

An analysis of dental visits in U.S. children, by category of service and sociodemographic factors, 1996

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Abstract

Purpose: Data from the 1996 Medical Expenditure Panel Survey were analyzed to determine the distribution of diagnostic and preventive, surgical, and other dental visit types received by U.S. children, aged 0-18 years.

Methods: Weighted point estimates and standard errors were generated using SUDAAN⁸ and stratified by age, sex, race/ethnicity, and poverty status.

Results: Overall, 39.3% of children had a diagnostic or preventive visit, 4.1% had a surgical visit, and 16.2% had a visit for a restorative/other service. Diagnostic and preventive services were most common, across age categories. For all types of service, utilization was higher among white and non-poor children, but there were no differences by gender. Age-specific associations were mixed, with diagnostic and preventive service and surgical service utilization having a different distribution than other service type. Poverty status was generally not associated with service-specific utilization among African-American children.

Conclusions: There are profound disparities in the level of dental services obtained by children, especially among minority and poor youth. Findings suggest that Medicaid fails to assure comprehensive dental services for eligible children. Improvements in oral health care for minority and poor children are necessary if national health objectives for 2010 are to be met successfully. (*Pediatr Dent* 23:383-389, 2001)

During the last two decades, the U.S. Department of Health and Human Services has set national objectives¹ for oral health care utilization and has tracked progress toward these goals via questionnaire items from the National Health Interview Survey.² These national objectives referred to the proportion of the population that visited an oral health professional in the last year, but did not differentiate type of dental visit, thus combining preventive, surgical, and emergency treatment services together. Although the objectives only applied to adults aged 35 years or older, the goals represented the standard by which utilization rates for other age groups were to be tracked.

Dental caries prevalence in the U.S. has been steadily decreasing over the last few decades.³ The mix of oral health care services provided to patients also has changed during this time

period. The American Dental Association⁴ used data from the 1990 Survey of Dental Services Rendered and showed that, between 1959 and 1990, the percentage of dental patients that received a diagnostic or preventive procedure increased markedly (oral examination from 20% to 43%, radiographs from 18% to 25%, prophylaxes from 19% to 39%, and fluoride treatments from 1% to 10%), while the percentage that received a simple restorative or surgical service declined markedly (two-surface amalgam restorations from 21% to 7%, extractions from 13% to 5%). Although these survey data were illuminating, they failed to assess whether changes were occurring consistently across population sub-groups.

In the United States, specific sub-groups are more likely to experience oral disease and less likely to utilize oral health care services than are other sub-groups. For example, low-income and minority children have a higher prevalence of dental caries and have a higher percentage of untreated lesions⁵ than have their peers, and are less likely to have had a dental visit in the last year.⁶ In addition, among those with at least one dental visit each year, low-income and minority children report fewer dental visits, on average, than do their non-poor and non-minority counterparts.⁶

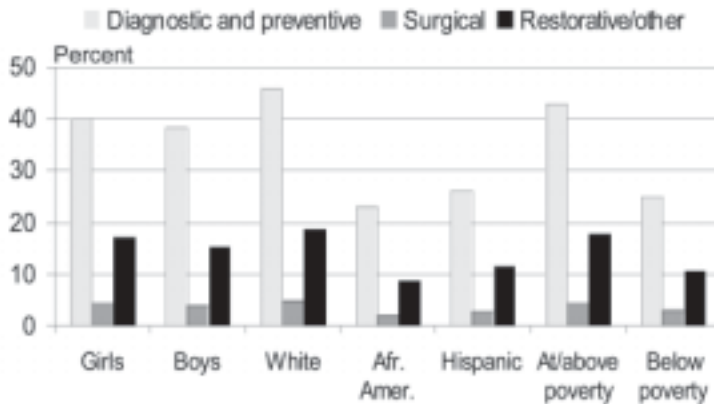
This investigation uses data from a nationally representative survey to describe service-specific utilization rates for youngsters aged 0 through 18 years. This study builds upon the results of the ADA's 1990 Survey of Dental Services Rendered by assessing whether service-specific utilization rates differ by age, sex, race/ethnicity, and poverty status. The findings also serve as a baseline against which future assessments of service-specific and population-specific utilization rates in the U.S. might be compared.

Methods

Data for this investigation derived from the 1996 Medical Expenditure Panel Survey (MEPS), the last of three health expenditure surveys in a series, administered by the Agency for Healthcare Research and Quality (AHRQ) (formerly the Agency for Health Care Policy and Research). MEPS collected data regarding costs, payment source, utilization, demographics, socioeconomic status, and health insurance status.

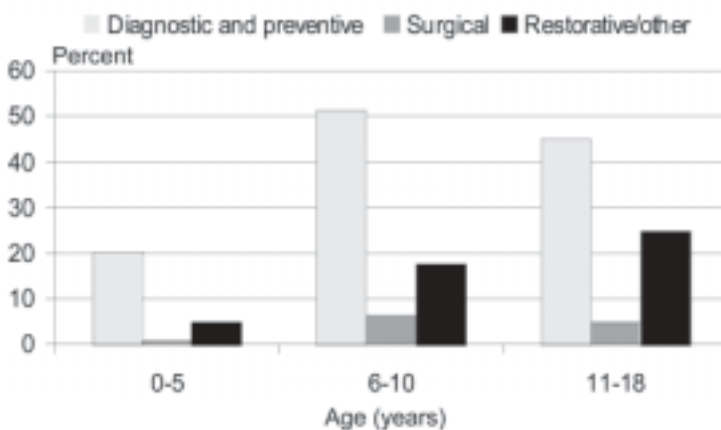
Received November 11, 2000 Revision Accepted August 14, 2001

Figure 1: Service-specific utilization for children aged 0-18 years, by selected characteristics, 1996



SOURCE: Center for Cost and Financing Studies, AHRQ: 1996 MEPS

Figure 2: Service-specific utilization, by age, 1996



SOURCE: Center for Cost and Financing Studies, AHRQ: 1996 MEPS

Dental treatment data, relevant to the preceding time period, were collected during each round. Treatment data only referred to one reported procedure for each service type, per visit. Multiple procedures of different types during a single visit were reported separately and included in the totals. For example, both a surgical procedure and a preventive procedure, during a single visit, were reported for each category. Estimates represented all children in the sample, and were not limited to children with a procedure.

The study population for MEPS consisted of 10,500 households selected as a sub-sample of the 1995 National Health Interview Survey. MEPS participants were selected according to a complex, multi-stage probability sampling design. MEPS oversampled population sub-groups of particular interest to public policy, including African-Americans and Hispanics. MEPS interviewers administered a face-to-face questionnaire to members of each sub-sample household three times over approximately an 18-month period.

Each component of MEPS was designed to provide statistically unbiased estimates that were representative of the civilian, non-institutionalized population of the U.S. The 1996 MEPS included 23,230 participants, representing approximately 268 million U.S. persons. Of these, slightly more than one-fourth ($n=6,595$) was children aged 0-18 years, representing 75 million children. The overall response rate for MEPS was 70.2 percent.⁷

Study variables

Utilization rates were divided into three service-specific types, including: diagnostic and preventive, surgical, and restorative/other. Diagnostic and preventive services included oral examinations, prophylaxes, fluoride treatments, and dental sealants. Surgical services included extractions and all other types of non-routine operative services. Restorative/other services primarily included restorative treatment, but also incorporated other services not included under the surgical or diagnostic and preventive categories.

Descriptive variables included age, sex, race/ethnicity, and poverty status. Children were grouped into three age categories reflecting different periods of growth and development. The age categories included the following: birth through five years (representing the pre-eruption and primary dentition stage), six through 11 years (representing the primary dentition and the mixed dentition stage) and 12 through 18 years (representing the permanent dentition stage). Race/ethnicity categories included non-Hispanic white (herein referred to as white), non-Hispanic black (herein referred to as African-American), and Hispanic. The poverty status variable was classified as either at or above poverty or below poverty, according to the established federal poverty level (FPL).

Analysis

The MEPS data were analyzed using full sample weights so that the results would be representative of the civilian, non-institutionalized household population of the United States. Estimates and standard errors were computed using SUDAAN,⁸ a statistical software program that took into account the complex sampling design of MEPS. The statistical significance of all bivariate associations were assessed with an alpha value of 5 percent.

Results

Regardless of sociodemographic stratum, the percentage of children aged 0-18 years that received a diagnostic and preventive service was significantly higher than the percentage that received a restorative/other service ($Z=19.8$; $p\text{-value}<0.01$), and the percentage that received a restorative/other service was significantly higher than the percentage that received a surgical service ($Z=18.0$; $p\text{-value}<0.01$) (Figure 1).

Table 1. Weighted Percentage Distribution of Children Aged 0-18 Years with a Dental Visit by Service Type and Selected Population Characteristics, U.S., 1996

	Percent with Service Visit ^b (standard error)		
	All ^c	At/above poverty	Below poverty
Diagnostic/preventive services (total)^a	39.3 (1.0)	43.0 (1.2)	25.0 (1.5)
Race			
White ^d	46.0 (1.3)	48.1 (1.4)	30.3 (2.8)
African-American	23.2 (1.9)	24.8 (2.5)	20.7 (3.0)
Hispanic	26.2 (1.5)	29.6 (2.0)	21.1 (2.1)
Gender			
Male	38.4 (1.3)	41.9 (1.5)	24.3 (2.1)
Female	40.2 (1.3)	44.2 (1.4)	25.6 (2.0)
Restorative/other services (total)	16.2 (0.6)	17.7 (0.7)	10.7 (1.2)
Race			
White ^d	18.8 (0.9)	19.2 (0.9)	15.2 (2.1)
African-American	8.7 (1.2)	9.8 (1.6)	6.9 (2.0)
Hispanic	11.5 (1.0)	13.5 (1.3)	8.4 (1.4)
Gender			
Male	15.3 (0.8)	16.5 (0.9)	10.4 (1.6)
Female	17.2 (0.9)	18.9 (1.0)	11.0 (1.3)
Surgical services (total)	4.1 (0.3)	4.4 (0.4)	2.9 (0.4)
Race			
White ^d	4.9 (0.5)	5.1 (0.5)	3.1 (0.8)
African-American	2.0 (0.5)	1.8 (0.5)	2.3 (0.8)
Hispanic	2.8 (0.4)	2.7 (0.5)	0.3 (0.6)
Gender			
Male	3.9 (0.4)	4.3 (0.5)	2.4 (0.6)
Female	4.3 (0.5)	4.6 (0.5)	3.4 (0.6)

Source: Center for Cost and Financing Studies, AHRQ: 1996 Medical Expenditure Panel Survey. NOTE: *Diagnostic/preventive services* included oral examinations, prophylaxes, fluoride treatments, and dental sealants. *Surgical services* included extractions and all other types of non-routine operative services. *Restorative/other services* primarily included restorative services, but also included other services not included under the *Diagnostic/preventive services* or *Surgical services* categories.

^a Includes cleanings, fluoride treatments, and sealants

^b Dental visit data truncated at twelve visits per person, representing 99% of all utilization data

^c Includes persons in families with negative income

^d Includes all other ethnic/racial groups, not shown separately

White children were significantly more likely to have received diagnostic and preventive ($Z=9.9$; $p\text{-value}<0.01$), surgical ($Z=4.1$; $p\text{-value}<0.01$), and restorative/other services ($Z=6.7$; $p\text{-value}<0.01$) than were African-American children. White children were also more likely to have received diagnostic and preventive ($Z=10.0$; $p\text{-value}<0.01$), surgical ($Z=3.3$; $p\text{-value}=0.01$), and restorative/other services ($Z=5.4$; $p\text{-value}<0.01$) than were Hispanic children. Children at or above poverty were more likely to have received diagnostic and preventive ($Z=9.4$; $p\text{-value}<0.01$), surgical ($Z=2.7$; $p\text{-value}<0.01$), and restorative/other services ($Z=5.0$; $p\text{-value}<0.01$) than were those below poverty. Gender was not significantly associated with service type.

Regardless of age, the percentage of children that received a diagnostic and preventive service was significantly higher than the percentage that received a restorative/other service, and the percentage that received a restorative/other service was higher than the percentage that received a surgical service (Figure 2). Children aged 6-10 years were significantly more likely to have received a diagnostic and preventive service than were children aged 11-18 years ($Z=2.8$; $p\text{-value}<0.01$), and children aged 11-18 years were more likely to have received a diagnostic and preventive service than were children aged 0-5 years ($Z=12.7$; $p\text{-value}<0.01$).

The percentage of children aged 11-18 years that received a surgical service was significantly lower than was the percentage of children aged 6-10 years ($Z=1.8$; $p\text{-value}=0.04$), but was higher than was the percentage of children aged 0-5 years ($Z=6.0$; $p\text{-value}<0.01$). In addition, the percentage of children aged 11-18 years that received a restorative/other service was significantly higher than was the percentage of children aged 6-10 years ($Z=4.2$; $p\text{-value}<0.01$) or aged 0-5 years ($Z=10.1$; $p\text{-value}<0.01$).

Overall, 39.3% of children aged 0-18 years had a diagnostic and preventive service visit, 4.1% had a visit for a surgical procedure, and 16.2% had a visit for a restorative/other service (Table 1). Across strata, a significantly higher proportion of children at or above poverty received services than did those below poverty. There were a few exceptions to this general statement, however, as there was

no statistically significant association between diagnostic and preventive services utilization and poverty status ($Z=1.1$; $p\text{-value}=0.15$), restorative/other services utilization and poverty status ($Z=1.1$; $p\text{-value}=0.13$), or surgical services utilization and poverty status ($Z=-0.5$; $p\text{-value}=0.30$) for African-American children, and there was no statistically significant association between surgical services utilization and poverty status for girls ($Z=1.5$; $p\text{-value}=0.06$).

Overall, 20.4% of children aged 0-5 years had a diagnostic and preventive service visit, 0.9% had a visit for a surgical procedure, and 5.0% had a restorative/other service (Table 2). In this age category, there were fewer statistically significant associations between service-specific utilization and poverty status.

Table 2. Weighted Percentage Distribution of Children Aged 0-5 Years with a Dental Visit by Service Type and Selected Population Characteristics, U.S., 1996

	Percent with Service Visit ^b (standard error)		
	All ^c	At/Above Poverty	Below Poverty
Diagnostic/preventive services (total)^a	20.4 (1.1)	22.6 (1.3)	13.3 (1.6)
Race			
White ^d	23.6 (1.5)	25.1 (1.6)	13.5 (2.4)
African-American	14.1 (3.0)	12.6 (3.7)	15.9 (3.7)
Hispanic	14.0 (1.7)	15.4 (2.2)	12.0 (2.5)
Gender			
Male	19.4 (1.5)	21.4 (1.9)	13.5 (2.3)
Female	21.5 (1.5)	23.9 (1.8)	13.1 (1.9)
Restorative/other services (total)	5.0 (0.6)	5.0 (0.7)	5.0 (1.1)
Race			
White ^d	5.0 (0.8)	5.0 (0.9)	3.3 (1.4)
African-American	5.2 (1.8)	3.1 (1.3)	7.6 (2.9)
Hispanic	4.5 (1.0)	4.3 (1.2)	4.8 (1.8)
Gender			
Male	4.6 (0.8)	4.7 (0.9)	4.3 (1.4)
Female	5.0 (0.9)	4.8 (1.1)	5.8 (1.6)
Surgical services (total)	0.9 (0.3)	1.1 (0.3)	0.3 (0.2)
Race			
White ^d	1.1 (0.4)	1.2 (0.4)	Negligible
African-American	0.2 (0.2)	Negligible	0.4 (0.4)
Hispanic	0.5 (0.2)	0.5 (0.3)	0.4 (0.4)
Gender			
Male	1.0 (0.4)	1.3 (0.5)	Negligible
Female	1.0 (0.4)	1.0 (0.4)	0.5 (0.4)

Source: Center for Cost and Financing Studies, AHRQ: 1996 Medical Expenditure Panel Survey. NOTE: *Diagnostic/preventive services* included oral examinations, prophylaxes, fluoride treatments, and dental sealants. *Surgical services* included extractions and all other types of non-routine operative services. *Restorative/other services* primarily included restorative services, but also included other services not included under the *Diagnostic/preventive services* or *Surgical services* categories.

^a Includes cleanings, fluoride treatments, and sealants

^b Dental visit data truncated at twelve visits per person, representing 99% of all utilization data

^c Includes persons in families with negative income

^d Includes all other ethnic/racial groups, not shown separately

For example, in the diagnostic and preventive services category, the associations between utilization and poverty status were not significant for African-American ($Z=-0.6$; p -value=0.26) and Hispanic children ($Z=1.0$; p -value=0.15). In the restorative/other services category, none of the associations between utilization and poverty status were significant. In the surgical services category, the association between utilization and poverty status for Hispanics ($Z=0.2$; p -value=0.42) and girls ($Z=0.9$; p -value=0.19) were not significant, and associations for whites, African-Americans, and boys were not tested because of small cell sizes.

Discussion

The results of this investigation should be considered in light of two study limitations. The first limitation related to the fact that the oral health treatment information collected in MEPS was self-reported. These self-reported utilization data were never compared against encounter data or treatment records. As such, it is possible that the MEPS data misrepresented true utilization in the population. Although these errors were possible, a recent comparison of MEPS utilization data to utilization data from the National Health Interview Survey and National Health and Nutrition Examination Survey shows that

Overall, 51.4% of children aged 6-10 years had a diagnostic and preventive service visit, 6.4% had a visit for a surgical procedure, and 17.7% had a restorative/other service visit (Table 3). In this age category, there were also few statistically significant associations between service-specific utilization and poverty status. In the diagnostic and preventive services category, the associations between utilization and poverty status were not statistically significant among African-Americans ($Z=1.5$; p -value=0.07). In the restorative/other services category, only the association between utilization and poverty status for all children was statistically significant. In the surgical services category, none of the associations between utilization and poverty status were significant.

Overall, 45.1% of children aged 11-18 years had a diagnostic and preventive service visit, 4.9% had a visit for a surgical procedure, and 24.8% had a restorative/other service visit (Table 4). Again, there were a number of associations that were not statistically significant in this age range. In the diagnostic and preventive services category, the association between utilization and poverty status was not statistically significant for whites ($Z=1.5$; p -value=0.06). In the surgical services category, only the association between utilization and poverty status for all children and whites was significant.

MEPS data were least susceptible to common threats to validity and reliability.⁹

The second limitation related to the broad categories of treatment service that MEPS defined. These broad categories could have diluted the associations that would have existed had more distinct categorizations of treatment service been used such as dental sealants, emergency visit, or prophylaxis. It would have been instructive to determine these potential differences, but the MEPS data did not allow for such assessments.

Despite the above-mentioned study limitations, this investigation had a number of important strengths. For example, this study provided nationally representative estimates of service-specific utilization for several population sub-groups. In addition, the MEPS data provided a unique opportunity to describe service-specific utilization by age, gender, race/ethnicity, and poverty status, thus going beyond the ADA's 1990 Survey of Dental Services Rendered⁴. Finally, although the investigation did not use multivariate analysis to describe the associations between sociodemographic variables and service-specific utilization, the various stratum-specific analyses presented in this manuscript provided control against potential confounding effects.

There were a number of important findings that resulted from this investigation. For example, the MEPS data showed that the percentage of children that received a diagnostic and preventive service was higher than any other type of service, regardless of age, gender, race/ethnicity, or poverty status. In addition, a higher proportion of white children received any type of service than did African-American or Hispanic children, and a higher proportion of non-poor children received any type of service than did poor children, overall. In spite of these age/race/ethnic-, and poverty status-specific associations, there were no statistically significant differences in receipt of any type of service for girls and boys.

Age-specific associations were also enlightening. For example, the distribution of children receiving diagnostic and preventive services and surgical services presented as an inverted-U, with the highest proportion of children occurring at

Table 3: Weighted Percentage Distribution of Children Aged 6-10Years with a Dental Visit by Service Type and Selected Population Characteristics, U.S., 1996

	Percent with Service Visit ^b (standard error)		
	All ^c	At/above poverty	Below poverty
Diagnostic or preventive services (total)^a	51.4 (1.6)	55.6 (1.7)	35.5 (2.6)
Race			
White ^d	58.2 (2.1)	60.9 (2.1)	38.7 (4.9)
African-American	37.0 (3.3)	40.6 (4.1)	31.4 (4.8)
Hispanic	37.8 (2.4)	42.0 (3.6)	31.1 (3.2)
Gender			
Male	52.2 (2.1)	56.3 (2.2)	34.6 (4.2)
Female	50.6 (1.9)	54.8 (2.1)	36.2 (3.4)
Restorative/other services (total)	17.7 (1.1)	18.6 (1.2)	14.5 (2.0)
Race			
White ^d	19.5 (1.4)	19.6 (1.5)	18.7 (3.2)
African-American	10.9 (2.1)	12.3 (2.5)	8.6 (3.4)
Hispanic	15.6 (1.9)	17.5 (2.5)	12.6 (2.4)
Gender			
Male	17.3 (1.4)	18.1 (1.6)	14.3 (3.3)
Female	18.1 (1.4)	19.1 (1.6)	14.7 (2.3)
Surgical services (total)	6.4 (0.6)	6.7 (0.7)	5.3 (1.0)
Race			
White ^d	7.0 (0.8)	7.1 (0.9)	5.6 (1.8)
African-American	3.3 (1.0)	3.2 (1.2)	3.4 (1.6)
Hispanic	5.8 (1.1)	5.6 (1.4)	6.0 (1.5)
Gender			
Male	6.3 (0.8)	6.6 (1.0)	4.9 (1.4)
Female	6.5 (0.8)	6.7 (1.0)	5.6 (1.4)

Source: Center for Cost and Financing Studies, AHRQ: 1996 Medical Expenditure Panel Survey. NOTE: *Diagnostic/preventive services* included oral examinations, prophylaxes, fluoride treatments, and dental sealants. *Surgical services* included extractions and all other types of non-routine operative services. *Restorative/other services* primarily included restorative services, but also included other services not included under the *Diagnostic/preventive services* or *Surgical services* categories.

^a Includes cleanings, fluoride treatments and sealants

^b Dental visit data truncated at twelve visits per person, representing 99% of all utilization data

^c Includes persons in families with negative income

^d Includes all other ethnic/racial groups, not shown separately

the 6-10 year age category. Public perceptions of need, practitioner behaviors, and dentition status combined to explain the inverted-U distribution for these two types of service. For instance, the low rate of diagnostic and preventive service visits for preschool-aged children suggested that professional guidelines calling for early dental care¹⁰ were not widely adhered to or accepted by the public or practitioners. Some states require that a child entering school for the first time receive an oral examination, and this requirement would also affect the level of diagnostic and preventive services provided to children aged 6-10 years.

Table 4: Weighted Percentage Distribution of Children Aged 11-18 Years with a Dental Visit by Service Type and Selected Population Characteristics, U.S., 1996

	Percent with Service Visit ^b (standard error)		
	All ^c	At/above poverty	Below poverty
Diagnostic or preventive services (total)^a	45.1 (1.6)	49.0 (1.7)	27.5 (2.6)
Race			
White ^d	54.0 (1.9)	55.9 (2.0)	38.8 (4.6)
African-American	17.6 (2.7)	19.2 (3.1)	14.4 (4.9)
Hispanic	29.4 (2.7)	32.9 (3.4)	23.6 (4.0)
Gender			
Male	42.7 (1.9)	45.9 (2.1)	27.4 (3.3)
Female	47.7 (2.3)	52.5 (2.5)	27.6 (3.5)
Restorative/other services (total)	24.8 (1.3)	27.3 (1.4)	13.1 (1.9)
Race			
White ^d	29.6 (1.7)	30.3 (1.7)	23.5 (4.1)
African-American	9.6 (1.8)	12.3 (2.6)	4.2 (1.8)
Hispanic	15.5(1.8)	19.2 (2.4)	9.3 (2.2)
Gender			
Male	22.6 (1.6)	24.4 (1.8)	13.8 (2.7)
Female	27.3 (1.8)	30.7 (2.0)	12.5 (2.4)
Surgical services (total)	4.9 (0.6)	5.2 (0.7)	3.5 (0.7)
Race			
White ^d	6.2 (0.8)	6.5 (0.9)	3.6 (1.3)
African-American	2.4 (0.9)	1.9 (0.8)	3.3 (1.8)
Hispanic	2.8 (0.7)	2.1 (0.9)	4.0 (1.2)
Gender			
Male	4.4 (0.8)	4.7 (0.9)	2.9 (1.0)
Female	5.4 (0.8)	5.8 (0.9)	4.0 (1.0)

Source: Center for Cost and Financing Studies, AHRQ: 1996 Medical Expenditure Panel Survey. NOTE: *Diagnostic/preventive services* included oral examinations, prophylaxes, fluoride treatments, and dental sealants. *Surgical services* included extractions and all other types of non-routine operative services. *Restorative/other services* primarily included restorative services, but also included other services not included under the *Diagnostic/preventive services* or *Surgical services* categories.

^a Includes cleanings, fluoride treatments, and sealants

^b Dental visit data truncated at twelve visits per person, representing 99% of all utilization data

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^d Includes all other ethnic/racial groups, not shown separately

Given the cumulative and progressive nature of dental caries,³ it is conceivable that the primary teeth of older children would require greater surgical intervention than they would for younger children. It is possible that dentists, when comparing their decision-making behaviors regarding permanent teeth, are more likely to extract diseased primary teeth than to restore them. This practice behavior would explain the peak at the 6-10 year age category, however there is little evidence in the literature to support or refute it.

By contrast to the inverted-U distribution for diagnostic and preventive services and surgical services, the proportion of children receiving a restorative/other service increased steadily across age categories. Again, the cumulative and progressive

nature of dental caries³ would substantiate a greater need for restorative intervention among older children. If dentists tend to restore permanent teeth more frequently than to extract them, as was argued above, this would also explain the increase in the restorative/other service distribution across age categories.

In general, a lower proportion of children below poverty received any type of service than did children at or above poverty across age categories. The associations were mixed, however, as a number of stratum-specific poverty associations were not statistically significant. Of particular interest was the finding that, regardless of the type of service (except for the restorative/other service type among children aged 11-18 years), there was no statistically significant association between poverty status and service-specific utilization among African-American children. These findings were strongly suggestive that African-American race/ethnicity has an effect on utilization practices that was independent of socioeconomic status. Watson and colleagues¹¹ have used MEPS to investigate the role of poverty status and service-specific utilization and have found similar results.

The finding that poor children, the overwhelming majority of whom were eligible for oral health benefits under Medicaid, had fewer dental visits for all types of service suggests that Medicaid might not be meeting its mandate for access to routine and comprehensive oral health care services.

Title XIX of the Social Security Act specifically requires that states assure that:

“...Services are available under the plan [Medicaid] at least to the extent that such care and services are available to the general population in the geographic area (Section 1902(a)(30)(A)).”

While this investigation reported on the use of services rather than availability, the findings implied that children enrolled in Medicaid did not have the same access to oral health care services as did children at or above poverty. This disparity was particularly troubling, given the relatively high level of unmet oral health treatment needs that exist for all children in the United States today.¹²

The national health objectives set forth in Healthy People 2010¹³ challenged the nation to reduce disparities in oral health status and utilization of oral health services by the year 2010. If these goals are to be successfully met, dental services for poor and minority children must be increased markedly. Although the national objectives do not distinguish between overall and service-specific utilization, a description of the distribution of dental visits by type of service, as was done in this investigation, gives a clearer picture of what needs to be accomplished to meet the objectives. Disparities will continue to exist as long as the minorities and poor children receive services at a lesser extent than do their non-minority and non-poor counterparts.

The 1996 MEPS provided a rich source of data by which to describe service-specific utilization rates. If the national health objectives are not met for minority and poor population sub-groups by 2010, future health expenditure instruments will be able to assess whether the failure was due to a maintenance of service-specific disparities over time.

Conclusions

1. A greater proportion of children and adolescents in the United States receive a diagnostic or preventive service than any other type of service, regardless of age, sex, race/ethnicity, or poverty status;
2. A smaller proportion of minority and poor youngsters receive a diagnostic or preventive, surgical, or other type dental visit than do their non-minority and non-poor equivalents; and
3. Significant disparities in oral health care utilization exist for all types of treatment services, despite the availability of Medicaid dental insurance coverage for poor children.

Acknowledgements

The views expressed in this paper are those of the authors, and no official endorsement by AHRQ or the U.S. Department of Health and Human Services is intended or should be inferred. We wish to thank Joel Cohen and John Moeller for their comments on a previous draft. Brian Rowland and Devi Katikineni of Social and Scientific Systems, Bethesda, Maryland, provided skillful computer programming support. This investigation was supported by the AHRQ, Rockville, Maryland, and Grant #76515 from the W. K. Kellogg Foundation.

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