Procedures provided to Medicaid recipients by pediatric, general and public health dentists in the Commonwealth of Virginia: Fiscal Years 1994 and 1995

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Abstract

Purpose: *The purpose of this study was to report any differences found among the mean percentages of procedures performed by three types of dental providers for each type of service performed. The study focused on the types of services provided by dentists to Medicaid children in Virginia.*

Methods: *Medicaid claims filed for dental patients younger than age 21 were obtained and analyzed for fiscal years 1994 and 1995. Dental providers were categorized according to their practice: general practice (GP), pediatric dentist (PD) and public health dentist (PH). Each type of practitioner (GP, PD, and PH) was evaluated for percentages of diagnostic, preventive, and corrective services provided to their Medicaid patients. The preventive category was subdivided into preventive services (scaling, prophy, fluoride and oral hygiene instruction) and sealant services.*

Results: *For each type of service, the mean percentages of procedures performed were compared among the three types of dental providers. The evaluation of the diagnostic procedure variable resulted in the finding that GP practitioners performed a significantly greater percentage of diagnostic procedures to their Medicaid patients than do PD and PH dentists ($p<0.0001$). The percentage of preventive procedures performed by PD and GP dentists was not significantly different but was significantly lower than those performed by PH dentists ($p<0.0001$). Finally, PD dentists performed a significantly greater percentage of corrective procedures than both GP and PH dentists ($p>0.0037$).*

Conclusion: *Differences were found among the mean percentages of procedures performed by the three types of dental providers for each type of service performed. (Pediatr Dent 23:390-393)*

Epidemiological data shows decreasing trends in the prevalence of caries in U.S. children due to the use of occlusal sealants, systemic and topical fluorides.[1, 2] However, dental caries is a prevalent disease seen in many children. It has been documented that children from low socioeconomic status (SES) are at greater risk for dental disease and often experience more severe levels of disease.[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. According to federal law, states must provide screening for EPSDT eligible children for a number of various conditions including dental disease. Each child also must be provided access to treatment for dental diseases.

The ability of state Medicaid programs to improve or provide access to care is directly related to dentists willing to participate in their programs. It has been documented in previous studies that dentists have become frustrated with Medicaid reimbursement rates and administrative burdens.[6-9] These reports could potentially account for decreasing participation in Medicaid programs. However, no reports have documented the types of services provided by Medicaid participating practitioners.

The purpose of this study was to compare the mean percent of services provided to Virginia Medicaid recipients by pediatric dentists (PD), general dentists (GP) and public health dentists (PH) during fiscal years 1994 and 1995.

Methods

Virginia Medicaid dental claims for all dental users were obtained from the Virginia Division of Medical Assistance Services (DMAS), which oversees the program. Medicaid enrollment files provided demographic information of the practitioners and were entered into a database. The DMAS reports also identified provider type of practice and practice location. Dentists who become providers complete a practioner agreement. On this agreement the applicant is asked to self certify their provider status.

Numbers of procedures were entered into a database for the three provider types: the general practitioner, the pediatric dentist and the public health dentist. Each record presented a detailed summary of practitioner services, to their Medicaid patients. Medicaid patients for this study are patients 21 years of age and younger. Fiscal years 1994 and 1995 were chosen because they were the last two years DMAS administered the entire Medicaid program for dentistry. In 1996, HMO vendors were added in certain portions of the state.

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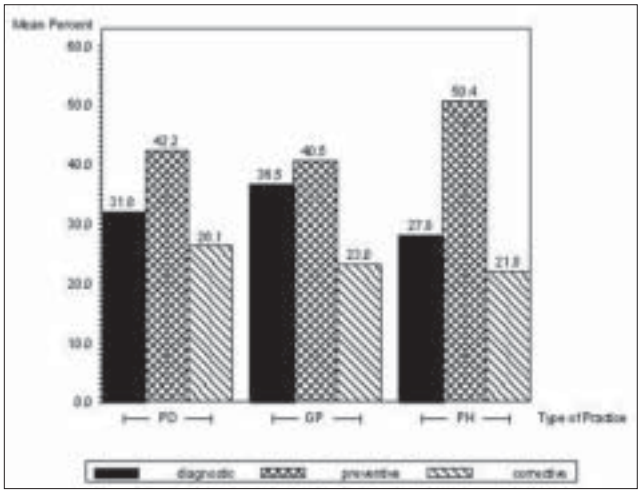

Fig 1. Percent total number procedures by provider (FY1995)

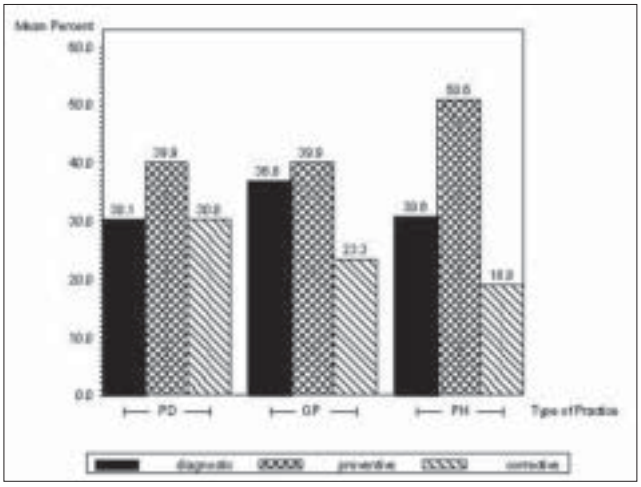

Fig 2. Percent total number of procedures by provider (FY 1994)

Table 1. Sealants as Percent of Total Preventive Services

	FY 1994:		FY 1995:	
Dental provider type: preventive service	N	Mean (%)	N	Mean (%)
PD: sealants	45	11.6±7.7	67	14.1±7.7
GP: sealants	501	10.3±13.9	636	11.1±12.0
PH: sealants	23	22.7±16.3	44	24.7±17.0

The final data set consisted of 747 records, representing dentists who provided Medicaid dental services. Data entered showed total number of procedures, separated by procedure code provided for FY 1994, 1995 or both years. This data was edited to eliminate duplicate entries as well as correct discrepancies in numbers of procedures entered for each provider.

The total number of procedures provided by each practitioner for FY 1994-1995 was divided into three types of services consisting of diagnostic, preventive and corrective services. Diagnostic services were defined as radiographic and/or oral examinations; preventive services included all scaling, prophylaxis, fluoride treatments and sealants; and corrective services included all operative, endodontic, prosthodontic and surgical procedures. The preventive service was further subdivided into sealants and other preventive services. The percentage of each service type (% diagnostic, % preventive and % corrective) was calculated for each practitioner by dividing the number of diagnostic, preventive and corrective services performed by the total number of procedures performed. In addition, for the preventive service type the percentage of prevention and sealants performed was calculated. Since it is of interest to compare the percentage of each service type performed among the three types of providers, the mean percent of diagnostic, preventive and corrective services were calculated for each provider type.

Results

A total number of 747 dental providers was identified who provided Medicaid services in 1994, 1995 or both years. In 1994, there were 569 dental providers; 45 (8%) pediatric dentists, 501 (88%) general dentists and 23 (4%) public health dentists. In 1995, 67 (9%) were pediatric dentists, 636 (85%) general dentists and 44 (5%) public health dentists.

The mean percentages of diagnostic procedures, preventive services and corrective services provided by each type of dental provider are shown in Figures 1 and 2 for FY 1995-1994, respectively.

The preventive services category was subdivided into prevention and sealants. Prevention included all scaling/root planing, prophylaxis, topical fluoride treatments and oral hygiene instruction. The mean percentage of prevention and sealants provided for FY 1994-1995 is shown in Table 1.

Using the GLM procedure of SAS®, three models of percent diagnostic procedures, percent preventive procedures and percent corrective procedures performed by the dental providers and the type of service as the class variable were compared. The residuals from these models were tested for normality and the error variance was tested for constancy to satisfy the analysis of variance (ANOVA) assumptions. Since the underlying assumptions were not satisfied, the results were analyzed using a nonparametric test for the equality of the factor level means (i.e., the Kruskal-Wallis test) instead of the standard parametric ANOVA.

Using the NPAR1WAY procedure in SAS®, the percent diagnostic procedures, percent preventive procedures and percent corrective procedures were found to be significantly different ($p<0.0001$, $p<0.0001$, and $p<0.0037$, respectively) among the three providers for service type. Table 2 shows differences among the three different practice types for the percentage of diagnostic, preventive and corrective services.

The group differences were verified using Bonferroni's pairwise comparison procedure. It was shown that the percentage of diagnostic procedures relative to total procedures performed by GP practitioners was significantly greater than the percentage of diagnostic procedures performed by both PD and PH practitioners. It was also shown that the percentage of preventive procedures relative to total procedures performed by PH was significantly greater than GP and PD practitioners. The GP and PD were not significantly different from each other for preventive services provided. It was shown that the percentage of corrective procedures performed by PD

practitioners was significantly greater than both GP and PH practice. All statistics were computed using SAS® (version 6.12).

Discussion

The dental Medicaid reimbursement rate in Virginia for fiscal years 1994 and 1995 was approximately 35% of usual and customary (UCR) fees.[10] Reimbursement rates may be a factor in compliance with federally mandated standards to assure equal access to dental care for children. In some situations, practitioners may have been forced to reduce or eliminate their participation in the program because reimbursement rates did not cover the practice overhead costs. Alternatively, other practitioners may have been forced to only provide services that generated adequate funds to meet the financial obligations of the practice. For example, a practitioner may only provide diagnostic and preventive services and refer any restorative treatments. Overhead expenses are lower for examination and preventive services as compared with the potential high overhead associated with treatment.

It has always been thought that pediatric dentists have greater participation in Medicaid programs than do general dentists. This may be attributed to the fact that pediatric dentists limit their practices to children, many of whom qualify for Medicaid dental care, whereas general and public health dentists treat all ages and types of patients. Also, pediatric dentists have additional training that may allow more efficient management of this population.

However, pediatric dentists and general dentists appear to be providing similar amounts of diagnostic procedures to their Medicaid eligible patients. Significant differences are noted in corrective procedures. Pediatric dentists provided greater percentages of the corrective services relative to total procedures.

In areas where there are no pediatric dentists, for example rural Southwest Virginia, there may be no pediatric dentists for at least 100 miles. Therefore, general dentists may be forced or expected to provide comprehensive care for children. Further study of services provided by geographic region may prove beneficial to quantify this concern. It should also be noted that, because geography and demographics may affect outcome measures, caution must be taken when comparing it to other regions of the country or the country as a whole.

Public health dentists appear to be concentrating their efforts on preventive services. This theory correlates with the central public health philosophy of prevention. This may also be attributed to the fact that most public health programs do not have available resources and staff to adequately provide complex corrective services.

Sealants appear to be under-utilized by all types of practitioners. Epidemiological data has shown that caries is decreasing and is due largely to fluorides and occlusal sealants.[1,2] Why, then, are dentists not using sealants in their armamentarium? Perhaps, Medicaid fees for sealants may be the deterrent. Virginia Medicaid reimbursement rates for sealants are less than one third the UCR fee in the private sector.[10]

Fiscal years 1994 and 1995 were chosen for this study because they were the last two years that Medicaid was completely managed by the Division of Medical Assistance as the only vendor. In 1996, managed care and health maintenance organizations (HMO's) were contracted by the state to administer the dental program in selected parts of the state. As an ongoing project, it would be of value to compare the state-administered program with the current privately administered managed care program for dental Medicaid. Data collected and entered into the database can serve as a baseline for evaluating the new managed-care approach to dental Medicaid.

Conclusions

1. Diagnostic procedures comprise a greater percent of what GPs do as compared with pediatric and public health dentists.
2. The percentage of preventive procedures provided by PH dentists was significantly greater than that provided by GPs and PDs, who were not significantly different from each other.
3. PH dental practices focus on prevention and provide significantly less corrective services as compared with PD and GP dental practices.
4. The percentage of corrective services provided by PD dentists was significantly greater than that provided by PHs and GPs, who were not significantly different from each other.

Table 2. Differences Among the Three Different Practices for the Percentage of Diagnostic, Preventive and Corrective Services

Practice	Diagnostic services mean rank	Preventive services mean rank	Corrective services mean rank
PD	278.6	376.8	441.9#
GP	394.9+	361.8	371.6
PH	216.9	546.2Σ	305.3
Kruskal-Wallis Test Statistic (P value)	42.4 (p<0.0001)*	30.1 (p<0.0001)*	11.2 (p<0.0037)*

*The percentage of diagnostic, preventive and corrective services differed among the three different practices. +GP>PD, PH Σ PH>PD, GP #PD>GP, PH

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An Invitation to Participate

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