



## Access and Utilization of Dental Services by Alabama Medicaid-enrolled Children: A Parent Perspective

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### Abstract

**Purpose:** The purposes of this survey were to assess barriers to utilization of dental services among Medicaid-enrolled Alabama children and identify families who used or did not use Medicaid-covered dental services.

**Methods:** A random sample of 4,500 parents of Medicaid-eligible children ages 3 to 19 years was surveyed. Participants came from Medicaid enrollment data stratified by area of residence into 3 groups: (1) large urban; (2) town; and (3) rural. Univariate and multivariate analyses were conducted.

**Results:** The overall response rate was 40% (N=1,766). Most respondents (71%) reported that their child had a dental visit in the past year. Compared to parents who had a dental visit, those who reported no visits were more likely to: (1) be non-Hispanic African American; (2) be less educated; (3) live in rural settings of Alabama; (4) have more children younger than 6 or older than 12; (5) have more children with disabling conditions; and (6) report poor perceived oral health. Respondents with no dental visits were grouped into 3 categories—those who: (1) believed they did not need dental care (46%); (2) thought dental care was hard to find (34%); and (3) tried but could not get dental care (20%). The first group had significantly less respondents with a high school or greater education, more reporting perceived good to excellent oral health, and more living in rural areas, compared to the other 2 groups.

**Conclusions:** Families who did not use Medicaid-covered dental services include: (1) a group with high perceived need and barriers to care; and (2) a group with little perceived need. Interventions must target both groups. (*Pediatr Dent* 2005;27:414-421)

**KEYWORDS:** ACCESS TO DENTAL CARE, ALABAMA MEDICAID CHILDREN, ACCESS, UTILIZATION, DENTAL, MEDICAID

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Poor oral health and limited access to dental care have long been identified as problems for children from low-income families.<sup>1</sup> Children from poor and near-poor families with incomes below 199% of the federal poverty level (FPL) are 3 times more likely to have an unmet dental care need, compared to children from families with incomes above or at 200% of the FPL.<sup>2</sup>

Clearly, cost is a barrier. A large proportion of children, however, have insurance through Medicaid or the State Children's Health Insurance Program (SCHIP) that covers dental care. National survey data consistently show that low-income children are largely not receiving regular den-

tal care. Depending on the question and survey method used, annual dental care use estimates vary.<sup>3</sup> The 1996 federal Medical Expenditure Panel Survey (MEPS) estimates that about 30% of low-income children under 19 years of age had any dental care in the preceding year.<sup>4</sup> This percentage remained stable during the following 5-year period (1996 to 2000).<sup>5</sup>

Medicaid-enrolled children, as a subset of all low-income children aforementioned, also show low utilization of dental care. Several studies that evaluated utilization of dental services through Medicaid enrollment data and billing claims analyses have shown dental utilization rates ranging from 20% to 35%, depending on the state and the age of children included in each study.<sup>6-9</sup> Indeed, an analysis of a 1995 Health Care Financing Administration's (HCFA) State Medicaid Resource File from 27 state Medicaid programs showed that only 1 in 3 children enrolled in Medicaid fee-for-service plans had visited the dentist in the preceding year.<sup>10</sup> This percent of dental services' use among Medicaid

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children represents only half of that reported for children from high-income (over 400% of the FPL) families.<sup>4</sup>

Low utilization of dental care is even greater among the very young. The 1996 MEPS reported that less than 15% of all children younger than 6 from low-income families received any dental visits in the preceding year.<sup>4</sup> Other studies reported that less than 1% of Medicaid-eligible children younger than 1 received any preventive dental services in 1993 and 1994. In 2- and 3-year-olds, the proportions increased to about 10% and 31%, respectively. By age 3 or 4, however, the majority of children at high risk for disease will have developed caries.<sup>11</sup> This lack of timely access to dental care has a significant impact in terms of lost opportunity for preventing disease.

Reasons for nonutilization of dental care by low-income families and Medicaid-enrolled children are numerous. One key factor reported by families receiving Medicaid is their inability to find dentists willing to treat their children.<sup>12</sup> Provider nonparticipation in the Medicaid program is listed among the main reasons for no care.<sup>12</sup> Low reimbursement, followed by broken appointments, billing difficulties, and slow reimbursement were cited as the main reasons for dentists not to take Medicaid children.<sup>12,13</sup> Other providers are reluctant to treat young children or children with special health care needs whose needs may be complex, require more knowledge and training, and are time consuming to address.<sup>14,15</sup> This problem may also reflect the low number of pediatric dentists who are more likely to treat the very young and special-need children. The ratio of children to pediatric dentists is currently at 20,000:1.<sup>11</sup>

Low-income and Medicaid families face challenges accessing resources, despite the availability of participating dental providers and/or clinics and coverage for dental care. Other barriers to dental care reported by these families include<sup>12,15-17</sup>:

1. getting time off from work to visit the dentist;
2. arranging for transportation, especially in rural areas;
3. long waiting times for appointments;
4. finding child care;
5. a perception of being treated with discrimination and disrespect because of their race or public assistance status.

These issues may also contribute to the high rate of broken appointments among this population.

Lack of demand for dental care is another significant factor that affects utilization of dental care among children from low-income families. A lack of understanding and awareness of the importance of oral health and its relationship to general good health is associated with low use of dental services for many, regardless of income.<sup>12</sup> Lack of awareness by these families of their qualification for Medicaid or SCHIP programs is another reason for the low demand.<sup>17</sup> Perceived need for dental care is also strongly associated with:

1. socioeconomic factors;
2. presence of signs and symptoms of oral disease such as toothache or abscess;
3. parental satisfaction with recent dental treatment.

For example, African Americans (59%) were more likely to report "no problem" as a reason for no dental visits, compared to Caucasians (44%).<sup>12,15-19</sup>

MEPS data show significant disparities in the number of dental visits as a function of: (1) age; (2) family income; (3) race; and (4) parental education. In general, fewer younger, non-Caucasian, low-income children and children of less-educated parents visit a dentist.<sup>20,21</sup> Moreover, significantly fewer younger, non-Caucasian children and children below the FPL received diagnostic, preventive, and restorative services.<sup>21</sup> These disparities are even bigger among rural populations. Significantly fewer rural poor and younger children reported having a dental visit in the past year. In addition, the number of dental visits was significantly fewer among rural non-Caucasian, poor, and younger children, compared to their urban counterparts. These urban rural disparities are explained by the poor distribution of dentists and the lower rate of insurance coverage in rural settings.<sup>22</sup>

In Alabama, as recent as fiscal year 2000, only 26% of Medicaid-covered children received any dental services. The increase in Medicaid enrollment, coupled with a decline in dental provider participation, created a dental access crisis.<sup>23</sup> In an effort to improve access and utilization of dental services among Medicaid-eligible Alabama children, the Smile Alabama! Initiative was launched in October 2000. This initiative resulted in reimbursement rates increased to 100% of the rates of Blue Cross and Blue Shield of Alabama and a faster and more efficient claims processing system. In addition to raising payment rates, administrative processes were streamlined and outreach activities to dentists and beneficiaries were conducted to improve access to dental care among Medicaid patients. Targeted case management services were instituted in January 2001, and dentists and primary medical providers were encouraged to make referrals for patients in need of additional education in areas such as keeping appointments, compliance with treatment, and appropriate behavior in the office.<sup>23</sup>

The present study is part of a research project conducted by the Alabama Medicaid Agency and the University of Alabama at Birmingham to evaluate the effectiveness of targeted case management services in Alabama at improving dental care access for Medicaid-covered children. This project involved the design and administration of 3 surveys to: (1) families receiving Medicaid; (2) Medicaid dental providers; and (3) targeted case managers.

The purpose of this paper was to determine utilization of dental services and to highlight important barriers to dental care, as perceived by the parents of Medicaid-enrolled Alabama children.

## Methods

This study population came from the Medicaid enrollment data stratified by area of residence into 3 groups: (1) large urban; (2) town; and (3) rural. A random sample of 4,500 parents of Medicaid-eligible children ages 3 to 19 years was selected. A self-administered questionnaire was designed

**Table 1. Results From Multivariate Logistic Regression of Having Any Dental Visits for Children in the Past 12 Months**

Variable name	Reference group	Multivariate regression	
		Estimate (odds ratio)	Confidence levels (95%)
<b>Perceived oral health</b>	Poor oral health		
Good		2.9*	2.2-4.0
Excellent		5.5*	4.1-7.3
<b>Child's age</b>	Age (6-12 ys)		
<6 ys		0.4*	0.2-0.6
>12 ys		0.5*	0.3-0.7
<b>Parent's education</b>	<High school diploma attainment		
High school diploma attainment		1.3†	1.1-1.7
>High school diploma attainment		1.6*	1.2-2.2
<b>Race</b>	Non-Hispanic African American		
Non-Hispanic Caucasian		1.5*	1.2-2.0
Non-Hispanic other		1.6	0.7-3.5
<b>Hispanic</b>	Non-Hispanic	1.4	0.8-2.5
<b>Not disabled</b>	Disabled	1.3	0.9-1.8
<b>Residence</b>	Rural		
Town		1.4*	1.1-1.9
Urban		1.2	0.9-1.6

\*The odds ratio from the multivariable logistic regression was statistically significant, compared to the reference group;  $P \leq .01$ .

†The odds ratio from the multivariable logistic regression was statistically significant, compared to the reference group;  $P \leq .05$ .

and pretested among parents of Medicaid-eligible children. The Institutional Review Board for Human Use at the University of Alabama at Birmingham approved the study in November 2002.

All participants were mailed:

1. a postcard in April 2003;
2. the questionnaire, accompanied by a cover letter and a postage-paid envelope, 2 weeks later.

Two weeks after the mailing of the questionnaire, a postcard was mailed to all nonresponders. Two weeks later, the questionnaire was mailed for the second time to all nonresponders, along with a cover letter and a postage-paid envelope. Four weeks following the mailing of the survey, a postcard was mailed to the remaining nonresponders. This process follows the Dillman protocol for survey administration.<sup>24</sup>

The survey was composed of 57 questions and divided into 4 sections.

1. Section 1 asked whether the child had any dental care in the past year and, if "yes," questions about their experiences and opinions of the care received were asked. If the answer to that question was "no," a number of questions were asked to inquire about the reasons for not getting dental care in the past year.
2. Section 2 inquired about missed dental appointments and reasons for missing appointments.
3. Section 3 asked whether the parent received any help from targeted case managers and, if "yes," a series of questions were asked to evaluate the effectiveness of

their services. The last section of the survey asked for demographic data.

As the surveys were returned, responses were entered in an Access database (Microsoft Corporation, Redmond, Wash). Descriptive statistics in the form of percentages and frequency tables were computed, and univariate and multivariate logistic models were analyzed using Statistical Analysis Software version 9.0 (SAS Institute Inc, Cary, NC). Odds ratios and corresponding 95% confidence intervals from these models were used to estimate the association between having any dental care in the past year and the hypothesized explanatory variables.

The dependent variable in the first logistic regression model (Table 1) was the child's visit to the dentist in the previous year (yes/no). Independent variables included: (1) perceived child's oral health; (2) child's age; (3) parent's education; (4) child's race; (5) child's ethnicity; (6) presence of a disability in the child; and (7) location of residence. All independent variables were all entered in the model at one time to adjust for the effect of one variable on the others and to generate adjusted estimates of the association between each independent variable and the outcome of having had a visit to the dentist in the previous year.

A multinomial logistic regression was used to compare differences between the 3 groups of respondents who reported not taking their child to the dentist in the previous year. The dependent variable in this model is the respondents' reported reason for not taking their child to the dentist. The 3 groups of reasons are: (1) "no need for dental care"; (2) "hard to get

Table 2. Sociodemographic Characteristics of Responding Families

Characteristic	Families reporting a visit in the past 12 months N=1,274 (71%)		Families reporting no visits in the past 12 months N=538 (29%)	
	No. of respondents	(%)	No. of respondents	(%)
<b>Perceived dental health*</b>				
Excellent	670	(55)	136	(28)
Good	383	(31)	155	(33)
Poor	173	(14)	195	(40)=101%
<b>Age group*</b>				
<6 ys	322	(25)	169	(31)
6-12 ys	200	(16)	45	(8)
>12 ys	752	(59)	324	(60)=99%
<b>Parent's education†</b>				
<high school	414	(34)	199	(42)
=high school	479	(39)	175	(37)
>high school	323	(27)	106	(22)=101%
<b>Gender</b>				
Male	619	(50)	252	(50)
Female	619	(50)	251	(50)
<b>Race‡</b>				
Non-Hispanic Caucasian	517	(42)	164	(33)
Non-Hispanic African American	679	(55)	324	(65)
Non-Hispanic other	43	(4)=101%	14	(3)=101%
<b>Hispanic</b>				
No	1,171	(97)	459	(95)
Yes	40	(3)	24	(5)
<b>Disability‡</b>				
No	1,048	(86)	400	(82)
Yes	173	(14)	89	(18)
<b>Location‡</b>				
Urban	353	(29)	151	(30)
Town	462	(38)	154	(31)
Rural	411	(34) =101%	197	(39)

The total number of responses in each row may not equal the total number of respondents in each column as a result of missing data on questionnaires.

\* $P \leq .001$ .

† $P \leq .01$ .

‡ $P \leq .05$  (2-tailed chi-square tests).

dental care”; and (3) “tried to get dental care, but couldn’t get services.” Dummy variables were created and entered into a logistic regression model of categories of parents who reported no use of dental care in the previous year. These dummy variables were: (1) perception of excellent oral health; (2) perception of good oral health; (3) child’s age less than 6 years; (4) child’s age greater than 12 years; (5) parents with high school education; (6) parents with greater than high school education; (7) urban residence; and (8) town residence. The reference groups for each variable, respectively were: (1) perception of poor oral health; (2)

child’s age between 6 and 12 years; (3) parents with less than a high school education; and (4) rural residence.

## Results

A total of 1,766 usable surveys were returned, bringing the total response rate to 40%. A comparison of demographic data available from the Medicaid enrollment database from respondents and nonrespondents indicated that nonrespondents tended to live more in urban settings ( $P < .0001$ ). The sociodemographic characteristics of Medicaid families who reported having a dental visit and those who did not re-

port having a visit in the past 12 months are presented in Table 2. Chi-square tests were used to check for significant differences between the 2 groups.

Overall, almost one third (30%) of all respondents reported problems getting dental care, whether they reported a dental visit or not in the past 12 months. Approximately 71% (N=1,239) of all Medicaid parents surveyed reported that their child had a dental visit in the past 12 months.

Among the parents who reported a visit in the past 12 months, 15% (N=185) reported that they had to deal with many problems during finding and receiving this care. Almost half (48%) of these parents reported difficulties finding a dentist who would accept Medicaid. Table 3 lists the different problems parents reported having while securing the dental care needed for their children. "Other problems" included:

1. difficulty arranging transportation;
2. the dentist refused to see the child if he/she missed the appointment or charged a fee for missed appointments;
3. the patient was unaware that Medicaid covers dental care;
4. waiting a long time to get an appointment or long waiting times at the office.

Compared with parents who had a dental visit for their child in the past 12 months, parents who reported no dental visits were more likely to: (1) be non-Hispanic African American; (2) be less educated; (3) live in rural settings of Alabama; (4) have more children younger than 6 or older than 12; (5) have more children with disabling conditions; and (6) report poor perceived oral health. Disability in this survey was defined as any kind of physical, emotional, developmental, or behavioral problem that required extra help or treatment and that lasted or was expected to last for more than 12 months. Results of the unadjusted model not shown.

The results of the adjusted logistic regression model of having any visits in the past 12 months show that parents with good and excellent perceptions of a child's oral health were 3 and 5 times more likely to have a dental visit than those with poor perception of oral health, respectively. Moreover, children with an excellent perception of oral health were 2 times more likely to report a dental visit than those with a good perception of oral health. Parental education is another factor. The higher-educated families were more likely to have a dental visit for their children than those with a lower education. Children under 6 and those over 12 years of age were 60% and 50% less likely to visit a dentist than those between 6 and 12 years of age, respectively. Race and location of residence were other factors significantly associated with reported use of dental care in the past 12 months. Table 1 presents the adjusted odds ratios and their 95% confidence intervals for each variable in this model.

**Table 3. Problems Faced by Parents Who Reported a Dental Visit in the Past 12 Months (N=185)**

Problem	No.	(%)*
Dentist does not accept Medicaid	89	(48%)
Dentist does not treat child well	44	(24%)
Dentist does not treat me or my child with respect	28	(15%)
Dentist does not treat young children	20	(11%)
Dentist billed me for services	9	(5%)
Other problems	57	(31%)

\*The percentages do not add up to 100% because some respondents selected more than 1 reason.

**Table 4. Reasons Reported for Not Having Any Dental Visits in the Past 12 Months and Their Corresponding Percentages (N=496)**

Reason	% respondents
<b>Parents who did not specify reasons for not obtaining dental care for their children</b>	<b>9% (N=44)</b>
<b>1 No care needed</b>	<b>31%</b>
Child too young	8%
Child too old	1%
Child has no problems	91%
<b>2 Hard to get dental care</b>	<b>20%</b>
Transportation problems	50%
Work-related issues	18%
Need for child care	1%
Financial issues	31%
<b>3 Tried and could not get care</b>	<b>18%</b>
Transportation problems	49%
Dentist does not take Medicaid	39%
Dentist does not treat young children	4%
Dentist not liked	8%
<b>4 Combination of groups 2 and 3</b>	<b>11%</b>
<b>5 Combination of groups 1 and 2</b>	<b>3%</b>
<b>6 Combination of groups 1 and 3</b>	<b>2%</b>
<b>7 Combination of groups 1, 2, and 3</b>	<b>6%</b>

For the next part of the analysis, respondents (N=496; 29%) who reported not having a dentist visit in the past 12 months were divided into 7 mutually exclusive groups based on their primary reason for not having a visit. Most respondents chose only 1 group of reasons from the 3 main groups (group 1, 2, or 3) to explain why they did not take their child to the dentist in the previous year.

Group 1, which perceived no care needed, included parents who reported that their child: (1) is too young or too old to see the dentist; or (2) did not have any dental problems as reasons for not seeking dental care in the past 12 months.

**Table 5. Adjusted Regression Coefficients and Standard Errors of a Multinomial Regression Model of the Categories of Parents Who Reported No Use of Care in the Past 12 Months (N=343)\***

Independent variable	Group A: Parents who tried to get care but couldn't get it		Group B: Parents who perceived dental care hard to find	
<b>Perceived oral health</b>				
Excellent	-1.36	(0.27)*	-1.60	(0.28)
Good	-0.45	(0.24)	-0.14	(0.23)
Poor (reference)				
<b>Parent's education</b>				
>high school education	-0.46	(0.24)‡	-0.00	(0.23)
=high school education	-0.31	(0.23)	-0.56	(0.24)†
<high school (reference)				
<b>Residence</b>				
Urban	-0.15	(0.24)	0.09	(0.23)
Town	0.55	(0.25)‡	0.32	(0.25)
Rural (reference)				
<b>Child's age</b>				
<6 ys	0.18	(0.29)	-0.19	(0.29)
>12 ys	-0.04	(0.38)	0.13	(0.35)
6-12 ys (reference)				
<b>Intercept</b>	-0.27	(0.23)	-0.33	(0.24)
N	89	(26%)	101	(29%)

The reference category is group C, which includes parents who perceived dental care as not needed.

\* $P \leq .001$ .

† $P \leq .05$ .

‡ $P = .01$ .

Group 2 included parents who reported that dental care is hard to find because of: (1) problems arranging transportation or child care; (2) inability to get off work; or (3) just not having the money to do so.

Group 3 included respondents who actually tried to get dental care but had problems finding a nearby dentist or dental office that: (1) accepted Medicaid; (2) treated young children; or (3) they personally liked. Some respondents checked more than 1 reason for not taking their child to the dentist. Therefore, groups 4 to 7 are combinations of the 3 main groups previously described. Table 4 shows the percent of respondents who reported different reasons for not having any dental visits for their child within each group in the past 12 months.

#### Characteristics of families reporting no dental visits in the past 12 months

The 3 main respondent groups (groups 1, 2, and 3) who did not have a dental visit for their child in the past 12 months were compared to evaluate for any differences in demographic characteristics or perceived child's oral health. In the adjusted logistic regression model, parents' perception of child's oral health ( $P < .001$ ), parental education ( $P = .01$ ), and location of residence ( $P < .05$ ) were the 3 significant variables associated with the groups.

Respondents in the groups who reported either that dental care is hard to obtain or that they tried to obtain care and could not get it were significantly more likely to report a poor perception of oral health, compared with respondents who reported dental care was not needed ( $P < .0001$ ). In addition, respondents who reported trying unsuccessfully to obtain dental care were significantly more likely to have higher education compared to those who perceived dental care as unnecessary ( $P < .05$ ). Finally, respondents who tried to obtain dental care were significantly more likely to be living in towns, compared with respondents who perceived dental care as not needed ( $P < .02$ ). Therefore, fewer of those who reported trying unsuccessfully to find dental care are residents of rural areas. Table 5 shows the adjusted regression coefficients and their standard errors of the logistic regression of the groups of parents who reported no dental visits in the past 12 months.

## Discussion

One limitation of this study was its overall response rate of 40%. This is considered reasonable and acceptable, however, considering the sociodemographic characteristics of the Medicaid population. An analysis of nonresponders, based on available demographic information (age and location of residence), showed differences in location of residence only between responders and nonresponders. Nonresponders were more likely to be living in large urban areas than responders. Since this study's findings show more problems in finding dental care among responders who live in large urban settings, the authors believe that the number of people reporting difficulties in finding dental care is somewhat underestimated in this study. Another limitation is related to the fact that the oral health information collected is self-reported. Using only objective data sources such as patient records, however, will not allow us to evaluate dental access and barriers for the children who never made it to the dentist in the first place.

The proportion (71%) of children in this study who visited the dentist in the previous year is similar to the proportion (73%) reported in the NHIS survey, but is somewhat greater than that reported in the MEPS survey (43%). Despite the high proportion of children who had

a dental visit in the previous year, the authors do not know if the treatment is adequate and satisfactory to meet the needs of this population. In addition, surveys usually overestimate utilization of dental care compared to claims data analyses. This may be attributed to: (1) misunderstanding of survey questions; (2) providing socially desirable answers; (3) using insurance or payment other than Medicaid; or (4) a combination of all.

Although this study's results represent Medicaid families' perspectives and their use of dental services in Alabama, they do generally agree with most national surveys regarding the characteristics of those who receive dental care compared to those who do not.<sup>20</sup> Children under 6 years of age were less likely to obtain dental care compared to older children. This may be largely related to lack of knowledge and awareness of families about dental health and the perceived oral health of their children. In addition, the small number of pediatric dentists in general and the unwillingness of some general dentists to treat young children and/or children receiving Medicaid are other barriers to care for the very young. Although utilization of dental care rises with increased age, with most care obtained by school-aged children, it tends to drop again during adolescence. This is more likely related to the lack of knowledge about importance of preventive dental care, the lack of usual source of dental care, and the low supply of Medicaid dental providers and safety net services.<sup>25</sup>

An analysis of rural/urban utilization of dental services in a 1999 NHIS survey found that urban residents tend to overuse dental services compared to rural residents.<sup>23</sup> In this study, however, the authors divided location of residence, based on population density, into 3 groups: (1) large urban; (2) town; and (3) rural. This showed that utilization of dental care was highest among residents of towns compared to large urban and rural areas. The larger population in large urban areas and the shortage of Medicaid dental providers may explain the difficulty in obtaining dental care for this population.

This study's findings went a step further and added more important insights about the different subtypes of Medicaid population who reported no use of dental services in the previous year. Two distinct populations stand out very clearly:

1. those who perceive no need for dental care;
2. those who need dental care, but have problems getting the care needed.

Three distinct factors marked the difference between families who perceive no need for care from those who perceive having or experienced problems getting dental care:

1. perception of oral health;
2. parental level of education attainment;
3. location of residence.

These findings emphasize the importance of integrating oral health education into school health education curriculum as early as possible, possibly in middle or high

school or even earlier. This education should explain what optimal oral health is and must underscore the importance of early/preventive care. School health education should include:

1. the impact of oral health on general health and vice versa;
2. transmissibility of dental caries from caregivers to infants;
3. the deleterious habits to oral health;
4. regular oral health instructions in brushing and flossing.

This early oral health education will better prepare future parents regarding oral health and help close the gaps in dental health education and utilization of dental care between the parents who completed high school education and those who did not.

Improving dental health knowledge and awareness among caregivers is one step from many that need to be addressed to remove barriers to access and utilization of dental care. Clearly, an increase in the number of Medicaid providers, particularly in underserved areas, is the key to increased utilization. This process by itself will alleviate some of the other problems, such as transportation, long wait times in the office, and scheduling appointments that many Medicaid families face to get some of their children's dental needs met. The Smile Alabama! Initiative was successful in not only meeting but exceeding the established goals of increasing the number of Medicaid participating dentists by 15% and the number of children receiving dental care by 5% over the 3-year grant period ending January 31, 2004.<sup>23</sup>

During the 3-year grant period, the annual visit rate increased to 35%, an increase of 9% from the fiscal year 1999 baseline of 26%. During this same timeframe, there were an additional 190 participating providers, a 58% increase.<sup>26</sup>

This was achieved through: (1) simplified claims processing; (2) increased provider reimbursements; (3) provider outreach and education; and (4) patient education, especially concerning keeping appointments. The continuity of this process is crucial if increased access and use of dental services among Medicaid children is to be sustained.

## Conclusions

Based on this study's results, the following conclusions can be made:

1. Families who do not use Medicaid-covered dental services include:
  - a. a group with high perceived need and perceived barriers to care;
  - b. a group with little perceived need.
2. Interventions must target both groups to improve utilization of dental services.

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