Scientific Article

Pediatric and general dentists' participation in the North Carolina Medicaid program: Trends from 1986 to 1992

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Abstract

The purpose of this study was to report trends in dentists' participation in the North Carolina Medicaid program. Medicaid claims files for dental users younger than age 21 were analyzed for seven fiscal years (FY) from 1986 to 1992. Over the study period, the number of pediatric dentists filing any Medicaid claims remained constant but the number of participating general dentists decreased slightly. Intensity of participation, as measured by mean annual reimbursement and mean number of children treated per dentist, increased from FY 89 to 92 for both provider groups. The mean value of services provided for each dental user also increased slightly during the same period. The data revealed that over time pediatric dentists treated a larger proportion of the youngest Medicaid dental users. (Pediatr Dent 19:114–17, 1997)

Epidemiological data have documented dramatic reductions in caries prevalence in U.S. children.[1,2] Yet dental caries is one of the most prevalent diseases, and most children are likely to experience some dental caries. Certain groups, including children of low socioeconomic status (SES), are at greater risk for dental caries and experience high disease levels.[3,4]

The Early and Periodic Screening, Diagnosis and Treatment Program (EPSDT)[5] was implemented to improve access to office-based primary care for Medicaid-eligible individuals younger than age 21. Federal law mandates that states provide screening for EPSDT-eligible children periodically for a number of conditions, including dental diseases. Additionally, each child must be provided access to treatment for diseases found during screening. Dental care for the adult Medicaid population is optional under federal law.

The ability of Medicaid programs to improve access to dental care in the private sector depends on the willingness of dentists to treat Medicaid-eligible children. Previous studies have noted dentists' frustration with low Medicaid reimbursement rates and administrative burdens.[6–9] Anecdotal reports indicate that dentists' participation in Medicaid has been decreasing, but no published reports have documented trends in participation by pediatric and general dentists.

An ongoing focus of our research is to describe changes in access to dental care for Medicaid-eligible children by analyzing changes in provider participation in the North Carolina (NC) Medicaid program. Although our previous study[9] documented several aspects of dentists' participation, it was based on claims for all Medicaid dental users, not just children. In addition, data were limited to one fiscal year (FY), precluding any trend analysis.

The purpose of this study was to describe trends in participation of pediatric dentists and general dentists in the NC Medicaid program by analyzing dental claims for EPSDT-eligible children for the period FY 86 to 92.

Materials and methods

NC Medicaid dental claims for all EPSDT dental users were obtained from the NC Division of Medical Assistance (DMA), the state agency charged with operating the program. Medicaid enrollment files provided demographic information (e.g., race and gender) not included in the claims files. These data sets were merged by unique identification number for the enrollees.

The DMA maintains provider type and location identified by a Medicaid provider ID number, which can be linked directly to claims files. Additional demographic information for NC dentists was obtained from a licensure file maintained for the NC State Board of Dental Examiners by the North Carolina Health Professions Data System (NCHPDS). Because no common ID number was available to link these data with Medicaid dental claims, the data sets were merged using the provider's last name, first name and practice location.

The final data set consisted of person-level files for each FY containing complete Medicaid dental treatment records for EPSDT dental users from FY 86 to 92. Data were edited to eliminate duplicate claims and correct discrepancies in procedure-specific and tooth-specific information. The entire data set comprised records of approximately two million dental procedures provided to more than 60,000 dental users per year by nearly 1300 dentists.

Descriptive measures of provider participation for each FY included:

1. Number of dentists submitting at least one Medicaid claim

2. Mean number of dental users treated per dentist
3. Mean reimbursement per dentist
4. Mean value of services provided per dental user
5. Percent of providers participating above a fixed reimbursement threshold.

The rates at which initial and emergency examinations were provided in each FY were used as indicators of the nature of care provided to Medicaid-eligible children. Relative access to care for younger children (ages 0–4 and 5–9 years) was reported as the mean number of dental users in each subgroup treated per dentist. Descriptive statistics were calculated using SAS for mainframe and personal computers (SAS Institute, Cary, NC).

Results

Table 1 list the number of pediatric and general dentists who filed at least one Medicaid claim during a given FY. Participation by pediatric dentists remained stable over the study period, but general dentists' participation declined. The fewest general dentists submitted claims in FY 91, which represented a 9% decrease when compared to FY 86.

Table 2 lists the number and percentage of dentists who provided more than $15,000 in Medicaid dental services in a given FY. During the seven-year study period, the percentages of pediatric and general dentists exceeding this threshold rose by 16.2% and 9.8%, respectively.

Fig 1 illustrates trends in participation intensity for both provider groups. Pediatric dentists treated four to five times more Medicaid dental users and received six to seven times larger Medicaid reimbursements in each FY. From FY 86 to 92, mean annual reimbursement more than doubled for both pediatric and general dentists. Increased reimbursement is accounted for primarily by a two-fold increase in mean number of dental users treated per dentist. The mean value of Medicaid dental services per child provided by pediatric dentists rose 23% (from $110 to $135 per dental user) and the value of services provided by general dentists rose 13% (from $93 to $104 per dental user) during the FY 86–92 period.

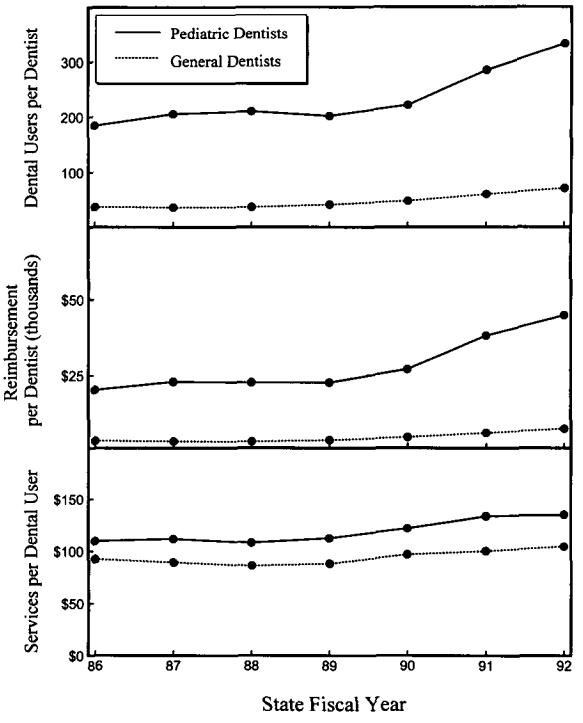

Fig 1. Mean annual number of Medicaid dental users (top), mean annual reimbursement (middle), and mean value of services per dental user (bottom) for NC pediatric and general dentists.

Fig 2 depicts average rates at which pediatric and general dentists provided initial and emergency examinations. Rates were calculated as the number of examinations per 100 dental users treated by each provider group. The average rate of initial examinations remained relatively constant over the study period, but the rate of emergency examinations increased markedly. The emergency examination rate for general dentists rose by 60% from an average rate of 10.4 exams per 100 dental users in FY 86 to an average of 17.0 exams per 100 dental users for FY 92. The rate for pediatric dentists increased by nearly 50% from 9.3 exams per 100 dental users to 13.7 exams per 100 dental users over the FY 86–92 period. Annually, general dentists provided about 34% more initial examinations and 18% more emergency examinations to their Medicaid-eligible child patients than did pediatric dentists.

Fig 3 illustrates trends in treatment of the youngest Medicaid dental users. In FY 92, general dentists treated an average of 13 Medicaid children in the 0–4 year age group and 26 in the 5–9 year age group. These numbers are more than double the values for FY 86. Pediatric dentists treated approximately 125 children in each age group in FY 92. Compared to

TABLE 1. TRENDS IN DENTISTS' PARTICIPATION IN THE NC MEDICAID PROGRAM*

State Fiscal Year†	Pediatric Dentists‡	General Dentists
1986	46	1148
1987	48	1159
1988	47	1104
1989	48	1066
1990	48	1051
1991	46	1044
1992	47	1089

* Number of providers filing at least one Medicaid claim in a given FY.
† State Fiscal Year July 1 to June 30.
‡ Includes providers who are dual trained in both pediatric dentistry and orthodontics.

TABLE 2. MEDICAID PARTICIPATION ABOVE A $15,000 ANNUAL LEVEL*, N (%)

State Fiscal Year†	Pediatric Dentists‡	General Dentists
1986	20 (43.4)	48 (4.2)
1987	21 (43.8)	49 (4.2)
1988	22 (46.8)	39 (3.5)
1989	22 (45.8)	56 (5.3)
1990	22 (45.8)	88 (8.4)
1991	25 (54.3)	121 (11.6)
1992	28 (59.6)	152 (14.0)

* Threshold for active Medicaid participation set at $15,000 annual reimbursement.
† State Fiscal Year July 1 to June 30.
‡ Includes providers who are dual trained in both pediatric dentistry and orthodontics.

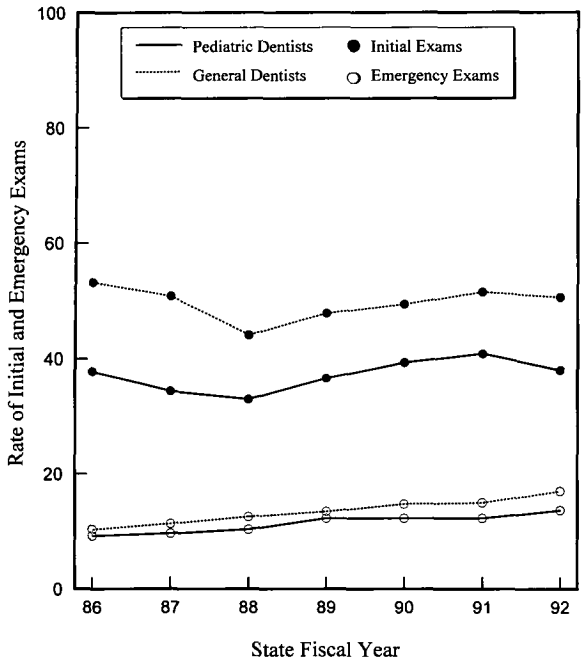

Fig 2. Annual rates of initial (filled circles) and emergency (open circles) examinations per 100 dental users provided by NC pediatric and general dentists.

FY 86 the number of 0- to 4-year-old children treated by pediatric dentists more than doubled, but the number of dental users in the 5- to 9-year age group increased by only 57%.

Discussion

Analysis of data on dentist participation in Medicaid requires careful definition of terms. Participation may be defined as filing as few as one Medicaid claim in a given FY. Because this definition ignores the volume of services delivered by individual providers, it is an insensitive indicator of access to dental care. The number of NC dentists filing at least one Medicaid claim in a given FY declined slightly from FY 86 to 92. Over the same period, the number NC citizens eligible for Medicaid doubled.[10] These trends could be interpreted as a serious decline in access to dental care for poor children.

Distinguishing active providers from those filing few Medicaid claims provides a more meaningful measure of participation. Previous studies addressed this issue by analyzing self-reported percentages of Medicaid-eligible patients in a dentist's practice.[6,8] The current data set contains no information about total practice size for participating dentists, so such an analysis would be impossible. In our previous work, we defined an arbitrary threshold of $15,000 annual reimbursement to indicate active participation.[9] When compared to the average gross income of nearly $318,000 for general practitioners in the U.S.,[11] this threshold equates to approximately 5% of the average general practice. We feel this definition of active Medicaid participation is not overly stringent.

The number of pediatric and general dentists participating above the $15,000 level rose during the FY 86–92 period. To what extent this apparent increase in active providers is due to rising Medicaid reimbursement rates set against the backdrop of a fixed threshold remains to be determined. Nevertheless, comparing the proportion of active pediatric dentists versus general dentists is interesting. In all FYs studied, a much greater proportion of pediatric dentists participated actively in Medicaid than did general dentists. However, this gap seems to have narrowed with time. Anecdotal data suggest that NC pediatric dentists began to limit their Medicaid participation during this study period, and our previous survey yielded some evidence to support such an assertion.[9]

The most instructive definition of provider participation accounts for actual volume of dental services delivered to Medicaid dental users. Mean annual Medicaid reimbursement has more than doubled from FY 86 to 92. While reimbursement for pediatric dentists rose more sharply in actual dollars, reimbursement for both provider groups increased at the same rate relative to FY 86 levels. Considering that more than 80% of all NC dentists are general practitioners, their increased Medicaid participation could have a tremendous impact on access to care. It is important to realize that mean annual Medicaid reimbursement for general dentists never rose above $7,400 for the study period. Moreover, half of all NC general dentists provided no Medicaid dental services.

This trend of increased provider reimbursement was accounted for largely by an increase in mean number of dental users treated by each dentist, which nearly doubled over the study period. While the mean value of services per dental user increased somewhat, this change had limited impact on the overall trends in reimbursement. NC Medicaid dental fees are set, in part,

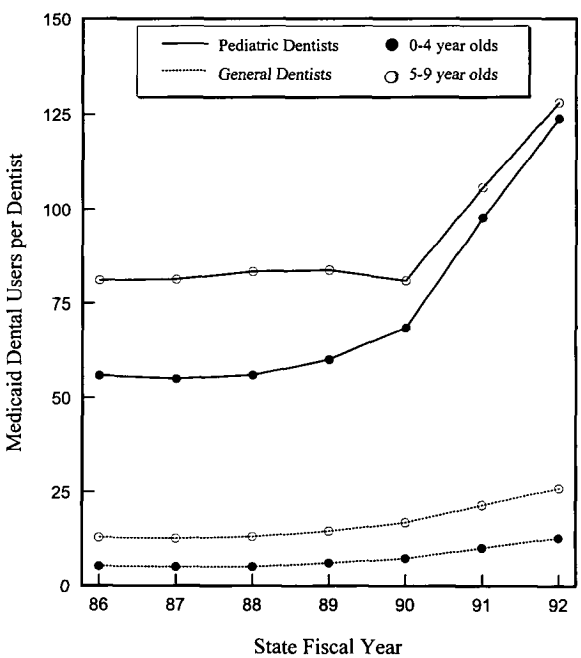

Fig 3. Mean number of Medicaid dental users age 0-4 years (filled circles) and 5-9 years (open circles) treated by NC pediatric and general dentists.

based on costs billed by participating providers. Fees for 18 of the most common dental procedures increased by slightly more than 27% over the FY 86-92 period (data not shown). For the same period, the dental price index rose by nearly 50%.[12, 13] It is clear that Medicaid fees did not keep pace with inflation, which may help explain declining dentist participation.

Fig 2 does provide some indication of a change in the nature of dental care provided to Medicaid dental users. In particular, the rate of emergency examinations has risen steadily while the rate of initial examinations has remained relatively constant over the study period. More Medicaid enrollees may be initiating dental care due to emergency needs, which would suggest that these children face increasing barriers to preventive dental care.

General dentists provide proportionally more initial examinations to their Medicaid patients than do pediatric dentists. We speculate that pediatric dentists may be delivering more restorative care, which would leave less time for these providers to accept new Medicaid patients. This assumption is supported by the fact that pediatric dentists provided a consistently higher average value of dental services to their Medicaid-eligible patients (Fig 1). Using national survey data, McKnight-Hanes et al. showed that pediatric dentists report treating more Medicaid patients.[13] In addition, Bader and Rozier used dental practice logs to document differences in services provided by pediatric and general practitioners for their child patients.[14]

Pediatric dentists often express concern that general practitioners may be performing diagnostic and preventive services for Medicaid dental users and referring these patients to pediatric dentists for the more costly restorative care. This phenomenon has been reported anecdotally by other pediatric dentists from across the country and has been labeled predatory care. Using the current data set, we are unable to confirm that such predatory care occurred, but these questions regarding the mix of services provided to Medicaid dental users deserve further study.

During the study period, three-quarters of all Medicaid dental users treated by pediatric dentists were 0–9 years old. This age group accounted for roughly half of the Medicaid dental users treated by general dentists. The study period saw little change in the age mix of Medicaid dental users in general practices. However, pediatric dentists treated proportionally more 0- to 4-year-old Medicaid dental users and fewer in the 5- to 9-year-old group. These data are consistent with results of our previous survey.[9] In that study we found that many NC pediatric dentists used patient age to limit access Medicaid to recipients, and respondents indicated a desire to focus on treating preschool-age Medicaid patients. The impact of federal legislation[16] mandating increased Medicaid eligibility for children younger than 6 cannot be discounted as a factor in the trends highlighted in Fig 3. For whatever reason, school-age Medicaid children appear to face increasing barriers to pediatric dental practices.

Conclusions

1. The number of NC dentists participating in Medicaid declined slightly from FY 86 to 92.
2. Intensity of participation of the remaining providers nearly doubled.
3. Access to NC pediatric dentists for school-age Medicaid recipients is decreasing.
4. Considering the dramatic growth of the Medicaid-eligible population, access to dental care for poor children in NC has remained at a constant but unacceptably low level.

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