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A Community Strategy for Medicaid Child Dental Services

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SYNOPSIS

Objectives. The authors present second-year utilization data and first- and second-year cost data for a community-based program in Spokane County, Washington, designed to increase access to dental care for Medicaid-enrolled children from birth to 60 months of age.

Methods. The authors used Medicaid eligibility and claims data for 18,727 children 5 years of age and younger to determine utilization of dental care from January 15, 1996, through January 15, 1997. They also used accounting records from the agencies involved to calculate the first- and second-year costs of the program.

Results. A child in the ABCD program was 7.2 times as likely to have at least one dental visit as a Medicaid-enrolled child not in the program. Estimated costs per child with at least one dental visit (in 1995 dollars) were $54.30 for the first year and $44.38 for the second year, or $20.09 per enrolled child for the first year and $18.77 for the second year.

Conclusion. Public-private joint efforts are effective in improving access to dental care for Medicaid-enrolled children.

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The American Academy of Pediatric Dentistry (AAPD) has designated early intervention as a dental health objective for the year 2000. The AAPD guideline suggests that for prevention to be maximized, initial examinations and education of parents in the application of preventive procedures should begin during the first year of life and continue every six months, with two fluoride treatments recommended per year.[1] Nevertheless, national statistics compiled by the Inspector General of the Department of Health and Human Services in 1996 showed that only one of five Medicaid-eligible children through age 20 received a preventive dental service in 1993.[2] For very young children, fewer than 1% of Medicaid eligible children younger than 1 year old received preventive dental services in 1993.[2] Much of this care provided under Medicaid is episodic and not effective in controlling disease.[3]

Much emphasis has been placed by the states and Head Start programs on the federally mandated screening requirement for Medicaid-eligible children under the Early and Periodic Screening, Diagnosis, and Treatment Program (EPSDT). The underlying concept of this requirement is that screening leads to treatment. In most cases, however, it does not,[3] and when it does, it is often too late to prevent tooth loss.[3] Most EPSDT services are rendered to Head Start–age children. But by age 3 or 4, the majority of the children at greatest risk for disease are already afflicted.[4]

The EPSDT program requires each state to provide certain preventive and therapeutic services for Medicaid-eligible children. National data show that fewer than 20% of eligible children received the required services, and 75% of the states report that their programs serve fewer than 30% of eligible children in any year.[2] Utilization among the youngest children, those for whom preventive services are critical, is much lower.[2]

Nationally about 50% of dentists participate in the Medicaid dental program, but even in areas where the supply of dentists is adequate, few serve many patients in the program.[3] The reasons dentists give for not participating include aspects of the program design and of the reimbursement system as well as client behavior such as failing to keep appointments and not properly caring for children's teeth.[5] To address this disparity in access to oral health services, a partnership of public and private groups developed the Access to Baby and Child Dentistry (ABCD) program in 1994 to serve children in Spokane County, Washington.

The program sought to directly address the concerns of practicing dentists regarding fees, covered services, and client behavior and to engage the dental society in constructive efforts to solve the access problem.

This partnership among private dentists, public health professionals, the university dental school, and the state Medicaid program evolved specifically to improve access to primary dental care services for Medicaid recipients from birth to 5 years old.[6] The statewide program is being implemented on a county-by-county basis in steps. In this program, private dentists are trained in new skills and certified by the University, and then receive enhanced Medicaid payments to provide comprehensive dental services to children. These include all typical services needed by children along with enhanced coverage of preventive services. The program is open to dentists participating in Medicaid who wish to be certified as an ABCD dentist. Staff from the regional public health department provide outreach and case finding services. The expenses of the program are covered by the Medical Assistance Administration (the Medicaid agency of the State of Washington), the University of Washington's School of Dentistry, and a small grant from the Washington Dental Service Foundation.

The Spokane County ABCD program has been in existence for more than five years and continues to grow. It was awarded the 1999 Maternal and Child Health Award of the National Association of County and City Health Officers.

All children 60 months of age and younger who reside in Spokane County and who are enrolled in Medicaid are eligible for the ABCD program. About one-half of all such children in the county have been enrolled over the last five years (Unpublished data, Medical Assistance Administration, Washington State, 1999). For a child to enroll in the program, parents must provide their permission and receive an orientation describing the program and how it works.

The program's goals are that all children have at least one visit per year beginning in the first year of life and that children with teeth receive up to three topical fluoride treatments each year.

In the first program year (January 15, 1995, to January 15, 1996), 37% of the 4144 ABCD children had at least one visit to the dentist, in contrast to 12% of non-ABCD Medicaid-enrolled children.[6] The rates for specific age groups ranged as high as 85% for 48- to 60-month-old children, while the highest rate in any age group for non-program Medicaid-enrolled children was 36%.[6]

In an earlier publication we presented dental utiliza-

Of 4796 children enrolled in the ABCD program, 42.3% had at least one dental claim; in contrast, only 14.3% of 13,931 Medicaid-enrolled children not in the program had at least one claim.

tion rates for ABCD children for the first year of the program.[5] This report gives utilization rates for the 4796 children enrolled in the program at any time during the second year (January 15, 1996, to January 15, 1997) as well as overall costs of the program for the first two years of operation.

METHODS

We analyzed utilization of dental services by children in the Spokane County ABCD program who were 60 months of age or younger on January 15, 1997, and who were enrolled in the program on or before January 15, 1997. The primary outcome of interest was the proportion of children in each age group who had at least one dental claim during the previous year. We conducted bivariate statistical tests to determine whether participation in the ABCD program was associated with greater use of Medicaid-financed dental services.

Sources of data. We used data from three sources to study utilization of ABCD services. The study was approved by the Human Subjects Review Committee of the Department of Social and Health Services, State of Washington, and the investigators completed a confidentiality agreement before gaining access to the data. The Medicaid Management Information System, a computerized database of eligibility and claims files, provided enrollment and utilization data for the Washington State Medicaid program as a whole. The eligibility file contained data on 18,727 children in Spokane County who were 60 months of age or younger between January 15, 1996, and January 15, 1997. The claims file contained information on the number of dental visits, the type of visit, and the dates of visits for the period January 15, 1996, through January 15, 1997. From the ABCD enrollment file maintained by the Spokane Health District, we obtained the Medicaid patient identification code (PIC), birth date, and enrollment date for each child enrolled in the program before January 15, 1997.

We merged the data files using the PIC as the common variable.

Utilization. To determine the number of dental visits each child received, we counted the claims experiences for each of the 4796 children. We assumed the number of separate claims would be a fair representation of the number of individual visits because it is customary for dentists to file a claim for the services provided at each separate visit.

Fluctuations in Medicaid enrollment and geographic mobility had little influence on visit counts. Because Washington State used 200% of the federal poverty level instead of 100% as the income eligibility level for Medicaid, the population was quite stable and children tended to be continuously enrolled in the ABCD program over the two-year period. In addition, only a relatively small number of ABCD children moved out of the county in that time frame; about 85% of the children enrolled in ABCD in Spokane County in 1995 were still residents of the county in 1997.

Cost analyses. To determine the costs of the ABCD program for program years 1995 and 1996, we used accounting records from the Spokane Regional Health District, the Spokane District Dental Society, and the University of Washington's School of Dentistry. These records contained expenses for both the training and outreach components of the program. The training costs consisted of the direct expenses for the development and presentation of continuing dental education courses, costs of duplicating materials, and the travel costs of course faculty. The outreach costs consisted of the salaries and benefits of outreach workers and local travel and materials. We deflated the second-year costs by 3.3%, reflecting the increase from 1995 to 1996 in the Consumer Price Index for Western US cities with populations 50,000 to 330,000.[7]

We then calculated costs as a function of the number of children enrolled and the number actually visiting the dentist at least once during that year.

Table 1. Dental claims data for Medicaid-enrolled children ages 60 months and younger who were enrolled/not enrolled in the ABCD program, Spokane County, Washington, January 15, 1996–January 15, 1997 (not adjusted for length of enrollment)

	Enrolled in ABCD		Not enrolled in ABCD				Number of dental visits		
Age (months)	Proportion with ≥ 1 visit	Percent with ≥ 1 visit	Proportion with ≥ 1 visit	Percent with ≥ 1 visit	Odds ratio	95% CI	Mean	Standard deviation	Range
< 12	264/1069	24.7	36/2585	1.4	23.2	17.8, 30.2	0.6	1.3	0–8
12–23	439/1183	37.1	80/2790	2.9	20.0	16.4, 24.4	1.3	2.5	0–28
24–35	552/1182	46.7	244/2583	9.5	8.4	7.2, 9.9	2.2	3.4	0–30
36–47	555/997	55.7	586/2695	21.7	4.5	3.9, 5.2	1.0	4.9	0–33
48–60	218/365	59.7	1049/3278	32.0	2.1	2.5, 3.9	2.9	4.0	0–27
Total	2028/4796	42.3	1995/13,931	14.3	7.2	6.7, 7.9[a]	1.8	3.6	0–33

[a]Adjusted for age category
CI = confidence interval

RESULTS

Of the 4796 children ≤60 months of age who were enrolled in the ABCD program from January 15, 1996, through January 15, 1997, 2028 (42.3%) had at least one dental claim during the year. In contrast, only 1995 (14.3%) of the 13,931 Medicaid-enrolled children in the same age group who were not in the ABCD program had at least one claim on record (odds ratio = 7.2; 95% confidence interval 6.7, 7.9). Table 1 shows the proportion of children with at least one claim, by age group.

Intensity of utilization. The mean number of dental claims for the year was 1.9 (standard deviation [SD] = 3.5) for the children in the ABCD program and 0.3 (SD = 1.1) for the Medicaid-enrolled children who were not in the program ($F = 2024.7$, $P < 0.0001$). Table 1 shows the mean number of services received by age group. Of the 2028 ABCD-enrolled children who had at least one dental visit, 1088 (54%) received at least one fluoride treatment (range 1–6).

Cost of the program. Table 2 gives the costs for the overall program broken out by year and category of expense. Costs ranged from $44.38 to $54.30 per child (1995 dollars) with at least one dental visit and $18.77 to $20.09 per child enrolled in ABCD.

DISCUSSION

Even in areas where the supply of dentists is adequate, many dentists do not treat Medicaid enrollees. In Washington State, 25% of dentists care for 89% of the Medicaid-enrolled children who seek care.[3] These data from the ABCD program suggest that utilization of dental services can be increased when programs are developed that

Table 2. Outreach and dentist training costs for the ABCD program, Spokane County, Washington, 1995 and 1996

	Program year	
Expense category	1995[a]	1996[b,c]
Dentist training	$13,396	$1,669
Outreach		
Salary and benefits for outreach workers	49,247	79,029
Other expenses	20,600	9,313
Total	83,243	90,011
Cost per child enrolled[d]	$20.09	$18.77
Cost per child who visited the dentist at least once[e]	54.30	44.38

[a]January 15, 1995–January 15, 1996
[b]January 15, 1996–January 15, 1997
[c]1996 costs adjusted to 1995 dollars by multiplying actual 1996 costs by 96.7% (100% - 3.3% = 96.7%), reflecting the increase in the Consumer Price Index for cities in the West with populations 50,000 to 330,000, according to the US Bureau of Labor Statistics[7]
[d]Enrollment in 1995 was 4144 children, and enrollment in 1996 was 4796 children
[e]1533/4144 children in 1995 and 2028/4796 children in 1996

Utilization of dental services can be increased when programs are developed that address dentists' concerns and engage them in constructive efforts to solve community problems.

address dentists' concerns and engage them in constructive efforts to solve community problems.

The results from the ABCD program are stunning when compared with Medicaid utilization data from other counties in Washington State. Pierce County, fairly similar in demographic characteristics to Spokane County, had 1997 utilization rates (one or more visits) ranging from 0 in the first year of life to 34.1% at 48–60 months of age.[8] Data from other counties in Washington State are quite similar.[8]

Building on the program's success in reaching children who are typically underserved, efforts must be expanded to promote the use of available benefits. More than half of the children (61%) with at least one dental visit did not receive a preventive fluoride treatment, although two treatments a year is the standard of care.[1] In our earlier study, we found that dentists may underestimate the risk of dental caries in young children, which may partly explain this trend.[6] Studies of vaccination programs have also found that children may fail to be vaccinated because their physicians do not review their charts or because there is no follow-up.[9,10]

The outreach and education efforts of the public health district personnel were designed to find and enroll children and to educate parents about appropriate utilization of dental services for children. Although these efforts focused on appointment keeping, the data suggest that the program is more successful in getting parents to make a single dental visit than to maintain the ongoing relationship needed to prevent and control dental disease. Ideally, children in this program should have made up to three visits to the dentist during this period. The proportion of children in the ABCD program who actually received more than one visit was much lower (not shown). In discussions with some of the dentists we learned that efforts were made to recall children but that telephone numbers and addresses were quickly out of date. For the ABCD program to work optimally, parents must be informed of the recommended visit schedule and the importance of adhering to it even if the child appears to have no dental problems. In addition, parents can notify dentists when they move or change telephone numbers, and dentists can request the telephone number of a relative or friend who knows how to reach the family.

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