



Availability of Dental Appointments for Young Children in King County, Washington: Implications for Access to Care

Richard G. Smith, BA¹ Charlotte W. Lewis, MD, MPH²

Abstract

Purpose: The purpose of this study was to determine the proportion of dental offices in King County willing to provide a new appointment to young children and young children on Medicaid.

Methods: A simulated parent phone call was made to 508 randomly chosen dental offices in King County. Of these, 291 offices provided preventive dental care to children. Data were collected on: (1) youngest age seen (options ranged from less than 1 to older than 5 years); (2) whether Medicaid was accepted; and (3) time to first available appointment.

Results: In King County, more than 99% of dental offices providing care to children would see new patients 5 years of age or older, but only 15% of these offices would accept 5-year-olds on Medicaid. Nine percent of dental offices accepted patients younger than 1 for a new preventive visit, but just 3% accepted Medicaid-insured children in this age group.

Conclusions: Adhering to recommendations for early initiation of dental care is difficult, given the limited availability of dental appointments for young and Medicaid-insured children. (*Pediatr Dent* 2005;27:207-211)

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Dental caries is the most prevalent childhood disease in the United States and can lead to adverse health and social sequelae.¹ Professional dental care is considered an important component in the prevention of dental caries in young children. The American Academy of Pediatric Dentistry (AAPD) and American Dental Association (ADA) recommend that children see a dentist by 12 months of age.^{2,3} Both general and pediatric dentists provide preventive dental care to US children, although general dentists vastly outnumber pediatric dentists—who account for fewer than 3% of dentists nationally.

Dental caries affects a disproportionate number of poor children.¹ It is estimated that low-income preschoolers are 5 times more likely to have caries as their higher-income counterparts.⁴ Poor children are also less likely to receive professional dental care.⁵ Disparities in dental visits have been attributed to various factors, including difficulties finding a provider who accepts Medicaid, transportation limitations, and an incomplete understanding by families

of the importance of dental care.⁶ While dentists' participation in Medicaid is known to be low in many states,⁷ the degree that this imposes difficulties on families seeking dental care for their children is unclear. To better understand this, the authors sought to determine the proportion of dental offices in King County, Wash that would provide a new appointment to young children of various ages, with and without Medicaid, using a simulated parent phoning to make an appointment.

Methods

Setting

With its county seat in Seattle, King County is the most populous county in Washington State with 1.74 million residents. It encompasses 2,162 square miles of land and includes urban, suburban, and rural areas within its borders.⁸

Procedures

This study was approved by the Human Subjects Committee of the University of Washington, Seattle, Wash. Using the publicly available Seattle King County Dental Society (SKCDS) list of members, which includes 85% of all dentists and 92% of pediatric dentists in King County, the authors identified 1,088 dental offices in the county. The

¹Mr. Smith is a medical student and ²Dr. Lewis is assistant professor, Division of General Pediatrics, Department of Pediatrics and Child Health Institute, University of Washington, Seattle, Wash. Correspond with Dr. Lewis at cwlewis@u.washington.edu

authors chose the SKCDS as a source of potential dental appointments in the community since families are often referred to the local dental society to find a dentist. The pediatric dentistry specialty was not listed in the directory, but an inquiry was made at the time of the initial phone call about whether the office provided preventive dental care to children.

Entries without an address or phone number and entries outside King County were excluded, and multiple entries with the same address and phone number were considered a single office. Addresses were used to stratify offices to 1 of 5 geographic regions within King County. Within each regional stratum, the authors calculated the minimum number of successful calls (sample size) necessary to guarantee an 8% or less confidence interval at a 95% confidence level (correcting for finite population size) for the percentage of offices that would accept pediatric patients, using the following equation:

$$\text{sample size} = \frac{[P*(1-P)*Z^2]*N}{[(P*(1-P)*(Z^2))+N]}$$

where: Z (z score)=1.96 for 95% confidence level

P = .5 (*a priori* estimate of proportion of dental office caring for children)

CI =0.08 (confidence interval, expressed as decimal)

N=number of dental offices within the subregion

The authors then randomly selected dental offices to be called, using a random number generator to order offices within a region. They continued calling offices until the target number of offices (sample size) providing dental care for children within each region had been reached.

One investigator made all of the phone calls to dental offices during March 2004. All phone calls were made on a weekday during business hours. One attempt was made to call each office. When an office could not be reached or did not provide preventive dental care to children, it was excluded from the list. All identifying data about the office were deleted from the database immediately after the phone call, whether contact was made or not. To avoid inadvertently identifying an office within a small geographic region, the practice type (general or pediatric dentistry) was not retained after the call, at the request of the human subjects' committee.

When an eligible office was reached, information was collected using a standard script that employed a scenario whereby a "parent" with 2 young children (3.5 years old and a newborn) had recently read a brochure saying that children should be seen for their first dental visit by 1 year of age. They asked:

1. Is the office accepting new patients? If so, what is the youngest age patient the dental office accepts for a new preventive dental visit?

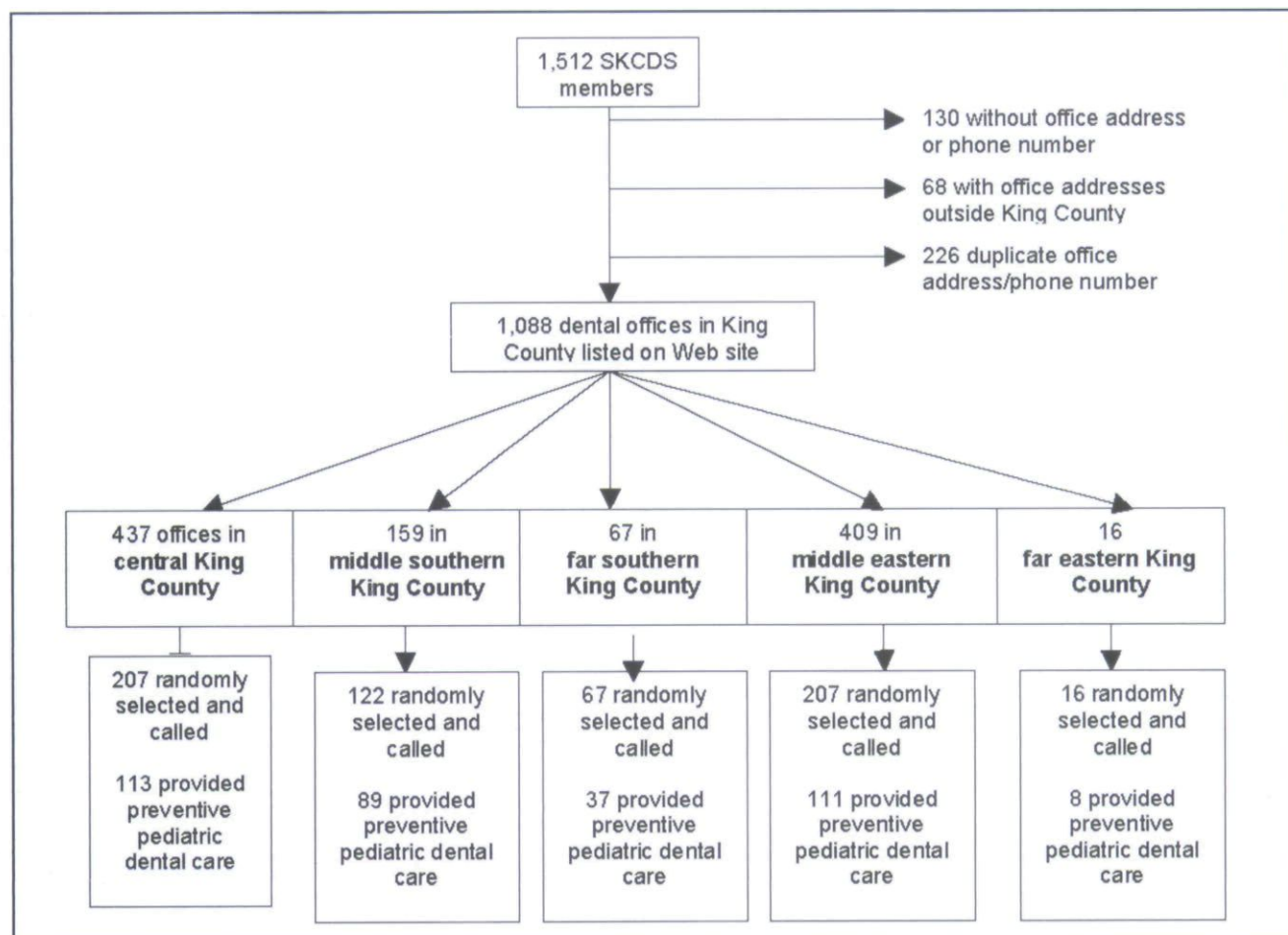


Figure 1. Study design and sampling scheme.

2. When is the next available appointment (number of full weeks from date of interview)?

If asked about insurance type, the parent replied they would pay with cash. The parent later said that their family circumstances would be changing and that the family may become Medicaid eligible soon. The parent then inquired:

3. Is the dental office accepting new Medicaid child patients?

The children in question were described as healthy and without any dental concerns. At the call's end, the parent said they would phone back if they wanted an appointment.

Data were tabulated based on responses to the 3 aforementioned simulated questions asked by the parent.

Analysis

For each patient age category, the percentage of sampled dental offices accepting new patients and new Medicaid patients was determined. By multiplying the fraction of sampled offices within each subregion that would see children by the number of dental offices in the subregion, and then summing these, the total number of King County dental offices accepting children was then estimated. Precision of this estimate (ie, confidence interval) was then calculated using a variation on the previous equation. Census 2000 data⁹ and Medicaid enrollment data for King County for 2000-01 were used to determine the number of all children ($N=105,321$) and Medicaid beneficiaries ($N=49,961$) younger than 5 years old for calculation of potential new caseloads per dental office statistical analyses were performed with Stata, version 8.0 (Stata Corporation, College Station, Texas).

The authors used a sample test of proportions to detect significant differences in percentages of offices accepting new patients vs new Medicaid-insured patients within each age category. For differences in mean waiting times for appointments, t tests were used.

Table 1. Characteristics of King County Dental Offices Surveyed

Dental offices in SKCDS	N=1,088
Randomly selected offices	507
Offices providing pediatric preventive dental care	291 (57%)
Estimated countywide offices providing pediatric preventive dental care ($\pm 4\%$)	626 ± 25
Children <age 5 in King County	105,321
Medicaid beneficiaries <age 5 in King County	49,961 (47%)
Children <age 5 per dental office in King County	168
Medicaid beneficiaries <age 5 per dental office in King County	80

Results

Overall availability of dental appointments

Of the 508 dental offices contacted, 291 indicated they provide preventive dental care to children of any age. Using the sampling strategy and results from each subregion in King County, the authors estimated 626 (± 25) dental offices in the county offered preventive dental care to children in King County. This resulted in a potential caseload ratio of 168 children under 5 years old per office or 80 Medicaid-insured children under 5 years old per dental office, if all participated equally in providing dental care to young children (Table 1).

The number of offices accepting new young children decreased in proportion to the decreasing age of the child for whom an appointment was requested. While more than 99% of dental offices would accept a new patient of at least 5 years of age, only 9% of offices accepted new patients younger than 1 (Figure 2).

Appointment availability for Medicaid beneficiaries

The proportion of offices willing to see a young child on Medicaid also diminished as the child's age decreased; significantly fewer offices, however, would accept Medicaid patients for preventive dental care across each age category. Only 15% of offices would schedule a preventive visit for a Medicaid-insured child who was at least 5 years old, and only 3% of offices would see a Medicaid-insured child younger than 1 (Figure 2).

Time to appointment

The average wait time for an appointment within each subregion varied between 0.8 and 1.5 weeks, on average. There was no statistical difference in the wait time between offices that did and did not accept Medicaid patients or by youngest age patient accepted. The wait for an appointment never

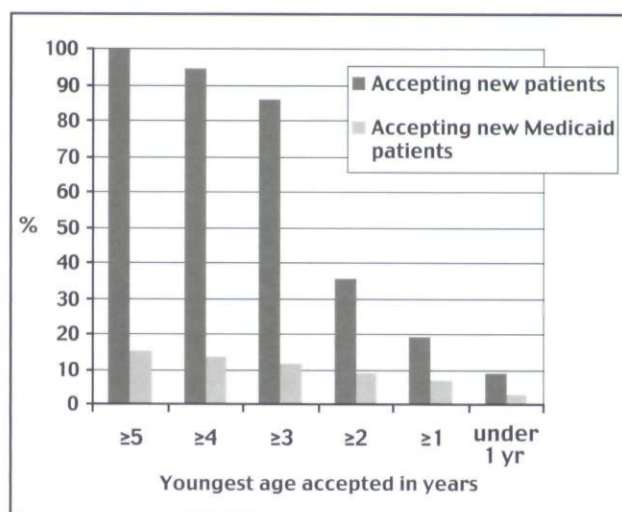


Figure 2. Percentage of dental offices in King County accepting new child patients, by age and insurance type. All comparisons between percentage of office accepting new patients and those accepting new Medicaid patients were significantly different, $P<.001$, by test of proportions.

exceeded 2.3 weeks at any of the offices for any age or insurance category or combination thereof.

Discussion

The results indicate that it could be difficult for very young and Medicaid-insured children in King County to obtain a dental appointment for preventive dental care. The fact that many more dental offices would accept a 3-year-old compared to a 1- or 2-year-old is consistent with other reports indicating that the majority of dentists first see children at 3 to 4 years of age.¹⁰ This differs from AAPD,³ ADA,² and, more recently, the American Academy of Pediatrics¹¹ (AAP), which each recommend early initiation of dental care and establishment of a dental home, ideally at or before 12 months of age. To address these recommendations, efforts have been made to educate families about the importance of early professional dental care¹² and to encourage primary care health providers to initiate early dental referrals.¹¹

This study's findings demonstrate that it would be challenging for many families of young children in King County to adhere to these recommendations, given the current practice patterns of most dental offices. Previous studies have attempted to elucidate reasons why limited numbers of dentists see very young children. Lack of exposure to infants and toddlers in dental school may impact a general dentist's comfort in caring for young children in his/her practice.^{10,13} Some dentists, however, are unaware of or do not agree with recommendations for initiation of dental care for all children by 12 months of age.^{10,14}

In this study, only 15% of offices would accept a new child patient 5 years of age or older on Medicaid and fewer would accept a younger child. This study's findings confirm that, at least in King County, children at greatest risk for Early Childhood Caries (young, low-income children) are those least able to obtain needed preventive dental services. This is despite the fact that dental care is a mandated Medicaid benefit for children under EPSDT (Early and Periodic Screening, Diagnosis, and Treatment Program).¹⁵ The results reinforce the validity of families' anecdotes about difficulties finding dentists who accept Medicaid.

Studies have identified 3 recurring concerns of dentists about Medicaid:^{7,16-18}

1. limited reimbursement;
2. administrative burden;
3. patient compliance with oral hygiene and appointments.

Clearly, system-wide reform is needed to address the limited dental appointment availability problem for Medicaid-insured children.

When a dental appointment could be made, the average waiting time until the appointment was relatively short (less than 2.3 weeks), regardless of age or Medicaid status. This short wait implies that capacity may exist within the system to increase the number of children seen, including younger and Medicaid-insured children. Indeed, each den-

tal office providing pediatric care would need to see an average per month of 6.7 Medicaid patients under 5 years old to provide yearly dental access to all Medicaid beneficiaries in King County in this age group.

Certain limitations to this study bear mentioning. Dentists who do not belong to the SKCDS may be different than those reached in this study. The authors felt justified in using the SKCDS as a source of potential dental appointments since families are often advised to contact their local dental society when they need to find a dentist. The authors did not make an effort to differentiate between dentists working in public health vs private practice settings. Dentists who work in safety net and other public health clinics, however, are well represented in the SKCDS. To protect the anonymity of dental offices within small geographic areas, the authors were not permitted by the University of Washington Human Subjects Committee to collect identifying information, including whether a pediatric or general dentistry office had been reached.

Although pediatric dentists are relatively over-represented in the SKCDS, had the authors been able to stratify results on dental office type, they likely would have found differences in the youngest age patient accepted and perhaps in Medicaid acceptance rates by specialty. Nevertheless, the realities of dental workforce capacity would require that both general and pediatric dentists provide dental care for young children to allow a first dental visit for all children to occur by 12 months of age. Moreover, within parts of King County, there are currently no dentists who will see Medicaid patients who are even 5 years of age or older.

King County may not be representative of other areas in terms of availability of dental care. The authors suspect, however, that the situation for young and Medicaid-insured children may be relatively better in King County than in other parts of the state and the country. The authors' rationale is that King County is a metropolitan region with twice the national average of per capita dentists¹⁹ and that the state of Washington has Medicaid payment rates relative to average regional dental fees that are higher than in 18 other states.⁷

Finally, the simulated parent making the calls represented an idealized version of a parent seeking dental care, as he was college educated, English speaking, and inquired about the next available appointment regardless of the hour or day of the week. Other families may encounter additional barriers to accessing dental care under more real-life circumstances.

Conclusions

Based on this study's results, the following conclusions can be drawn:

1. Relatively few dental offices in King County are willing to provide dental appointments to new patients younger than 3 or to new Medicaid-insured patients 5 years of age or younger.

2. Limited availability of dental appointments for young Medicaid-insured children would make it difficult for high-risk children to benefit from preventive dental care.
3. When an appointment could be made, the length of time until the appointment did not exceed 2.3 weeks.
4. If findings from this study are found to be applicable in other areas, certain implications should be considered, including:
 - a. Professional societies' recommendations on early initiation of dental care and efforts to educate families and primary care health providers on the importance of preventive dental care must be accompanied by efforts to expand the availability of dental appointments for young children. This is particularly needed for low-income children at highest risk for early childhood caries.
 - b. Efforts to increase both the number of available dental appointments for very young and Medicaid-insured children and, presumably, the number of dentists who will see these patients will likely require significant reform directed at dental education, workforce capacity, and the Medicaid system itself.

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