

Primary Care Physicians' Role in Promoting Children's Oral Health

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Despite the fact that dental caries are preventable with age-appropriate and effective caries management through periodic dental visits, many children experience dental decay. Based on The National Health and Nutrition Examination Survey, more than a quarter of US children age 2 to 5 years and more than half of the children age 6 to 8 years had dental caries in the period of 1999–2004.¹ The 2007–08 Rhode Island Third Grade Oral Health Survey reported that about half of third graders had experienced dental decay.²

Affordable dental insurance that covers preventive and restorative dental services increases the likelihood of obtaining dental care^{3,4} and is important to provide prevention, education, and early identification and treatment of oral diseases. In addition, many states including Rhode Island recognize primary care medical providers as key resources to improve access to preventive oral health services for children.

The objectives of this report are to (a) document the percentage of Rhode Island children who received preventive oral health care within a year, (b) assess the association of dental insurance with children's preventive dental care, and (c) describe the importance of RIte Care/Medicaid reimbursement to primary care providers for oral health services.

METHODS

The data used for this analysis were obtained from the 2008 Rhode Island Behavioral Risk Factor Surveillance System (BRFSS),⁵ an ongoing telephone health interview survey of non-institutionalized US adults age 18 years or older. In 2008, Rhode Island expanded its data collection to include 1,315 children under age 18. For this age group, parents were asked whether their child received preventive dental care in the past 12 months (having visited a dentist or dental hygienist for checkup or cleaning), whether the child had dental insurance, and the

parents' perceived oral health status of their child. Since the preventive dental visit question was asked for children age 1 year and older, 1,263 children age 1 to 17 years were included in the analysis. The outcome variable, receipt of preventive dental care in the past 12 months, was examined along with the child's sociodemographic and dental insurance variables.

Data were weighted to the probability of selection and adjusted to reflect the age, gender, and race/ethnicity of Rhode Island's child population. Bivariate analyses using the chi-square test were done to identify any significant differences between the various groups, with respect to children's receipt of pre-

Table 1. Rhode Island Children Age 1–17 Years Old Who Reportedly Received a Preventive Dental Care (Dental Checkup or Cleaning) in the Past 12 Months, 2008 BRFSS

Variable Category	Sample size*	Weighted % (95% CI†)	P-value
All	1,263	81.1 (78.5–83.8)	–
Gender			
Male	596	81.5 (77.9–85.0)	NS
Female	517	80.8 (77.0–84.7)	
Age (Years)			
1–5	284	48.8 (42.3–55.4)	<.0001
6–11	354	95.5 (93.4–97.6)	
12–17	475	93.9 (91.6–96.1)	
Race/Ethnicity			
Non-Hispanic White	815	84.1 (81.3–87.0)	0.0001
Other	278	71.9 (65.7–78.2)	
Parent's education			
≤ High School	348	77.6 (72.5–82.7)	NS
> High School	764	82.7 (79.7–85.7)	
Family income			
≤ \$35,000	252	72.0 (65.4–78.7)	0.0004
> \$35,000	773	83.8 (80.9–86.7)	
Dental coverage			
Yes	987	82.7 (80.0–85.4)	0.0002
No	116	66.3 (56.6–76.0)	

* Unweighted sample sizes for each category may not add up to 1,263 because of missing and excluded data (responses of "don't know," "not sure," or refused).

† CI = confidence interval

NS = not significant at P=0.05

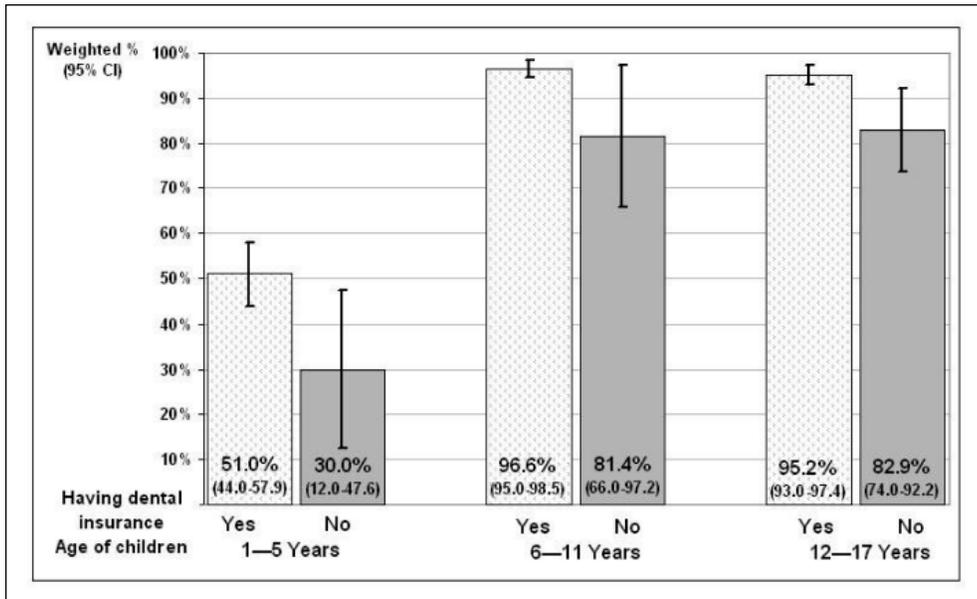


Figure 1. Preventative Dental Visits among RI Children ages 1-17 by Dental Insurance Coverage and Age Group. Source: BRFSS 2008.

ventive dental care in the past year. The statistical significance was tested at $P < 0.05$. SAS survey procedures were used for the analyses to account for the complex sampling design.

RESULTS

Overall, 81.1% (95% CI=78.5-83.8) of children age 1-17 years reportedly had a preventive dental visit within the previous 12 months. (Table 1) Only half of children age 1-5 years had a preventive visit in the past year. This percentage was the lowest of all children's age groups. (Table 1: 48.8% *vs.* 95.5% for children age 6-11 years, and 93.9% for children age 12-17 years) Disparities in the receipt of preventive dental care by child's race/ethnicity, family income, and dental insurance status were also observed. (Table 1)

The authors examined whether the low level of preventive dental visits among young children was associated with dental insurance status. Among the different age groups, however, no significant differences in children's dental insurance coverage were observed (89.8% [CI=86.1-93.5], 92.3% [CI=89.2-95.4], and 87.9% [CI=85.1-90.7] for children age 1-5 years, 6-11 years, and 12-17 years, respectively ($P=0.16$)).

Figure 1 summarizes the prevalence of preventive dental visits among different age group of children by dental insurance status. Young children age 1-5 years were the least likely to receive preventive dental care; half of the children did not obtain any preventive dental care even though they had dental insurance coverage. No significant differences were observed in the percentages of preventive dental visits by dental insurance status for children age 1-5 years and 6-11 years, mostly because only small number of children did not have dental insurance.

DISCUSSION

Opportunities to Improve Young Children's Access to Oral Health Services

In 2008, most Rhode Island children, regardless of age,

reportedly had dental insurance through private insurers or publicly funded programs (RIte Smiles or Medicaid fee-for-service), even though the rates of dental coverage were still lower than medical coverage for all age groups of children. (90% *vs.* 97%: statistics from the authors' separate analyses on dental and medical coverage using the same data source in this study).

This study's findings suggest that having dental insurance did not effectively facilitate access to preventive oral health services, particularly for young children age 1-5 years. Multiple reasons plausibly explain why so many children

have not benefited from an early preventive oral health care. Many RI parents may not be aware of the need to access early oral health services and the recommended age for child's first dental visit. In addition, barriers can be associated with Medicaid program funding and administration, the oral health workforce distribution, and their ability to care for very young children.

The American Academy of Pediatric Dentistry, the American Academy of Pediatrics, the American Dental Association, and the American Association of Public Health Dentistry all recommend establishing a dental home and initiating preventive interventions by age 1 year.^{5,6,7} Especially for the 1-5 years olds, because of the low level of dental visits even with dental insurance, it is imperative that pediatric primary care providers promote children's oral health.

In RI, the pediatric well-child care setting is ideal to introduce the concept of a dental home to young children and initiate dental referrals at age 1 year for a number of reasons:

1. Half of young children do not visit a dentist until after 5 years of age,
2. Many children from low-income families are unable to access dental services, and
3. Pediatricians and pediatric primary care providers (family physicians, physician assistants, nurse practitioners, etc) have already established medical homes for this vulnerable population.

The RI Department of Health Oral Health Program acknowledges the important role that pediatric primary care providers can assume in promoting children's oral health. Integration of the pediatric well-child visit with oral disease risk assessment and the referral process to a dentist office for young children has been successful in other states and studies.^{8,9,10}

To facilitate this integration, RI primary care providers can receive RIte Care/Medicaid reimbursement for preventive oral health services such as risk assessment and fluoride varnish application that are provided during well-child care visits.

The integration of oral health into overall health is vital. Through early intervention, pediatric health care providers are positioned to prevent serious health consequences that can result from oral disease. Oral health risk assessment, anticipatory guidance, oral health screenings, timely referral to a dental home, and the provision of preventive services, such as fluoride varnish, can result in successful health outcomes in children.

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