



# Establishing a Dental Home: What Determines Age at a Child's First Dental Visit?

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# Scope of Problem

## Significant rise in caries in children aged 2-5 over past 20 years

Table 5. Prevalence of dental caries in primary teeth (dft) among youths 2–11 years of age, by selected characteristics: United States, National Health and Nutrition Examination Survey, 1988–1994 and 1999–2004

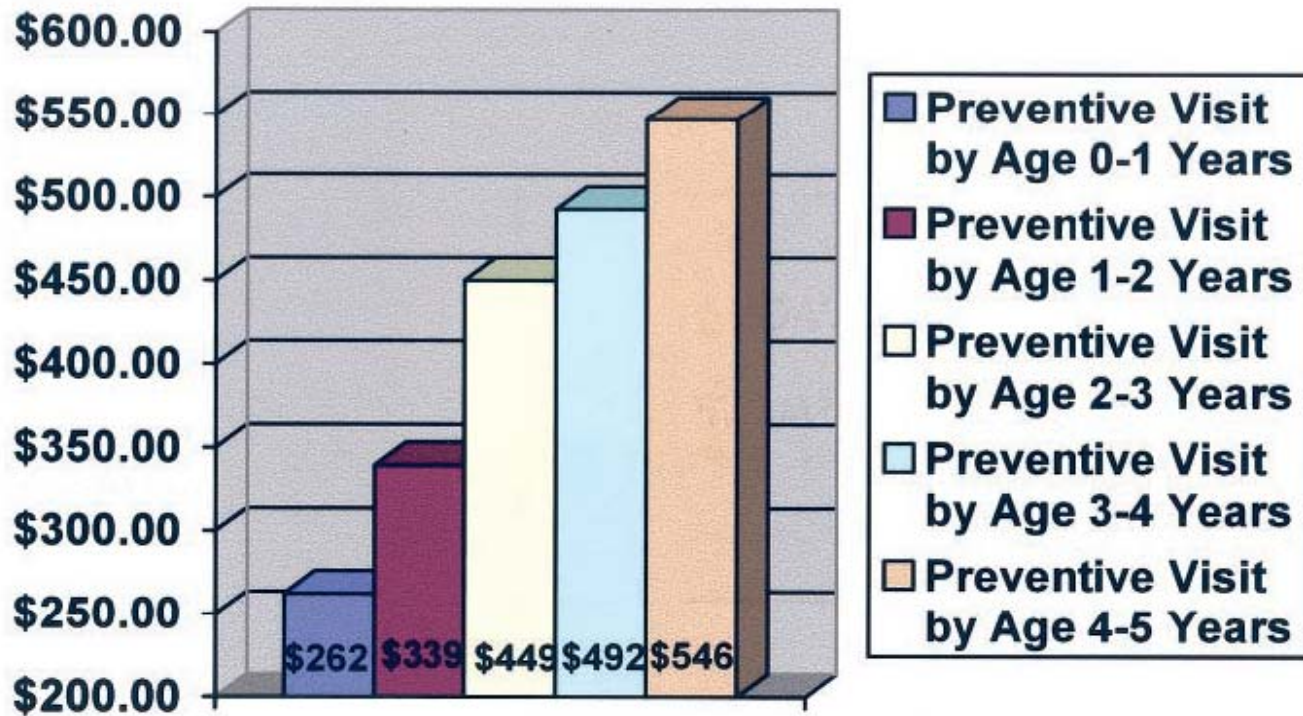
Characteristic	1988–1994		1999–2004		Difference
	Percent	Standard error	Percent	Standard error	
<b>Age</b>					
2–5 years	24.23	1.32	27.90	1.29	+3.67
6–11 years	49.90	1.79	51.17	1.96	1.27
<b>Sex</b>					
Male	39.50	1.73	44.43	1.90	4.92
Female	40.24	1.44	39.80	1.79	-0.44
<b>Race and ethnicity</b>					
White, non-Hispanic	35.84	1.46	38.56	1.90	2.72
Black, non-Hispanic	40.99	1.65	43.34	1.83	2.35
Mexican American	53.61	2.15	55.40	1.75	1.78
<b>Poverty status</b>					
Less than 100% FPL	51.18	2.02	54.33	2.47	3.15
100%–199% FPL	44.50	1.94	48.75	2.43	4.24
Greater than 200% FPL	31.10	1.74	32.30	1.62	1.20
Total	39.97	1.16	42.17	1.44	2.20

+ P-value < 0.05

NOTES: dft is the number of decayed and filled primary teeth and FPL is federal poverty threshold or level.

# Scope of Problem

Dental care cost increases substantially with increasing age of first preventive visit



# Scope of Problem

- Despite a strong scientific basis for early dental care establishment:
  - **5-11%** of children received dental care by 24 months of age
  - **2%** of children received dental care by 12 months of age
  - **0.25%** of Medicaid-enrolled children received dental care by 12 months of age

# Contemporary Strategy

- Visit by 12 months of age
- Dental home
- Target high risk groups

# Contemporary Strategy

- Visit by 12 months of age
  - Infectious transmission of cariogenic bacteria
    - Occurs with tooth eruption
    - Vertical transmission an established mode
  - Caries Risk Assessment
    - Environmental
    - Clinical
    - Biological
  - Anticipatory Guidance
    - OHI
    - Diet
    - Trauma
  - Prevention/Oral Health Promotion
    - Fluoride
    - Non-surgical caries management
    - Recall periodicity
  - Minimize long-term dental fear
- Dental Home
- Target high risk groups

# Contemporary Strategy

- Visit by age 1
- Dental Home
  - Definition: Ongoing relationship between the dentist and the patient, inclusive of all aspects of oral health care delivery in a comprehensive, continuously accessible, coordinated and family-centered way.
  - Dental home developed from medical home definition
  - Medical Home Outcomes
    - increased immunization rates<sup>1</sup>
    - decreased unnecessary hospitalizations in children<sup>2</sup>
- Target high risk groups

# Contemporary Strategy

- Visit by age 1
- Establish dental home
- Target high risk groups
  - American Academy of Pediatrics (AAP)<sup>1</sup>:
    - Caries risk assessment by 6 months of age
  - Early Head Start/Head Start performance standards<sup>2</sup>
    - Oral health assessment required within 90 days of entry into program
  - Women, Infants, Children (WIC)<sup>3</sup>
    - The identification of oral health problems is part of the nutrition risk assessment used by local agency WIC staff to establish eligibility for participation in the Program

# Study Purpose

- Provide in-depth information about caregivers' compliance with the recommendation to initiate dental care for their child by 12 months of age
  - Characteristics of caregivers and children
  - Caregivers' knowledge and opinions about the AAP/AAPD recommendations
  - Reasons for initiation of care
  - Obstacles encountered to establishing dental care
  - Indicators of caregivers' beliefs about dental disease
    - Perceived Seriousness of Dental Disease
    - Dental Fatalism
  - Caregiver Dental Anxiety
  - Caregiver utilization of dental services

# Study Design

- Retrospective Cohort Study
- Convenience Sample
  - Private pediatric dental specialty clinic
- Self-administered mail survey
  - Demographics
    - Child
    - Parent
  - Knowledge/Opinion of Professional Recommendation
  - Information about 1<sup>st</sup> visit
    - Age
    - Who recommended
    - Difficulties in accessing care
  - Caregiver Psychological Beliefs Regarding Dental Disease
    - Perceived Seriousness of Dental Disease (PSDD)
    - Dental Fatalism (DF)
  - Caregiver Dental Service Utilization
  - Caregiver Dental Phobia

# Analysis Plan

- Descriptive
- Bivariate Analysis
  - Categorical x Categorical: Chi-square
  - Continuous x Categorical: Analysis of Variance (ANOVA)
- Multivariate Analysis
  - Logistic Regression
- 0.05 significance level

# Results - Descriptive

- 342 respondents (64% response)
- Child
  - 8.5% public insurance, 77.5 % Private, 13.2% uninsured
  - 68.6% Caucasian, 10.9% Asian, 4.1% Hispanic, 1.5% African-American, 14.9% Mixed/Other
  - 51.6% Male
  - 2.3% Special Health Care Needs
  - 52.5% with Older Sibling(s)
- Caregiver
  - Age
    - <30: 5.6%
    - 30-34: 24.6%
    - 35-40: 45.0%
    - ≥40: 24.6%
  - Education
    - <4-year college degree: 23.1%
    - 4-year college degree: 76.9%
    - Graduate degree: 33.6%
  - Marital Status: 92.7% married

# Results - Descriptive

- Knowledge of AAPD recommendation
  - 14.4% reported current recommendation
  - 13.8% didn't know
  - 33.8% reported by age 2
  - 36.8% reported by age 3
- Opinion of when care should begin
  - 9.1% felt by 12 months of age best
  - 42.6% felt by age 2 would be best
  - 42.4% felt by age 3 would be best

# Results - Descriptive

- First visit age group ratio

- by 12 months: 14.3%
  - by 24 months: 33.6%
  - by 36 months: 34.5%
  - by 48 months: 16.4%
  - by 60 months: 1.2%
- } 47.9%

- Mean Age at first visit

- 27.0 months

- Reason for 1<sup>st</sup> visit

- Initial Care: 84.1%
- Trauma: 7.6%
- Cavity/Pain/Other Problem: 8.3%

- Difficulty Initiating Care

- No: 90.9%
- Yes: 9.1%
  - Reasons: dentist didn't take insurance (34.5% of "yes"); Didn't see children under 3/Wanted to wait until child older (24.1%); Other, unspecified (31.0%)

# Results - Variables

- Dependent variable: Visit by 12 months vs. Visit after 12 months
- Independent variables
  - Child Demographics
    - Insurance Coverage
    - Race/ Ethnicity
    - Special Health Care Needs
    - Older siblings
  - Caregiver Demographics
    - Education
    - Age
    - Marital status
    - Timing of last dental visit
    - Reason for last dental visit
  - Caregiver Knowledge of AAPD Recommendation
  - Caregiver Behavioral Variables
    - Perceived Seriousness of Dental Disease
    - Dental Fatalism
    - Caregiver Dental Anxiety

# Results - Bivariable Analysis

Child's 1 <sup>st</sup> visit age, by individual variables			
Variable	≤12 months % (n)	>12 months % (n)	p-value
Caregiver Education (n=342)			
<College (n=79)	25.3 (20)	74.7 (59)	0.001
≥College (n=263)	11.0 (29)	89.0 (234)	
Marital Status (n=342)			
Not Married (n=25)	28.0 (7)	72.0 (18)	0.043
Married (n=317)	13.2 (42)	86.8 (275)	
Caregiver Last Dental Visit (n=341)			
<6 months ago (n=235)	11.5 (27)	88.5 (208)	0.026
>6 months ago (n=107)	20.6 (22)	79.4 (85)	
Child Insurance (n=339)			
Public (n=29)	27.6 (8)	74.2 (21)	0.030
Private / None (n=310)	12.9 (40)	87.1 (270)	
Recommendation Knowledge (n=340)			
Knew (n=49)	32.7 (16)	67.3 (33)	<0.001
Didn't know (n=291)	11.3 (33)	88.7 (258)	

# Results - Multivariable

Logistic Regression Results for Dental Visit by 12 Months of Age				
Variable	Category	Adjusted Odds Ratio	95% CI	p-value
Caregiver Education	<College	2.27	1.07-4.81	0.033
	≥College	1.0		
Marital Status	Not Married	1.32	0.45-3.86	0.62
	Married	1.0		
Caregiver Last Dental Visit	<6 months ago	0.62	0.31-1.23	0.17
	>6 months ago	1.0		
Child Insurance	Public	1.14	0.39-3.32	0.81
	Private / None	1.0		
Recommendation Knowledge	Knew	3.75	1.82-7.76	<0.001
	Didn't know	1.0		

# Discussion

- 14.3% visited according to AAPD guideline
  - Higher than any published U.S. data to date
  - Specialty vs. General dental practice?
- 48% visited by age 2
  - Potential confusion about “Age 1”
- Average age: 27 months
  - Consistent with past recommendation
  - Consistent with AAP Low-Risk recommendation
- Knowing the AAPD recommendation increased compliance
  - 33% vs. 15%
  - 2/3 of those that reported knowing the guidelines were *not able* to follow them
  - Only 14.4% of respondents recall the recommendation being by 12 months
- Medical providers: most likely outside source of recommendation
  - MD: 37%
  - DDS: 17%
  - None: 35%
  - Other: 11%

# Discussion

- Selected behavioral characteristics (PSDD, DF, and CDA) were unrelated to age at dental care establishment
  - These characteristics are related to other dental behaviors and outcomes
    - Child caries status
    - Toothbrushing
    - Diet control
  - Is care initiation/utilization a different behavior than home care behaviors?
    - “Self-regulated” vs. “imposed”

# Discussion

## Key Finding:

- “High risk household” characteristics were associated with early dental care establishment
  - Caregiver education
    - Low parental education associated with caries<sup>1</sup>
  - Marital status
    - Single:
      - » Lower education<sup>2</sup>
      - » Below 200% poverty level<sup>2</sup>
  - Insurance coverage
    - Proxy for income
    - Low income related to high caries<sup>3</sup>

# Limitations

- **Generalizability**
  - Small sample from local community
  - Pediatric specialty dental practice
- **Retrospective (recall bias)**
- **Self-administered (response effect)**
  - Exact wording, question order, answer category order, increased rate of missing data, non-compliant participation

# Conclusions

- A higher percentage of respondents reported establishing dental care for their children by 12 months of age than previously published reports.
- Dental home establishment according to the AAPD guidelines was still low, even in a highly educated, well-insured sample
- The average age at first dental visit was more than twice the AAPD guidelines
- Medical providers were the most likely recommendation source for early establishment of a dental home
- High caries risk households were more likely to establish early dental care for their child
- Outcomes research is needed to further strengthen the current dental home establishment recommendation

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# Questions?

