SCIENTIFIC ARTICLES

Follow-Up Preventive Dental Visits for Medicaid-Enrolled Children in the Medical Office

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Abstract

Objective: *To describe the frequency and determinants of follow-up preventive oral health visits at medical offices among children screened for dental disease, receiving fluoride varnish and counseling.* ***Methods:*** *Parents of Medicaid children enrolled in a clinical trial completed a baseline questionnaire before their child's medical visit. The providers completed patient dental encounter forms at each visit, documenting dental services, caries risk, and dental disease. Questionnaires, encounter forms, and Medicaid claims were linked to create a database with information on visits, child and caregiver characteristics, and oral health practices. Descriptive and multivariate analyses assessed associations of variables with likelihood of follow-up visits.* ***Results:*** *A total of 744 children with mean age of 15 months at enrollment had 1,415 oral health visits. Children averaged 0.9 follow-up oral health visits and 1.3 follow-up well-child visits. Fewer children had follow-up oral health visits (55 percent) than well-child visits (70 percent), but children with a baseline preventive dental visit at a younger age had more visits with shorter intervals. Caregivers reporting greater numbers of children and putting the child to bed with the bottle had more subsequent visits. Older age of child, male child, and caregiver education ≤12 years were associated with fewer follow-up visits.* ***Conclusions:*** *Children with preventive dental services in medical offices have similar numbers of oral health and well-child visits, with both below recommended numbers. Strategies to increase these services may need to be tied to those aimed at increasing compliance with well-child visits, taking advantage of nonwell-child visits, and implementing Medicaid policies that allow for optimal timing of visits.*

Key Words: infant oral health, well-child visit, Medicaid, continuity of preventive care

Introduction

Over the past 30 years, the practice of medicine has shifted from primary acute care to chronic disease management (1). One of these conditions is dental caries, the most common chronic disease of childhood and the greatest unmet health care need of children (2,3). With a limited dental workforce to address these challenges, physicians and other nonhealth care providers are increasingly called upon to provide preventive dental services to children, particularly those at high risk (4,5). Most recently, guidelines recommend that preventive dental services begin by the first year of age and occur frequently to be effective (6,7).

Barriers to obtaining primary medical care for young children are fewer in number than for dental care (5). Depending on their socioeconomic status, children younger than 5 years of age are five to six times more likely to access medical care than dental care (8,9). Further, less than 10 percent of children younger than 6 years of age have ever had a preventive dental visit (10). For those who are unable to establish a dental home, the delivery of preventive oral health services inalternate settings at appropriate frequencies can be an important source of preventive care.

Within the medical setting, well-child visits provide an opportunity for delivering oral health care services to young children. This concept has been embraced by a number of Medicaid programs across the United States. For example, the Washington State Medicaid Program began reimbursing physicians for fluoride varnish application during medical visits in 1998 (11). About the same time, a pilot program in North Carolina began training physicians to incorporate preventive dental services, including fluoride varnish, into well-child visits (12). In 2000, the North Carolina Medicaid program subsequently started an initiative known as Into the Mouths of Babes (IMB) that added a number of preventive dental services to its medical benefits. Following the completion of an approved continuing medical education course, medical providers in North Carolina can be reimbursed for up to six preventive dental visits beginning when the first tooth emerges (~6 months) until the child turns 36 months of age. The recommended intervals for preventive oral health services parallel the 3- to 6-month well-child periodicity schedule (i.e., 6, 9, 12, 15, 18, 24 months) with the minimum

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interval of 90 days, thus allowing for fluoride varnish applications during other types of medical visits. These services include screening, risk assessment and referral as needed, fluoride varnish application, and caregiver counseling that can occur jointly or independently of the medical visit. All services must be provided in each visit to receive any reimbursement (12).

The effectiveness of delivering pediatric preventive services, regardless of their setting and type, is dependent in part on the continuity of a child's care and adherence to the well-child periodicity schedule. Health supervision schedules in the medical home call for nine well-child visits in the first 3 years of life. Among low-income families, a less than optimal adherence to pediatric preventive guidelines is documented (13,14). Nevertheless, when controlling for race, poverty, or health status, maintenance of a series of well-child visits during the first 2 years of life among Medicaid beneficiaries has a positive effect on health outcomes, suggesting the importance of follow-up visits (14).

Specific to oral health, little is known about the implementation of preventive oral health services in the well-child visit schedule. As Medicaid programs continue to expand preventive dental services in the medical setting, a better understanding of these services is needed to illuminate factors that affect the likelihood that a child will return for subsequent visits and help design interventions to enhance these occurrences. Thus, the purpose of this study was to describe among a cohort of Medicaid-enrolled children younger than 3 years of age seeking care at IMB practices participating in a randomized controlled trial, the number of children with follow-up IMB preventive dental visits, the number of follow-up visits, and the length of time between visits. We also investigated the characteristics of the child and parent, and parents' oral health care practices for the child as predictors of the likelihood of preventive dental follow-up visits in medical offices. Finally, for this cohort, we determined the number of children with medical visits and their number of visits for comparison with dental visits.

Methods

Study Design and Population. Parent–child dyads attending medical practices participating in a randomized control trial (RTC) were enrolled in a longitudinal study. The trial tested the effectiveness of different types of continuing medical education on physician adoption of preventive dental services as measured by submission of medical claims for reimbursement of services. Parents and children included in the study reported here were enrolled from a subset of 33 practices of the larger study of 118 practices where the effect of physician-delivered services on parent behaviors was being tested (15). All practices were asked to participate, but these volunteered to distribute parent questionnaires and complete dental encounter forms as part of the medical record. To participate in the study, the child had to be at least 12 months of age but no older than 24 months at the time of the initial visit to allow for 1 year of eligibility for IMB services before the administration of a 1-year follow-up questionnaire. The criterion for minimum age at enrollment was used to help ensure continuous Medicaid enrollment for the study sample by excluding children no longer eligible for Medicaid benefits past 12 months, because of the shift to a lower income threshold at that age. Information on the study sample was supplemented with patient records required for the demonstration and linked with Medicaid enrollment and claims files to determine follow-up preventive dental visits in the medical office.

Data Collection. Enrollment of study practices and parent–child dyads occurred over several months (March 2001 to December 2002). The first 30 consecutive caregivers and their eligible child making a medical visit following practice adoption of IMB were recruited by the front office staff at each participating practice. A self-administered parent questionnaire was completed in the office prior to any medical encounter with the child. The 36 items included in the questionnaire were framed by content of the continuing educational intervention directed toward the health care professionals, the preventive dental care they were expected to provide as a result of the continuing education, and the effects these preventive dental services were expected to have on parents and their children. The questionnaire development and testing is described in a previous publication (16).

At each IMB visit, providers completed a patient dental encounter form required as part of the statewide demonstration project. The dental encounter forms provided a record of the visit and included documentation of dental screening results, risk factors for dental caries, and provision of preventive dental services (fluoride varnish, counseling, and referral). This form was previously pilot tested in a community demonstration project with nondental health care providers and modified for this study. Copies of all patient dental encounter forms that became part of the child's patient record were returned to the project office where the child's Medicaid identification number that had been entered by the medical practice was verified against enrollment files. An electronic file was created by direct data entry.

Analytical File. Medicaid claims files detailing all health care services for children who could have received preventive dental care as part of the statewide IMB demonstration during January 2000 to July 2003 were obtained from the state Medicaid office. Counts of IMB visits and well-child visits were constructed for each child from the Medicaid claims using the codes from the Current Dental Terminology (CDT) and Current Procedural Terminology Reimbursement (CPT™) for preventive dental and medical office visits, respectively.

In a previous study, we linked Medicaid claims for IMB and patient dental encounter forms from medical practices participating in the statewide IMB demonstration. In that study, we found dental encounter forms with no corresponding claims (17). This finding led us to conclude that claims alone might not capture all IMB visits and that combining the claims with patient records for IMB services (i.e., patient dental encounter forms) would provide a more complete account of children's receipt of IMB services (18). We therefore chose to use both preventive dental visits in the claims and the patient dental encounter forms to create the outcome variable for the current study. Baseline parent questionnaires ($n = 810$) from 33 practices were linked with patient dental encounter forms and with Medicaid claims using the child's name, date of birth, and Medicaid identification number. Of the 810 questionnaires, 744 (92 percent) were successfully matched with the claims and patient dental encounter forms database. For these 744 questionnaires, we identified 1,045 dental encounter forms (1.4 forms per child) and 1,271 IMB visits in Medicaid claims (1.7 claims per child), representing a total of 1,415 visits (approximately two visits per child). Only 156 encounter forms had no corresponding claims, and no claims were without a corresponding encounter form.

Statistical Analysis. Univariate and bivariate analyses were conducted to provide summary statistics of the population and a preliminary assessment of the relationship of the predictor variables with follow-up IMB visits, respectively. An additional descriptive analysis was conducted to determine the number of well-child visits and opportunities for IMB visits within the well-child visit schedule. For this purpose, we created a variable (using the Medicaid claims) that provided a count of well-child visits before, during, and after the month of the initial visit in which IMB preventive dental services were provided. Lastly, a multivariate analysis was conducted to examine the predictors of having follow-up IMB visits using the Cox proportional hazard regression model. Survival analysis allowed records from enrolled children with and without follow-up visits to be considered jointly and included in the analysis (19). Data were analyzed using SAS Release 9.1 (Statistical Analysis System, Cary, NC, USA) (20).

Dependent Variable. The outcome variable of interest was follow-up IMB visits among children who presented for an initial preventive dental visit to their medical provider. The survival analysis modeled time in months to the child's first follow-up preventive dental visit. The children were allowed to reenter the model after their first follow-up and were followed until subsequent visits occurred or they were censored by the end of the study period (September 2003) or end of eligibility for IMB benefits (36 months of age or earlier). Because the children could have multiple visits, the standard errors for the Cox regression estimates were adjusted for clustering at the child level using an approach originally proposed by Andersen and Gill (21).

Predictor Variables. Predictor variables included characteristics of the child (age, sex, only child or not), caregiver (age, race, education, marital status, number of adult caregivers in the household), and medical practice (family medicine or pediatric, continuing medical education RCT group). Several oral health practices and other characteristics were included as predictor variables [past dental use, dental values, dental knowledge, oral health care of child (oral hygiene, diet, any dental use before enrollment in study)]. Categories for several variables were collapsed to account for the small number of observations and dummy variables created for those categorical variables with more than two levels.

Initial analyses indicated a nonlinear relationship between the child's age (in months) and frequency of preventive dental visits in the medical office. Specifically, children younger than 12 months of age had fewer visits than those 13 to 25 months of age. The frequency of visits was even less for those ≥26 months of age. We therefore used three age splines (i.e., ≤12 months, 13 to 25 months, and ≥26 months) in the Cox regression to model a piecewise linear relationship between the child's age and the dependent variable.

We hypothesized that child use of a bottle or sippy cup and past dental visits would vary based on the child's developmental stage and any prior exposure to dental providers. We therefore included two interaction terms for the child's age in months and two dummy variables related to whether the child ever used a bottle or sippy cup for a nap or at night, and whether the child had ever had a dental visit. The available sample size precluded evaluation of any other interactions.

The variable measuring parental value placed on dental health was constructed using five questions asking caregivers to rate the importance of five dental health-related activities for their child (brushing, preventing cavities, fluoride exposure, dental examination, limiting sugar exposures) on a five-point Likert scale (1 = very important to 5 = not important at all). Responses of "very important" were assigned a value of "1," others "0," and an overall score was calculated as the average of the five items. A binary variable was used to code those with a value of less than 0.8 (the mean value for the sample), as placing a "low value" on their child's oral health, compared to those with "high value" (a score of ≥0.8).

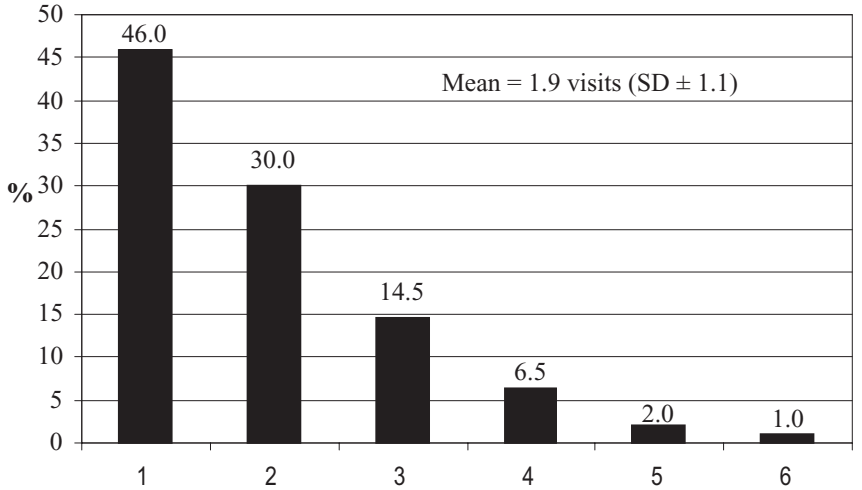
The dental knowledge variable was constructed from caregiver responses to 10 questions asking parental agreement (yes, no, don't know) with various statements in several categories of knowledge important in caring for their child's teeth (caries etiology, fluoride, oral hygiene, dental use). For example, the parent was asked whether he or she believed that putting their child to bed with a bottle containing milk could cause tooth decay. Another question asked the parent whether

Table 1
Summary Statistics for Study Population

Variable	Number of observations	Mean ± standard deviation
Child characteristics		
Age at baseline (in months)	744	15.90 ± 6.18
Only child	713	0.33 ± 0.47
Male	744	0.40 ± 0.49
Race		
White	396	0.53 ± 0.50
Black	284	0.38 ± 0.49
Hispanic or other	54	0.08 ± 0.35
Parent/family characteristics		
Respondent's age (in years)	717	26.24 ± 7.08
High school education or less	725	0.60 ± 0.49
Single parent	735	0.33 ± 0.47
Have help from other caregivers	735	0.79 ± 0.41
Low value placed on dental health	736	0.15 ± 0.36
Low dental knowledge	729	0.74 ± 0.44
Dental care for child		
Child's teeth are cleaned	736	0.88 ± 0.33
Child ever used a bottle or sippy cup	729	0.58 ± 0.49
Child ever had a dental visit	727	0.03 ± 0.17
Type of practice		
Family practice	744	0.04 ± 0.20

$n = 744$.

Figure 1
Percent distribution of the sample by number of preventive dental visits (n = 1,415 visits)



adults who have cavities could pass tooth decay germs to their children. A summary knowledge variable was constructed by calculating a mean score for the 10 items where correct responses were scored as 1 and incorrect responses as 0. A binary variable for dental knowledge was created by coding those with a mean of less than 0.8 (the mean knowledge score for the study sample) as "low" knowledge, compared to those with "high" knowledge (i.e., a score ≥0.8).

A practice type variable (i.e., family versus pediatric practice) was not used in the final regression model because 96 percent of the sample had their visits in a pediatric practice. However, children from different medical practices could vary in their hazard for having a follow-up preventive dental visit. For example, busy practices may find it harder to follow-up with their patients. Conversely, busy practices are likely to have better systems in place to ensure that patients are receiving the well-child and follow-up care they need. We therefore used the study practice identification number as a stratification variable in the Cox regression to adjust the standard error for clustering within the practice. All tests were performed with statistical significance set at $P \leq 0.05$.

Results

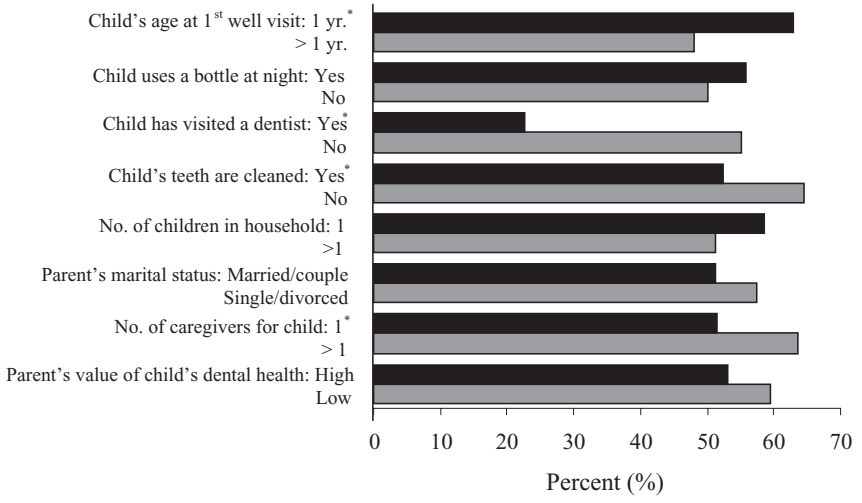
A total of 1,415 visits for 744 of the 810 children with questionnaires could be confirmed by patient dental encounter forms (n = 1,045 visits) and Medicaid claims (n = 1,271 visits) and thus are included in the analysis. Baseline characteristics of the study population are displayed in Table 1. Overall, children had their first IMB visit in the beginning of their second year of life. More than half of the sample was of Caucasian descent. There was a broad distribution of caregiver education and a third reported single parenting. A high value was placed on oral health despite the documented low level of dental knowledge. The majority of caregivers reported cleaning their children's teeth at baseline; however, they also reported frequent use of the bottle or sippy cup at nap or bedtime. Less than 5 percent reported ever having had their child visit a dentist.

The percent distribution of the sample according to the number of preventive oral health visits in the medical setting is displayed in Figure 1. The percent distribution of the sample according to the number of follow-up IMB visits and the mean age at each visit are presented in Table 2. The average length of follow-up time per child was 10.3 months, during which the overall

Table 2
Mean Age (in Months) by Number of Follow-Up Preventive Dental Visits in a Medical Setting

Number of follow-up visits	Sample ($n = 744$)	Age in months, mean (standard deviation)					
		First visit	Second visit	Third visit	Fourth visit	Fifth visit	Sixth visit
None	342	18.1 ± 0.4					
1	223	14.9 ± 0.3	22.5 ± 0.4				
2	108	13.6 ± 0.4	18.9 ± 0.5	25.5 ± 0.5			
3	48	13.8 ± 0.6	18.2 ± 0.6	23.0 ± 0.7	28.7 ± 0.7		
4	15	10.6 ± 0.8	14.5 ± 0.8	19.0 ± 0.9	23.2 ± 1.1	28.1 ± 1.4	
5	8	12.5 ± 1.3	16.6 ± 1.2	19.9 ± 1.2	23.3 ± 1.2	27.0 ± 1.2	32.2 ± 1.3

Figure 2
Bivariate relationships of explanatory variables with follow-up IMB (more than one visit). *Chi-square test significant at $P \leq 0.05$



sample averaged 0.9 follow-up IMB visits per person. Fifty-five percent of the children had one or more follow-up IMB visits and they averaged to 1.7 visits. Children with a greater number of visits were younger at baseline, providing more opportunities for preventive oral health services in this setting. Independent of the time of the initial exposure to preventive oral health services, the time interval between visits diminished with an increase in the number of follow-up visits. For example, on average, there were more than 7 months between appointments for children with only two visits compared to an average of approximately 4 months for those with more than five follow-up visits.

The number of well-child visits for the cohort was assessed beginning at 6 months of age to parallel guidelines for age to initiate IMB benefits. The overall mean number of well-child visits was 4.1 per person (2.0 before, 0.8 during, 1.3 after the month of the IMB visit). An observed 70 percent of the sample had one or more well-child visits after the month in which the initial IMB visit occurred and they averaged 1.8 visits per child. The sample also had an average of 12.4 nonwell-child visits per child (5.4 before, 0.6 during, 6.5 after the month of the IMB visit) during the observed enrollment time for all children, reflecting additional opportunities to deliver preventive dental services in the medical setting.

Bivariate Analysis. The bivariate analysis indicated that children whose caregivers reported cleaning their child's teeth ($P = 0.03$), had taken their child to a dentist ($P < 0.01$), and were single parents ($P = 0.01$), were less likely to have at least one follow-up IMB visit (Figure 2). Conversely, those children who had a preventive dental visit in the medical setting in their first year of life ($P < 0.01$) were more likely to have a follow-up IMB visit (Figure 2).

Multivariate Analysis. Table 3 displays the hazard ratios for the Cox proportional hazard regression model of the predictors of time to a follow-up IMB visit. A few variables emerged as significant and predictive of decreased likelihood of follow-up visits, including the child being male, older at baseline, and has a caregiver with a high school education or less. Conversely, families with three children living in a home, when compared to those with only one child, were more likely to have follow-up visits, as were caregivers reporting at their first IMB visit to have a child who was using a bottle or sippy cup at night. The latter relationship, however, interacted with age, with older children at the initial visit being less likely to demonstrate this relationship compared to those children who were younger at the initial visit.

Discussion

Little is known about the effectiveness of medical models for delivering oral health preventive services to young vulnerable populations. The effectiveness of these services is in part determined by the willingness and opportunities available to provide them. Current recommendations suggest that young children at risk for early childhood caries

Table 3
Predictors of the Likelihood of a Follow-Up Preventive Dental Visit

Variables	Hazard ratio	Robust standard error
Child characteristics		
Age spline categories		
≤12 months	1.01	(0.15)
13-25 months	0.89**	(0.02)
≥26 months	0.92*	(0.03)
Male	0.83*	(0.07)
Race/ethnicity (versus White)		
Black	1.01	(0.12)
Hispanic	1.27	(0.29)
Other	1.24	(0.40)
Parent/family characteristics		
High school education or less (versus >high school)	0.70**	(0.06)
Marital status (versus married or unmarried couple)		
Single	1.11	(0.12)
Divorced	1.17	(0.19)
Have help from ≥1 caregiver/s (versus not)	1.04	(0.12)
Low value placed on dental health	1.08	(0.12)
Low dental knowledge	1.10	(0.12)
Number of children living in household (versus one)		
Two	1.09	(0.11)
Three	1.31*	(0.16)
Four or more	1.29	(0.20)
Dental care for child		
Child's teeth are cleaned (versus not)	0.89	(0.12)
Child goes to bed with a bottle or sippy cup (versus never)	3.17*	(1.19)
Age – bottle use interaction	0.95*	(0.02)
Child ever had a dental visit (versus never)	6.36	(7.78)
Age – ever had dental visit interaction	0.96	(0.05)

Parent child observations = 613 from 32 practices.
* Significant at 5%; ** significant at 1%.

receive topical fluoride applications every 3 to 6 months along with other preventive dental services (22). The IMB demonstration program was designed to provide for up to six preventive dental visits between the time the first teeth emerge and the child turns 3 years of age. This study was an effort to describe the frequency and predictors of follow-up preventive oral health visits within a cohort of children seeking medical services from physicians participating in a study on the effectiveness of continuing medical education.

Children received approximately two-thirds of their remaining recommended well-child visit (15, 18, 24 months) from the time of enrollment (mean age = 15 months) to their third birthday. Although the percent of children with follow-up IMB visits was less than those with well-child visits (55 versus 70 percent), the mean number of follow-up IMB visits (mean = 0.9) was not too dissimilar from follow-up well-child visits (mean = 1.3) in absolute values. This finding suggests that in this study sample, there were a limited number of opportunities to increase the provision of IMB visits within the well-child schedule after 15 months. However, the significant number of other types of visits in the medical office during the study period suggests that alternate opportunities are available to increase the frequency of IMB visits. These additional opportunities are important because they occur during a time when additional primary teeth are emerging into the oral cavity and the average risk for early childhood caries is on the rise.

Furthermore, both the descriptive and analytical results of this study highlight the importance of beginning IMB and well-child visits early, as they can promote an increase in future well-child visits and provide additional opportunities for exposure to oral health preventive services. For example, Freed et al. (23) reported prenatal care in the third trimester to be a predictor of an adequate number of well-child visits in the first 2 years of life. They also found that children with an adequate number of well-child visits were more likely to have up-to-date immunizations. It is possible that similar factors may influence and promote an increase in exposure to oral health services in the medical office.

Although only a few determinants were associated with follow-up oral health visits, two were compatible with the risk assessment model of care. Parents of children with follow-up visits were more likely to report putting their child to bed for the night or naps with a bottle or sippy cup, a risk behavior for the development of dental disease that occurs frequently and is well known among physicians (24,25). Similarly, children who were part of a large family were more likely to have follow-up visits, a possible proxy for lower income status within this low-income sample because of increased financial demands that come with supporting larger families. Working caregivers with larger families also could require more assistance in caring for their children and possibly decentralizing daily preventive child care activities, including oral health. These findings suggest that physicians may be conducting assessments for risk of dental disease as recommended by professional guidelines, and increasing the provision of preventive services based on these assessments (26).

The Cox regression model demonstrated also that older children and males were less likely to receive follow-up preventive oral health visits. The age variable is consistent with evidence indicating less compliance with the well-child visit schedule in older children (13). This visit pattern, however, is not in concor-

dance with a child's dental development, whereby greater numbers of teeth are present over time. More difficult to explain is the gender association, as evidence does not indicate a statistically significant difference in frequency of well-child visits or dental disease rates between males and females (9,27).

Study Limitations. The lack of information documenting changes in a child's caries risk over time precluded us from relating any change in risk to follow-up visits. This limitation became an important consideration as the baseline risk of night feeding mattered less with increasing age. The children enrolled for this study were part of a larger clinical trial that required the first exposure to preventive oral health services to occur later than it is intended in the statewide program. Therefore, some results are not generalizable to other practices that are participating in the IMB program where children may start with preventive dental services at an earlier age. Further influencing the external generalizability is the bias inherent in those practices that agreed to participate. It is also important to note that this study occurred during the implementation phase of IMB and could represent an underestimate of the age at which visits start and the total number of children who receive initial and follow-up services under the current statewide program.

Policy Implications. Primary care physicians can play an important role in addressing the unmet dental health needs of children, particularly the delivery of preventive oral health services to young, vulnerable populations. Thus, an important policy question, as highlighted in this study, is how can follow-up preventive oral health visits in the medical setting be promoted within the limits of a medical care system where: a) a decrease in the periodicity of well-child visits takes place during a time when the risk for dental disease is increasing (22,23); b) time constraints exist within the well-child visit; c) interruptions in Medicaid eligibility status can occur throughout the first 3 years of life; and d) compliance with the recommended well-child visit schedule in general is not optimal?

Although the age requirements for entry into this clinical trial decreased the already diminished opportunities for IMB visits within the well-child visit schedule, a focus on beginning care early can provide an opportunity to increase overall compliance with this program and possibly its effectiveness. In addition, as the number of recommended well-child visits decreases after 18 months of age, medical staff can begin to take advantage of other types of visits to increase the delivery of IMB services. This strategy is particularly important as our study demonstrated limited additional opportunities within the well-child visit schedule as the overall IMB and well-child visits occurred at an average of approximately two out of three possible visits. This alternate approach of medical visits outside the traditional well-child visit can provide additional opportunities to deliver preventive dental services and help address time constraints within scheduled visits that are documented as critical barriers for the delivery of preventive services by primary care physicians (28,29).

Partnership between medical offices and community resources such as the Women, Infants and Children Program, Early Head Start, and day care centers can help encourage early visits and funnel children back into the system to increase adherence to the existing well-child visit schedule and exposure to oral health prevention within these appointments. Community involvement can assure further that those eligible for social programs such as Medicaid and the State Children's Health Insurance Program make use of those resources and decrease missed opportunities for the delivery of all preventive services. Similarly, models that include collaborations between medical and dental practitioners should be promoted. This approach can facilitate linkage of children's medical and dental homes, particularly at a time when gaps in the well-child visit schedule exist and the oral health needs of disadvantaged children are on the rise.

Finally, Medicaid policies should provide physicians with sufficient flexibility to meet the oral health preventive needs of their patients. The connection between the periodicity schedule and reimbursement policies, such as limitations on the reimbursement interval or the type of visit (well-child visit, sick visit) should not be overly restrictive. The age at which the benefit ends is also an important consideration. Policies for the North Carolina-IMB program do not allow reimbursement once a child has had his or her third birthday, but the 3-year-old well-child visit often occurs after the third birthday, essentially meaning that the benefit ends with the 2-year-old well-child visit if most preventive dental visits occur in conjunction with the well-child visit.

In summary, as alternate models of delivering oral health preventive services in the medical setting are examined to address dental disease among low-income populations, strategies to increase visit frequency for preventive dental services require further attention. Such strategies will need to be tied to increasing efficiency within all primary care medical visits as well as the periodicity and compliance around well-child visits so that they begin early and occur in a timely manner. The frequency of potential dental visits should be considered also by state policymakers who are designing programs to deliver oral health services in medical offices. Future studies should study visit patterns in a larger and more representative sample and emphasize the influence of visit patterns on oral health outcomes.

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