

An assessment of Connecticut pediatricians' recommendations regarding oral health care in young children.

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Abstract:

Background: Pediatricians are the first and most frequent health care providers seen by infants and young children. They are in the position to make referrals to dentists as well as provide information about oral health care to parents. **Objective:** The purpose of this study was first to determine the age at which pediatricians in Connecticut refer patients to the dentist. The second purpose was to assess the anticipatory guidance that they provide regarding oral hygiene, fluoride, oral habits, and feeding and weaning. Finally, the frequency of performing an oral exam and an assessment of the pediatrician's exam was determined. **Methods:** Multiple choice questionnaires were mailed out to 330 pediatricians in Connecticut. The results were analyzed using Excel and SPSS. **Results:** The response rate was 45 % after one mailing. The majority of pediatricians in CT do not refer to a dentist until the age of 25- 36 months which was similar to the AAP recommendations and this was unaffected by reading the AAPD guidelines for earlier referral. Pediatricians were most likely to recommend teethbrushing at the appearance of the first tooth and limited toothpaste usage to pea size. Interestingly, only 70.4 % of pediatricians prescribed fluoride usage based on patient's age and fluoride level in the water despite the AAP and AAPD guidelines for supplementation. There was a wide range of responses to when to begin active intervention for oral habits suggesting a lack of united opinion on oral habits. In general early childhood caries were discussed around that age of 7-12 months, however they were less frequently discussed in the breast fed child (22 %). The oral exam was performed at all well child visits by 98.6 % of practitioners and baby bottle caries, other caries, and eruption sequence of teeth were most commonly looked for in the exam. Malocclusion was less commonly checked. Interestingly incisal wear (21.2 %) and cancer screening (19.2 %) usually seen in an older population, were also screen for which suggests uncertainty in what to look for in a young child's dental exam. Overall reading the American Academy of Pediatric Dentists Guidelines had minimal effect on the response to questions. **Conclusion:** The results of this study suggests that further clarification and expansion in the AAP guidelines regarding oral health care may be necessary for pediatricians to be more aware of oral health care needs.

Introduction:

In today's health care system there are generally two types of health care providers that provide information about oral health care for young children, the pediatrician and the pediatric dentist. A pediatric dentist is specifically trained to discuss

anticipatory guidance about oral health care with parents of young children as well as to examine the mouth for problems of infancy and early childhood. Many pediatricians also feel comfortable in discussing these topics. The pediatrician is the first to provide information starting from the newborn period and sees the patient and parents on a regular basis for the first years of life. The frequency of visits provides an opportunity to deliver the anticipatory guidance about oral hygiene, fluoride, feeding and weaning, and oral habits. An experienced provider can also perform a basic dental exam to screen for problems such as baby bottle caries, other caries, eruption sequence and malocclusion.

Traditionally the AAP has recommended seeing a dentist by the age of 36 months, however, recent guidelines in Bright futures: guidelines for health supervision of infants, children, and adolescents recommends a referral to the dentist at the 12 month visit (Green, 94). This new recommendation in agreement of the American Academy of Pediatric Dentists oral health guidelines which recommend a visit to the dentist at the age of 12 months, or 6 months after the appearance of the first tooth. This first visit should be composed of the following: a dental and medical history, oral examination, assessment of the risk of developing oral and dental disease, and anticipatory guidance regarding dental and oral development, fluoride status, non nutritive oral habits, injury prevention, oral hygiene and the effects of diet on the dentition. (AAPD reference manual, 77)

Given that the traditional age for sending children to the dentist is 36 months, are pediatricians providing the same information that a pediatric dentist would provide during this time period? The AAP has policy statements for fluoride usage and breast feeding, however there has not been any policy statements regarding oral hygiene, diet, visits to the dentist, oral habits or early childhood caries. Most of the writings regarding

infant and childhood oral health care have been published in dental literature, which is unread, by pediatricians. A previous study of pediatricians regarding pediatric preventative dental care have concluded that respondents received 2 hours or less of preventive dental education during medical and specialty training (Sanchez, 377). Another study of pediatricians reported that 13.4% felt their knowledge of the oral cavity and the developing dentition was excellent, 18 % felt it was good, 19.6% felt it was adequate, 15.6% thought it was poor, and 19.4% felt that they needed improvement (Tsamtsouris, 152.)

The purpose of this study was first to determine the age at which pediatricians in Connecticut refer patients to the dentist. The second purpose was to assess the anticipatory guidance that they provide regarding oral hygiene, fluoride, oral habits, and feeding and weaning. Finally, the frequency of performing an oral exam and an assessment of the pediatrician's exam was determined.

Methods:

A list of 1026 pediatricians in CT was obtained from the AAP membership handbook. The following were excluded from the list: emeritus fellows, specialty fellows, resident fellows, fellows in postgraduate training and fellows who belonged to a section not involved in primary pediatrics. A total of 660 eligible pediatricians were identified and a survey was mailed to 330 of these physicians with the prediction of a 30% return of surveys. Responses to be excluded would be those who returned the survey without filling it out and those who filled out the survey but were part of the original exclusion criteria.

The survey was composed of 25 multiple choice questions about the following areas: oral hygiene, dental visits, fluoride usage, oral habits, feeding and weaning, dental exams, and the demographics of each provider. The survey was piloted with both pediatricians and pediatric dentists. The Institutional Review Board approved the survey for Human Use. A cover letter and a pre-addressed stamped envelope accompanied each survey. Confidentiality was maintained throughout the study.

A database file using Excel 4.0 was created for the responses to the survey. The data was analyzed using the SPSS 9.0 statistical program. Statistical analysis included descriptive statistics.

Results:

Of the 175 responses returned, 150 were suitable for analysis. Respondents represented 58 different towns in CT with 40.7% being female and 59.3 % being male. Practice composition included 13.1 % solo, 64.8 % group, 5.5 % community health clinic, 13.1 % hospital base clinic, and 3.4 % academic. Of the responders, 80.3 % reported that their practice was 100% general pediatrics. Years in pediatric practice ranged from 1 to 54 years. The American Academy of Pediatric Dentistry Guidelines had been read by 33.3 % of responders.

Recommendations about Dental Visits: 138 (93.9 %) of respondents recommended children first see a dentist according to age and 22 (5.4 %) recommended according to appearance of primary teeth. Of those who recommend according to age: 1 (0.7 %) responded 4-6 months, 13 (9.1 %) for 13-24 months, 118 (82.5 %) for 25-36 months, 11 (7.7 %) for 4-5 years old.

Knowledge of Oral Hygiene: In this study, 30 (20.4 %) of responders recommended to begin teethbrushing/cleaning before the teeth appear by wiping the gums with a washcloth, 75 (51 %) began teethbrushing as soon as a tooth appeared, 34 (23.1 %) began after several teeth appeared, and 8 (5.4 %) recommended beginning when a child can hold a tooth brush. Amount of toothpaste recommended was: 30 (20.4 %) none, 54 (36.7 %) just a dab, 51 (34.7 %) pea size, 3 (2.0 %) length of the tooth brush bristles and 9 (6.1 %) do not recommend toothpaste. There were 125 (85 %) pediatricians who discussed avoiding consumption of toothpaste by young children.

Fluoride Usage: 108 (72.5 %) reported that there was fluoride supplementation in the town water supply, 31 (20.8 %) reported there was none, and 10 (6.7 %) reported more than one supplier of water to the town with differences in fluoridation. Of respondents 136 (90.7 %) reported they asked families if they had well water and 92 responders (67.6 %) asked families for a water analysis to be performed on their well water. Of those responders that asked about well water, 44 (33.1 %) did not ask for a water analysis to be performed. There were 135 responders (90.6 %) that prescribe fluoride supplements. Doses of fluoride were prescribed according to a standard amount by 3 (2.0 %), according to specific water levels of fluoride by 5 (3.3%), by patient's age for 32 (21.3 %) and according to age and water levels of fluoride by 95 (63.3). Those responders that did not ask families to have water analysis performed on their well water were also more likely to dose supplements based on just age (23, 57.5 %) as opposed to age and water fluoride level (15, 37.5 %).

Knowledge of Oral Habits: The age at which respondents suggested active intervention for children with non-nutritive sucking habits including thumbs, digits, or

pacifiers was 11 (7.9 %) from birth, 30 (21.4 %) from 12 months, 43 (30.7 %) from 24 months, 20 (14.3 %) from 36 months, 16 (11.4 %) from 4 years and from 5 years, and 4 (2.9 %) do not discuss oral habits.

Feeding and Weaning: For the bottle fed child, respondents began to discuss early childhood caries at 0-3 months (23, 16.0 %), 4-6 months (29, 20.1 %), 7- 12 months (74, 51.4 %), 13-18 months (16, 11.1 %) and 19- 24 months (2, 1.4 %). For the breast fed child, early childhood caries were discussed at 0-3 mo. (11, 8.9 %), 4-6 mo. (18, 14.6 %), 7-12 mo. (52, 42.3 %), 13-18 mo. (14, 11.4 %), 19-24 mo. (1, 0.8%) and was not discussed by (27, 22 %). Use of a cup was recommended at 4-6 mo. (15, 10.3 %), 7-12 mo. (107, 73.8 %), 13- 18 mo. (20, 13.8%), and other ages (3, 2.1 %). Weaning from the bottle was recommended at 7-12 mo. (45, 30.6 %), 13-18 mo. (86, 58.5 %), 19- 24 mo. (14, 9.5 %), other (2, 1.4 %). Weaning from the breast was recommended at 7-12 mo. (24, 17.8 %), 13-18 mo. (43, 31.9 %), 19-24 mo. (11, 8.1%) was not discussed by (12, 8.9 %), other with most suggested mom's preference (45, 33.3 %). The relationship between diet and caries was discussed at all WCC by (26, 18.1 %), at almost all WCC (63, 43.8 %), discussed if a problem was suspected (52, 36.1%), and never discussed (3, 2.1 %).

Dental Exam: The oral exam was attempted to be performed at all well child checks according to 144 (98.6 %) respondents. The following respondents reported looking for baby bottle caries 144 (98.6 %), caries 125 (85.6 %), eruption sequence of teeth 118 (80.8 %), incisal wear (31 (21.2 %), malocclusion 73 (50.0 %) and cancer screening 28 (19.2 %).

Discussion:

Pediatricians are most likely to see infants and young children during the formative years of oral health care. The result of this survey reveal that most pediatricians do not refer to pediatric dentists until the age of 25-36 months (78.7 %) which means that the responsibility of providing information about the oral health care falls onto the pediatrician until that first visit. Current literature from the AAP including their web site for parents suggests that the first visit be around the age of 36 months or when all 20 baby teeth have come in. The web site also tells parents that the pediatrician will take care of the child's oral health care until then. (AAP guide to children's dental health) These survey results indicate that the majority of pediatricians in Connecticut are following those recommendations.

Oral hygiene is lifelong habit that begins during infancy. The AAPD and Bright futures recommend beginning teethbrushing at the appearance of the first tooth. The results show that the majority of pediatricians (50%) also recommend this for a starting point. The remaining pediatricians either begin before teeth appear by wiping the gums (20 %) or after several teeth appear (22.7 %) suggesting that pediatricians are in tune to the need for early intervention of teethbrushing. The AAPD also recommends use of a pea-sized amount of toothpaste on the brush. (AAPD, 40.) The majority of pediatricians were cognoscente of limiting the amount of toothpaste to none (20 %), just a dab (36 %) or pea size (34 %). Likewise, 83.3 % of respondents discussed the necessity to limit consumption of toothpaste by children. Since the complication of dental fluorosis is a concern, pediatricians appear aware with current guidelines to prevent unnecessary consumption of excessive fluoride.

The AAP has adopted the same guidelines as the AAPD for fluoride supplementation based on the patient's age and water levels of fluoride starting from 6 months of age. (AAPD, 40 and AAP, 777.) Of those responders 63.3 % prescribe doses based on these guidelines. Another 21.3 % base their doses on the patient's age suggesting that they are not following the current guidelines. Additionally, a sizable number of pediatricians asked families about well water, but then did not ask for an analysis for fluoride levels (33.1 %). Additionally these pediatricians that did not follow up with a water analysis were also more likely to dose fluoride prescriptions based on age (57.5 %) compared to age and fluoride level (37.5 %) These patients would then be at risk of enamel fluorosis. In fact it is possible to have well water with too much fluoride which compounds the problem of oversupplementation and lead to enamel fluorosis.

Oral Habits such as thumb sucking, digit sucking, and pacifier usage are common in childhood. Bright futures recommends intervening with the thumb/finger suckers at the age of 4 years old (Green, 138). The AAP's web site tells parents that thumb sucking should cause no permanent problems if not continued past the age of 5.(AAP guide to children's dental health.) The AAPD guidelines recommend talking to parents about oral habits during the first visit, but makes no specific recommendations about the discontinuation of the habit. Review of dental literature the orthodontic effect of non-nutritive sucking on developing dentition are minor in children under 3 years of age and active intervention should be encouraged at 4 years old. (Creighton, 1592.) Pediatricians had a wide distribution of answers with the greatest concentration around 12-24 mo. (52.1 %), suggesting that they are aware of early intervention in the habit. However the

remaining 48 % were spread between from birth to 5 years old indicating a split opinion amongst pediatricians.

Feeding and weaning: The AAPD recommends that infant should not be put to sleep with a bottle and discourages ad libitum nocturnal breastfeeding after the eruption of the first primary tooth. They also encourage infants to drink from a cup by the first birthday with weaning from the bottle by 12-14 months of age. ECC are discussed at the first dental visit. Consumption of juice from a bottle should be avoided. (AAPD, 18.) The AAP has similar recommendations in their web site with the exception of any recommendations for breast feeding at night and does not specify when to begin talking about ECC. The AAP policy statement for breast feeding recommends continuing these feeding until at least 12 months of age. (AAP, 1037) Most pediatrician in this survey began to discuss ECC at the 7-12 mo. visit and encouraged use of a cup around the same time which follows both the AAP and AAPD recommendations. They also encouraged weaning from the bottle around 13-18 mo. (57.3 %) which is slightly later than the AAPD and AAP guidelines. Interestingly, pediatricians tended to discuss ECC less frequently (82 %) with breastfed children than bottle-fed children (100 %) suggesting that pediatricians view ECC as less important in a breastfed child.

Dental Exam: The oral exam is part of the initial visit to the pediatric dentist. Of those survey responders, 96 % reported that they performed an oral exam at all WCC indicating recognition of the importance of this exam. The most common things they looked for were baby bottle caries (96 %), other caries (83.3 %), eruption sequence of teeth (78.7 %), and malocclusion (48.7 %). These are the basis of the pediatric oral exam that most pediatricians perform. The lower number of pediatricians that looked for

malocclusion is similar to the finding of Tsamtsouris who found that 40.9 % of pediatricians surveyed had no knowledge of what a crossbite was. (Tsamtsouris, 1995.) This is similar to the findings of Preisch who found that dental caries elicited more concern among the participants than eruption sequence or malocclusion problems. (Preisch,1995) Also of note were the 20 % who looked for incisal wear and the 18.7 % who looked for cancer, which suggest some uncertainty in the oral exam since these findings are generally seen in an older population.

Since the majority of pediatricians in Connecticut wait to refer patients to a pediatric dentist until the age of 25 to 36 months, it appears that they are assuming the responsibility of oral health care until that age. Currently, it appears that a limited number of pediatricians (32.7%) have read the AAPD guidelines, and those that have read the guidelines have minimal differences in their responses to the questionnaire. Since pediatricians appear to adhere to the recommendation of the AAP such as age of first visit, breast feeding and fluoride usage, an educational initiative by the AAP appears to be the most effective resource that pediatricians will consult to further oral health care knowledge. Other additional education may be available at continuing medical education and in medical school curriculum. The long term goal of universal knowledge in the areas of oral hygiene, fluoride usage, oral habits, feeding and weaning, and the dental exam would promote greater oral health in all children.

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