverage than were low-income nonwhite children. While we noted differences in rates of coverage for the categories of race and age, sex did not appear to affect the likelihood ( $P > .05$ ) of coverage. Overall and for each demo-

graphic and socioeconomic category, children with coverage were much more likely ( $P < .05$ ) to have had a dental visit than were comparable children without coverage. On the other hand, while Medicaid coverage did increase the likelihood ( $P < .05$ ) of having had a dental visit among low-income children, having Medicaid coverage appears to have had a somewhat lesser ( $P < .05$ ) effect on use than did having private-sector coverage. Children without coverage (Medicaid or private) were less ( $P < .05$ ) likely to have had a dental visit than were children with coverage for each of the different subcategories of income and sex.

## DISCUSSION

While these data and analyses are useful, they do have limitations. For instance, self-reporting of data is less accurate than collection by observation or by dental record abstraction. In addition, the specification of the dental coverage variable is a function of a report of coverage, a report of payment for dental care by a third party, or both. Finally, individual coverage plans may vary considerably in their degree of benefit generosity.

On the other hand, these data are useful and comprehensive, and they provide estimates that are nationally representative. As such, MEPS data are unique and provide important information on the basis of which dental visits and expenditures can be compared and analyzed in the context of dental care coverage. Additionally, while the specification for dental coverage has limitations, its formulation (based on previously used and accepted methods) provides an acceptable nationally representative measure of dental care coverage and makes possible potentially valuable analyses and comparisons.<sup>12</sup>

Although slightly more than 50 percent of the population had dental coverage during 1996, the distribution of coverage was not uniform. Children from households with middle and high levels of income were substantially more likely to have dental coverage than were similar children from households with lower levels of income. While about 71 to 73 percent of children from middle- and high-income households were covered at any time during the year, less than 30 percent of low-income children were similarly covered.

Medicaid dental coverage for children residing

in homes with an income status up to 133 percent FPL (about \$22,000 gross annual family income for a family of four) is somewhat lower than expected. Since children from the poorest households, especially the youngest of children, are almost universally eligible for Medicaid, the relatively low level of dental coverage for low-income children may reflect a failure to enroll children rather than a lack of Medicaid availability itself. Small state-to-state differences in eligibility for Medicaid coverage also may contribute marginally to this lower-than-expected rate of coverage. Additionally, a relative lack of access to Medicaid dental providers also may have contributed to this lower-than-expected rate, since coverage is defined in part by actual payments. Data used in these analyses were collected before the initiation of SCHIP. SCHIP, launched in 1997, should increase the availability of coverage

for near-poor children. Results of our study will provide baseline estimates from which future comparisons with MEPS and other data can be made subsequent to the availability of SCHIP.

The impact of insurance coverage on dental service utilization is substantial. For each demographic and socioeconomic category, children with coverage were much more likely to have had at least one dental visit than were comparable children without coverage. Overall,

covered children obtained dental services at rates two times those of noncovered children. Even among high-income families, coverage was related to a higher likelihood of having a dental visit. Either coverage is a very strong predictor of utilization, or anticipated use is a strong predictor of coverage. Although adverse selection may explain some of the differences that exist, it is likely that coverage is a dominant predictor of dental care use.

While the effect of private coverage on use of services is clear, that of Medicaid dental coverage is not as great. This seemingly lesser effect of Medicaid dental coverage on use of dental services may reflect a problem of access caused by other real or perceived barriers to care.

Coverage appeared to have a variable effect on the mean total expenditure for dental care. Overall, covered children who had used dental services were responsible, on average, for more

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pediatric dental expenditures during 1996 than were noncovered children. Among children who obtained dental care, children covered all year had slightly more than twice

the mean total dental expenditures than did noncovered children (\$483 vs. \$235). In all demographic and socioeconomic groupings, noncovered children had lower expenditures than did covered children. The exception was low-income children, among whom there was no statistical difference in expenditures between children with coverage and children without. This differential may be explained by the low fees typically paid by Medicaid or by a lack of access for Medicaid-enrolled children. Age and income also were strong predictors of higher mean total dental expenditures. Regardless of coverage status, spending varies with children's age. Both covered and noncovered children between 12 and 18 years of age account for considerably higher spending than do younger children, likely because of orthodontic care and because common dental diseases are progressive and cumulative with age.

Dental benefits coverage, benefiting 52 percent of U.S. children in 1996, was strongly correlated with the likelihood of a child's having had a dental visit and with obtaining more care (as evidenced by higher expenditures). Both dental coverage and the likelihood of having had a dental visit were higher for white children than for nonwhite children and increased with family income and parental education.

## CONCLUSION

MEPS data provide important information and establish that dental care coverage is an important explanatory factor in patterns of children's access to dental care. Data suggest that covered

children are more likely to visit a dentist than are noncovered children. However, since Medicaid dental coverage, unlike its private-sector counterpart, seems to have a lesser effect on the likelihood of a child's visiting a dentist, the effectiveness of Medicaid dental coverage should be further investigated. Perhaps improving oral health for poorer children may depend in part on improving Medicaid dental coverage programs.

These data provide practitioners, oral health advocates and policymakers with new and important status information about private insurance coverage and Medicaid, information that can make the issue of dental care access better understood. Knowing that the effectiveness of Medicaid dental coverage appears to be less than that of private coverage will help practitioners, advocates and policymakers to design dental care coverage programs that improve access and better meet the needs of all children. ■

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