



# A survey of the American Academy of Pediatric Dentistry membership: infant oral health care

Pamela R. Erickson, DDS, PhD    Huw F. Thomas, BDS, MS, PhD

## Abstract

The AAPD has long held that preventive oral health care instituted during the first year of life results in long-term enhanced oral health status. A 33-item questionnaire addressing membership attitudes regarding infant oral health care was mailed to 1500 active AAPD members in the spring of 1996. The 913 (60.9%) responses were received, and descriptive statistics were obtained. Results suggest that the respondents were representative of the demographics of the AAPD membership. While 72.6% of the respondents agreed with the AAPD policy, only 46.6% practiced the AAPD policy of performing the first oral evaluation at age 12 months or younger. Agreement with the policy and the age at which infant evaluations were recommended were dependent upon the age of the respondent. Younger practitioners were significantly more likely to agree with the policy (85%) and perform evaluations according to the guidelines (66%). The Academy must provide better communication to the established membership regarding the rationale for early visits and how to perform infant evaluation. Nearly 20% of respondents reported that they did not perform infant evaluations, mainly because 1) existing conditions, and not age, should be the reason for seeing these patients (78.4%), and 2) parents don't see the value (64.0%). A variety of responses were given when asked how the AAPD could assist these persons in providing this service to their patients. The most common suggestions were:

1. Educate pediatricians/primary care providers about the value of early dental evaluations,
2. Offer guidelines or a protocol for incorporation of infant evaluations into an office routine,
3. Prepare materials and/or brochures for education of parents, and
4. Organize a public relations promotion demonstrating the value of early examinations.

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The American Academy of Pediatric Dentistry first published a policy on Infant Oral Health Care in 1983. This policy has been subsequently revised and the current policy states:

"The infant oral health care visit should be seen as the foundation on which a lifetime of preventive edu-

cation and dental care can be built, in order to help assure optimal oral health into childhood. Oral examination, anticipatory guidance including preventive education, and appropriate therapeutic intervention for the infant can enhance the opportunity for a lifetime of freedom from preventable oral disease."<sup>1</sup>

As established, the recommendations suggest that the dentist should record the medical and dental history, perform an oral examination and risk assessment, and provide anticipatory guidance regarding dental and oral development, fluoride status, oral habits, injury prevention, oral hygiene, and diet.

While there has been a remarkable improvement in the oral health of children living in North America, there continue to be pediatric patients with extensive dental decay, primarily baby bottle tooth decay. It is important that we as pediatric dentists embrace the medical model that early preventive care and parental counseling can reduce the level of dental decay in these young children. Because all children are not at equal risk for dental disease, the intent of infant oral health evaluations is to identify disease and/or risk factors in these very young children, thereby reducing the severity and or preventing the development of future dental disease.

The purpose of this survey was to determine: 1) the extent of agreement with the AAPD policy, 2) the standard practices of pediatric dentists who do perform infant evaluations, and 3) why some members don't agree with the policy or don't perform infant evaluations.

## Methods

The survey and instructions, developed by the AAPD Infant Oral Health Ad-Hoc Committee, were mailed to a random sampling of active and fellow members in the spring of 1996. It included 33 questions addressing three areas, including demographics, infant dental evaluations, and prenatal counseling. Most questions had multiple responses, and members were requested to mark the response category that best applied. For some items, members were requested to mark as many of the response categories as applied to their practice circumstances or to provide written explanations.

**TABLE 1. DEMOGRAPHICS OF RESPONDENTS**

<i>Demographic</i>	<i>Number of Responses</i>	<i>Percent</i>
<i>Age in Years</i>		
< 30	38	4.2
31-40	269	29.5
41-50	356	39.0
51-60	201	22.0
> 60	49	5.4
(missing 0)		
<i>Sex</i>		
Male	710	77.8
Female	203	22.2
(missing 0)		
<i>Marital Status</i>		
Married	800	87.8
Not married	111	12.2
(missing 2)		
<i>Children</i>		
No	163	18.0
Yes	743	82.0
(missing 7)		
<i>Years Practicing as a Pediatric Dentist</i>		
< 2	69	7.6
2-5	114	12.5
6-10	129	14.1
11-20	323	35.4
> 20	278	30.4
(missing 0)		
<i>Type of Practice</i>		
Solo	512	57.4
Partnership	206	23.1
HMO employee	7	0.8
Non-HMO employee	67	7.5
Faculty practice	43	4.8
Other	55	6.2
(missing 23)		
<i>Location of Practice</i>		
Large urban	253	27.8
Middle-small urban	326	35.8
Suburban	293	32.2
Rural	38	4.2
(missing 3)		
<i>Patient Base</i>		
Upper class	124	13.7
Middle class	450	49.7
Lower class	104	11.5
Mixed classes	227	25.1
(missing 8)		

A total of 1500 surveys were mailed and 913 (60.9%) were returned. The number of respondents for each question was high with, on average, only 1.5% of respondents failing to answer any individual question. Descriptive analyses were completed using Version 6.09 of SAS™ (SAS Institute, Cary, NC) running on a Sun SparcServer™.

Percentages reported for any given question reflect only those who responded to that question rather than the total questionnaires returned. Chi-square tests were used to compare percentages between nominal categories.

## Results

### Demographic information

Eleven survey questions examined practitioner demographics. In essence, the analyses indicated that the responses were representative of the demographics of the AAPD membership. Table 1 shows a summary relating to respondent demographics. The majority were solo practitioners treating predominantly middle socio-economic or a mixed patient base. There was an even distribution among large urban, middle to small urban, and suburban practice locations, with a significantly smaller number practicing in rural areas.

### Infant oral evaluations

The current AAPD policy for infant oral health states: "A postnatal initial oral evaluation visit should occur within six months of the eruption of the first primary tooth and no later than twelve months of age".<sup>1</sup>

Three survey questions examined the respondents attitudes regarding infant oral evaluations. Table 2 shows a summary of responses relating to these questions. Most (72.7%) respondents stated they agreed with the AAPD policy. However, when indicating the age at which an asymptomatic child should be seen for their first dental evaluation, only 46.5% of responses matched the AAPD policy of 12 months of age or younger. Significantly more ( $P < 0.001$ ) respondents younger than 40 years of age agreed with the AAPD policy (85%) than respondents between 40 and 60 years (67%) and older than 60 years old (55%). When controlling for male respondents, this age relationship continued to be significant. However, for the female respondents, age was not significantly related to agreement with the policy ( $P = 0.310$ ), with 86.3% of female respondents reporting they agree with the policy. Of the 652 respondents who agreed with the AAPD policy, 90.5% stated they did perform infant evaluations. Whereas, of the 246 respondents who did not agree with the policy, only 54.9% stated they performed them.

Twelve survey questions examined the practices of respondents who reported they did perform infant dental evaluations. Table 3 shows a summary of responses to these questions. Eighty percent of these respondents indicated that they did so because 1) they believed it is best for the child and 2) for parental education. The responses indicated that the practitioners performed one or fewer evaluations per week, and, in general, infant evaluations comprised less than 5% of new patients. Also, the amount of time scheduled for evaluations was quite varied with the greatest percent of responses, indicating their infant evaluation lasted between 15 and 30 minutes. Three-fourths (74%) of the scheduled time was spent directly with the dentist. The

**TABLE 2. MEMBERSHIP ATTITUDES REGARDING INFANT ORAL HEALTH EVALUATIONS**

Infant Age (months)	Agree with Policy, Number (Percent)		Perform Evaluations, Number (Percent)		All Respondents, Number (Percent)
	Yes	No	Yes	No	
< 6	18 (2.0)	1 (0.1)	17 (1.9)	2 (0.2)	19 (2.1)
6-12	400 (44.6)	3 (0.3)	376 (42.2)	25 (2.8)	405 (44.4)
13-18	137 (15.3)	38 (4.2)	149 (16.7)	25 (2.8)	177 (19.5)
19-24	51 (5.7)	65 (7.3)	81 (9.1)	35 (3.9)	118 (13.0)
25-30	25 (2.8)	63 (7.0)	52 (5.8)	36 (4.0)	92 (10.1)
31-36	18 (2.0)	51 (5.7)	34 (3.8)	35 (3.9)	71 (7.8)
> 36	3 (0.3)	24 (2.7)	10 (1.1)	15 (1.8)	28 (3.1)
Total responses	652 (72.7) (missing = 15)	245 (27.3)	719 (80.6) (missing = 21)	173 (19.4)	913

**TABLE 3. PRACTICES OF RESPONDENTS WHO DO PERFORM INFANT ORAL HEALTH EVALUATIONS**

Issue Addressed	Number Responding	Percent
<i>Frequency of Evaluations</i>		
< 1/month	100	13.8
1/month	150	20.7
1/week	159	22.0
2-5/week	204	28.2
6-10/week	50	6.9
> 11/week (missing 9)	61	8.4
<i>Percent of New Patients</i>		
< 1%	327	44.9
2-5%	263	36.1
6-10%	89	12.2
11-15%	29	4.0
> 15% (missing 4)	21	2.9
<i>Time Scheduled for Evaluations</i>		
5 min	31	4.2
10 min	94	12.8
15 min	242	33.1
20 min	135	18.4
30 min	209	28.6
> 30 min (missing 1)	21	2.9
<i>Encourage Sibling Evaluations</i>		
No	108	14.8
Yes	620	85.2

remaining time was distributed equally between the receptionist and the assistant. When asked what items were assessed and/or discussed during infant oral evaluations, more than 90% of respondents indicated: soft tissue exams, hard tissue exams, oral hygiene counseling, medical history, child's fluoride status, and feeding practices (Table 4). In comparison, only 40% or less indicated they discussed injury prevention and oral risk assessment.

The majority of respondents indicated that they charged between \$21 and \$30 for these evaluations. Only 12.5% reported having had insurance reimbursement problems, with most of the problems relating to insurance policies not providing dental coverage for children younger than 3 years of age. Of respondents who reported they did perform infant dental evaluations, 85.2%

encouraged evaluation of siblings.

Nearly 20% of respondents reported that they did not perform infant evaluations. The major reasons for not performing infant oral evaluations were 1) existing conditions, and not age, should be the reason for seeing these patients (78.4%) and 2) parents don't see the value (64.0%)(Table 5). A variety of responses were given when asked how the AAPD could help practitioners provide this service to their patients. The most common suggestions were:

1. Educate pediatricians/primary care providers about the value of early dental evaluations
2. Offer guidelines or a protocol for incorporation of infant evaluations into an office routine
3. Prepare materials and/or brochures for education of parents
4. Organize a public relations promotion demonstrating the value of early examinations. Of the members who did not perform infant evaluations, 57.8% agreed that the AAPD should pursue the issue with the membership.

**TABLE 4. ITEMS ASSESSED AND/OR DISCUSSED DURING INFANT ORAL HEALTH EVALUATIONS**

Item	Number of Responses	% of Total Responses
Soft tissue exam	706	96.8
Hard tissue exam	696	95.5
Oral hygiene counseling	694	95.2
Medical history	677	92.8
Child's fluoride status	675	92.6
Feeding practices	666	91.3
Designate exam intervals	640	87.8
Dietary counseling	625	85.7
Diagnose & describe treatment	570	78.2
Oral habits counseling	570	78.2
Remove stain/deposits	468	64.2
Anticipatory guidance	438	60.1
Dental history of parents	397	54.5
Injury prevention counseling	296	40.6
Oral risk assessment	281	38.6
Family structure	206	28.3

**TABLE 5. REASONS FOR NOT PERFORMING INFANT ORAL HEALTH EVALUATIONS**

<i>Reason</i>	<i>Number of Responses</i>	<i>% of Total Responses</i>
Existing conditions and not age should be the reason	87	78.4
Parents don't see the value	73	64.0
Low decay rate in practice locale	48	49.5
Parents should decide	24	25.5
Patients are too uncooperative at this age	19	20.9
Too busy with older patients	14	14.6
Cannot charge for procedures	12	13.2
Frightens child	12	13.2

**TABLE 6. PRENATAL DENTAL COUNSELING**

<i>Issue Addressed</i>	<i>Number of Responses</i>	<i>Percent</i>
<i>Perform Prenatal Counseling</i>		
Yes	366	41.7
No	511	58.3
(missing 36)		
<i>How Often</i>		
1/week	38	10.7
1/month	182	51.1
1/year	136	38.2
(missing 10)		
<i>Groups Counseled</i>		
Expectant mothers	172	
Prenatal classes	217	
Health Care Providers	99	
WIC programs	53	

### Prenatal dental counseling

Three survey questions examined practitioner attitudes regarding prenatal dental counseling. Table 6 shows a summary of responses related to these questions. Of the respondents, 41.7% reported that they did provide some prenatal counseling, with the greatest percentage providing counseling on average once per month. The most common groups counseled included expectant mothers in their practice and prenatal classes.

### Discussion

The health of the mouth and the dentition plays a major role in the life of a child, through facilitating nutritional intake, providing a nonverbal means of expressing happiness and sadness, and allowing for vocal communication. Therefore, a healthy mouth with a full complement of teeth should be the goal for all children. Because dental diseases, trauma, and their sequelae are largely preventable, early dental evaluations will help to educate parents about the oral development of their child, the etiology and prevention of dental diseases, and prevention of injuries.

Preventive oral health care, as provided in infant oral health evaluations, is a continuum that includes

primary, secondary, and tertiary prevention. Primary preventive measures are directed at avoiding disease or conditions before they begin. Primary infant oral health prevention may include educating parents about the association of night-time bottle use with baby bottle tooth decay or identifying non-nutritive sucking as a potential cause of dental malalignment. Secondary preventive measures are those in which a condition is identified early, and effective treatment instituted for remediation of the condition before progression. Secondary infant oral health prevention may include the application of fluoride to early white-spot lesions on maxillary incisors. Tertiary prevention is directed at halting disability from established disease and may include the restoration of carious teeth to avoid their premature loss and thereby protect oral function.

The AAPD membership largely embraces the concept of infant oral health evaluations, with more than 70% of members responding that they agree with the Academy's policy, and more than 80% reporting that they perform evaluations on young children. However, almost 30% of the membership disagrees with the Academy's policy, and more than half do not perform infant evaluations according to the published guidelines. While it is unclear in our survey, it is likely that the membership does not fully appreciate the benefits of these early visits. This thought is supported by an assessment of the activities performed by most pediatric dentists when performing an infant oral health evaluation. The items assessed and/or discussed relate primarily to the diagnosis of pathology. Only a small percentage of respondents included risk assessment, anticipatory guidance, or injury prevention counseling in their infant exams. With anticipatory guidance, the dentist can educate the parent to anticipate and possibly avoid potential oral health problems. Furthermore, with our knowledge of risk factors increasing, especially in the area of dental caries,<sup>2-5</sup> we are now better able to implement risk assessment into our everyday practice.

While the AAPD has adopted a policy on infant oral health care, it is clear the Academy must now embrace measures to further educate the membership on the advantages of performing complete and thorough infant evaluations, so that we may better promote the oral health of children. The relationship of practitioner age with 1) agreement with the policy, and 2) performing infant evaluations, suggests that our recent graduates are well educated on the importance of infant oral health evaluations. Therefore, the new measures implemented by the AAPD should focus on pediatric dentists who are in established practices. As recommended by the respondents to this survey, these measures may include offering guidelines or preparing a protocol for incorporating infant evaluations into an office routine, and preparing materials and/or brochures to be used in infant oral health evaluations.

To implement infant evaluations into everyday practice, the respondents also suggested the need to educate pediatricians/primary care providers about the

value of early dental evaluations and to organize a public relations promotion demonstrating the value of early examinations. The AAPD has long held that preventive oral health care instituted during the first year of life results in long-term enhanced oral health status. Nevertheless, the medical and dental professions at large have been resistant to support this effort. Indeed, this is evident in a pediatric newsletter,<sup>6</sup> where they posed the question "Should all children visit a pediatric dentist within 6 months of getting their first tooth?" Dr. Peter Rappo, chair of the AAP Committee on Practice and Ambulatory Medicine, answers "No". He points out that pediatricians already perform these services and that the AAPD guidelines duplicate their efforts. He goes on to say that "some pediatric dentists within the American Academy of Pediatric Dentistry are not in full agreement with their organization's recommendations because they are too busy with restorative work in older children."

There are three concerns raised by his statement. First, he implies that pediatricians are already providing this service. However, with the prevalence of early childhood caries remaining around 5% nationally,<sup>7-8</sup> and some populations exhibiting rates as high as 50%,<sup>9-10</sup> one may question whether adequate counseling on oral health is currently being provided. Furthermore, Casamassimo and Nowak, in a preliminary study of 100 children treated for baby bottle tooth decay, found that these children had seen their pediatrician more than nine times before they were diagnosed with extensive dental decay (personal communication).

Secondly, while some pediatric dentists are not in full agreement with the Academy's recommendations, clearly, a significant number agree with the Academy's policy and do provide these important services when asked to do so.

Lastly, when stating that pediatric dentists are too busy with restorative work on older children to perform these services, perhaps that is because ECC was not prevented in the first place. A recent publication,<sup>11</sup>

shows that early dental caries is associated with a 17-fold increase in future risk of dental decay. Clearly, if early decay can be prevented, we may be able to significantly reduce the need for restorative work in older children as well.

Dr. Erickson is assistant professor, Division of Pediatric Dentistry, University of Minnesota and Dr. Thomas is professor and chair, Department of Pediatric Dentistry, The University of Texas Health Science Center at San Antonio.

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1. Reference Manual. Infant Oral Health Care. *Pediatr Dent* 17(6, Special Issue):26, 1995.
2. Muller M: Nursing-bottle syndrome: Risk Factors. *J Dent Child* 63:42-50, 1996.
3. Fass EN: Is bottle feeding of milk a factor in dental caries? *J Den Children* 29:245-51, 1962.
4. Gardner DE, Norwood JR, Eisenson JE: At-will breast feeding and dental caries: four case reports. *J Dent Child* 44:186-91, 1977.
5. Johnsen DC: Characteristics and backgrounds of children with "nursing caries". *Pediatr Dent* 4:218-24, 1982.
6. Pro & Con: Should all children visit a pediatric dentist within 6 months of getting their first tooth? *Pediatric News*, Rockville, MD, December 1995.
7. Derkson GD, Ponti P: Nursing bottle-syndrome: prevalence and etiology in a non-fluoridated city. *J Canad Dent Assn* 6:389-93, 1982.
8. Milnes A: Description and epidemiology of nursing caries. *J Public Health Dent* 56:38-50, 1996.
9. Broderick E, Mabry J, Robertson D, Thompson J: Baby bottle tooth decay in Native American children. *Public Health Rep* 104:50-54, 1989.
10. Kelly M, Bruerd B: The prevalence of baby bottle tooth decay among two native American populations. *J Public Health Dent* 47:94-97, 1987.
11. Al-Shalan TA, Erickson PR, Hardie NA: Primary incisor decay before the age of four as a risk factor for future dental caries. *Pediatr Dent* 19:37-41, 1997.