Scientific Article

Utilization of dental services by Iowa Medicaid-enrolled children younger than 6 years old

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Abstract

All Medicaid-enrolled children are eligible to receive dental care through the Early and Periodic Screening, Diagnostic and Treatment Program (EPSDT). As part of an evaluation of the effectiveness of the EPSDT program in Iowa, Medicaid enrollment and claims files from fiscal year (FY) 1994 were used to evaluate the utilization of dental services by Medicaid-enrolled children younger than age 6 during FY 1994. During FY 1994, 23% of Medicaid-enrolled children younger than age 6 received at least one dental service while enrolled in the Medicaid program. The total Medicaid-allowed charges for all dental services provided to this population while enrolled in Medicaid during FY 1994 was $1.53 million (the amount Medicaid would pay for the service, prior to calculating any copayments or other insurance charges). Although the EPSDT program in Iowa requires a referral of all Medicaid-enrolled children to a dentist at 1 year of age, fewer than 4% of enrolled children in this age group received any dental services. The percent of enrolled children receiving a dental exam during FY 1994, by age, was as follows: younger than 1 year, 0.2%; age 1, 3%; age 2, 10%; age 3, 27%; age 4, 46%; age 5, 54%. Utilization rates of dental services by Medicaid-enrolled children in Iowa fall far short of federal regulations, which currently require that 80% of enrollees receive EPSDT screenings, referrals, and treatment by age 3. (Pediatr Dent 19:310–14, 1997)

The federal Early and Periodic Screening, Diagnostic and Treatment (EPSDT) program was enacted in 1968 to provide health care to Medicaid-enrolled children from birth to age 21.[1] The EPSDT program promotes early and periodic health screenings and referrals in an effort to prevent health problems from developing, and to successfully identify and intercept health problems that would progress if early screenings were not carried out. It has been shown that participation in EPSDT can improve health status[2–5] and may actually reduce health care costs.[5] States are required to provide dental services for all Medicaid-enrolled children up to age 21, even when dental services are not covered for adults.

The oral health component of the EPSDT program calls for an oral health assessment by the child's primary care provider at frequent intervals beginning in infancy. Under the federal EPSDT guidelines, by 3 years of age children are to be referred to a dentist by their primary care provider. States are given the option of requiring earlier referrals, and in Iowa guidelines require referral to a dentist for annual exams at ages 1 and 2, with semiannual exams beginning at age 3. In this low-income population, which tends to have a higher rate of dental disease,[6] early intervention is critically important.

Although EPSDT services are mandated by the federal government, compliance with the mandates has been extremely low.[7–9] As a result, the Omnibus Reconciliation Act of 1989 (OBRA '89) placed pressure on states to comply with federal EPSDT guidelines and mandated that 80% of enrolled children in each state receive an EPSDT screening by September 1, 1995.[10] The federal government threatened to withhold federal money from states that do not meet this goal.

The barriers to compliance with EPSDT mandates are many and varied. The fact that Medicaid eligibility in some states (including Iowa) is determined monthly (eligibility can change on a month-by-month basis) makes continuity of care extremely difficult. The Medicaid population also tends to be transient and often lacks a regular source of care.[11] In addition, provider (physician or dentist) participation in the Medicaid program is limited in some states.[12–16] Even when these barriers are not present, noncompliance with EPSDT guidelines can still occur due to provider and/or consumer ignorance of the Medicaid-covered services.

The purpose of this study was to evaluate at what age Medicaid-enrolled children younger than age 6 in Iowa receive dental care, the patterns of their utilization, and the allowed charges associated with these dental services.

Methods

A complete set of Medicaid enrollment and claims files was used to evaluate the utilization of dental services by Medicaid-enrolled children in Iowa younger than age 6 during fiscal year (FY) 1994 (July 1, 1993–June 30, 1994). The Medicaid enrollment files were used to determine the recipients who were younger than 6

years of age during FY 1994. Only children who became eligible through the Aid to Families with Dependent Children program (AFDC) were selected for this study. The enrollment files were also used to determine the number of months each recipient was enrolled in Medicaid during the year. Children were placed in age categories based on their birthday that occurred during FY 1994. For example, a child who had his or her first birthday during FY 1994 was considered to be age 1 for these analyses.

From the claims files, the dental services provided to this group of enrolled children were selected by dental procedure code, as well as the dentist's allowed charges (the amount Medicaid would pay for the service prior to calculating any copayments or other insurance charge), which were used to determine costs to the Medicaid program. The dental procedures received by each child were then linked together to determine the number of unduplicated recipients receiving each type of dental service. This unduplicated number of recipients was used as the denominator when determining rates of dental services.

TABLE 1. DENTAL PROCEDURES BY SERVICE CATEGORY USED IN ANALYSES

Procedure	*Code*	*Procedure*	*Code*
Examinations		Therapeutic (cont.)	
Initial exam	00110	Amalgam 1S-permanent	02140
Periodic (recall) exam	00120	Amalgam 2S-permanent	02150
Emergency exam	00130	Amalgam 3S-permanent	02160
		Amalgam 4S-permanent	02161
Radiographs			
Full mouth series	00210	Composite 1S Anterior	02330
Periapical 1st	00220	Composite 2S Anterior	02331
Additional Periapicals	00230	Composite 3S Anterior	02332
Occlusal	00240	Composite 4S Anterior	02335
Single Bitewing	00270	Composite 1S Posterior-primary	02380
2 Bitewings	00272	Composite 1S Posterior-primary	02385
4 Bitewings	00274	Stainless Steel Crown-primary	02930
Panorex	00330	Stainless Steel Crown-permanent	02931
		Pulpotomy	03220
Preventive			
Child prophylaxis	01120	Tooth Extraction-single tooth	07110
Child prophylaxis and Fl	01201	Tooth Extraction-additional tooth	07120
Sealant per tooth	01351	Space Maintainer-fixed unilateral	01510
		Space Maintainer-fixed bilateral	01515
Therapeutic		Space Maintainer-removable unilateral	01520
Amalgam 1S-primary	02110	Space Maintainer-removable bilateral	01525
Amalgam 2S-primary	02120	Hospital visit	09420
Amalgam 3S-primary	02130		

The transient enrollment of many recipients, however, creates a problem in determining the number of enrolled children during any given year. Several factors influence why Medicaid-enrolled children might not be enrolled for the entire fiscal year. For example, infants born during the fiscal year could not be enrolled for the months preceding birth. Older children may experience intermittent enrollment due to moving either into or out of the state, or due to not qualifying for Medicaid during some time periods. In addition, some families who do qualify may fail to enroll during all months of the year. Differences in the number of months (one to 12) enrolled during the year affect the likelihood of a child receiving a dental service while on Medicaid.

To account for the differing lengths of time recipients were enrolled during the year, eligibility numbers were calculated for this study in terms of full-time equivalents (FTEs). To calculate the number of enrolled children in terms of FTEs, the number of months each child was enrolled in Medicaid during FY 1994 was determined. For each individual, this was from one to 12 months. This number of months was summed across all individuals and divided by 12 to get the number of *enrolled years*, or FTEs enrolled in Medicaid.

Aggregate analyses included the total number that had received any dental service, the total allowed charges for the dental services provided to this group, and the allowed charge per enrolled FTE. Other analyses were broken down by age category, including the percent of FTEs receiving any dental service and the percent of FTEs receiving an examination, radiograph, sealant, or therapeutic dental service. The allowed charges for dental services by age and service category are also presented. For the analyses conducted by service category, we used 38 common pediatric dental procedures, identified by dental procedure code. Table 1 shows the procedures included in each service area.

Results

The total number of Medicaid-enrolled children younger than age 6 during 1994 was 64,358 (Table 2). The transient enrollment of many recipients decreases the total number of children enrolled in Medicaid when considered in terms of FTEs by 25% to 48,186 (Table 2). The change is most significant for enrollees younger than age 1 due to the added effect of children being born throughout the year.

Table 2. Iowa Medicaid enrollment—FY 1994*

Age	Individuals	FTEs	FTEs as a percent of individuals
< 1	9,885	4,429	45%
1	13,009	10,245	79%
2	11,314	9,085	80%
3	10,772	8,681	81%
4	10,200	8,242	81%
5	9,178	7,504	82%
Total	64,358	48,186	75%

* Only recipients eligible through the AFDC program

Table 3. Duration of Medicaid eligibility—1994*

Number of months enrolled in Medicaid	Percent of enrollees†
12 months	52%
9–11 months	10
6–8 months	14
<6 months	23%

* Only recipients eligible through the AFDC program

† Column does not add to 100 due to rounding

The intermittent enrollment faced by children on Medicaid and the differences between enrolled individuals and FTEs can be better understood by considering the proportion of the year that children were enrolled in Medicaid during FY 1994, which is reported in Table 3. Almost half of all children were not enrolled for the entire year.

Use of dental services

During FY 1994, 14,889 Medicaid-enrolled children younger than age 6 in Iowa received at least one dental service while enrolled in the Medicaid program. This represents 23% of all children enrolled at some point during FY 1994 and 31% of all FTEs. The total Medicaid-allowed charges for all dental services provided to this population while enrolled in Medicaid during FY 1994 was $1.53 million. The average allowed charge per child who received any dental care was $93.

The proportion of FTEs by age who received any dental services, received an examination, a prophylaxis and/or a therapeutic service is shown in Table 4. Very few children younger than age 3 received any dental services, whereas 70% of those age 5 (in FTEs) received a dental service. Three-quarters of the children who received any dental services also received a prophylaxis.

A relatively small percentage of children received radiographs, with the distribution skewed toward the older children, as would be expected. Five percent or less of children age 3 and younger received radiographs, as did 14% of the children age 4 and 26% of those age 5. Sealant usage was very low. One-half percent or less of children received sealants in any age category.

Few children age 3 or younger received any treatment beyond routine diagnostic and preventive care. Less than 10% of the FTEs younger than age 4 received any therapeutic services, with the percentage increasing to almost 25% of the FTE 5-year-olds. Thirty percent of the children who received any dental services also received therapeutic services.

Regarding allowed charges for the services provided, 22% were for diagnostic services, including exams and radiographs, and 17% were for preventive services, including prophylaxis, fluoride treatments, and dental sealants. The remaining 50% of allowed charges were for therapeutic services. In all age categories, more dollars were spent on therapeutic services than on either diagnostic or preventive services (Table 5). In four of the six age categories, at least half of the allowed charges were for therapeutic services. If all therapeutic services received by these children are included (not just the 38 common procedures used in these analyses, i.e. Table 1), the percent of the total going to therapeutic services increases to 64%.

Discussion

Although the results of this study are limited to a single state during FY 1994, the issues raised in these analyses apply to Medicaid programs and Medicaid

Table 4. Children receiving dental services

Age	# w/ Any Dental Service	Rate/FTE Any Service	# w/ Exams	Rate/FTE w/ Exam	# w/ Prophylaxis	Rate/FTE w/ Prophy	# w/ Therap. Service	Rate/FTE w/ Ther. Service
<1	80	2%	22	0.5%	3	0.07%	10	0.2%
1	452	4	373	4	138	1%	40	0.4
2	1,195	13	1,111	12	593	7%	266	3
3	3,046	35	2,921	34	2,103	24%	723	8
4	4,883	59	4,660	57	3,993	49%	1,560	19
5	5,233	70	4,947	66	4,484	60%	1,797	24
Total	14,889	31%	14,034	28%	11,314	24%	4,396	9%

TABLE 5. ALLOWED CHARGES BY SERVICE AREA, FY 1994*

Age	Exam/Radiograph $	Exam/Radiograph %	Preventive $	Preventive %	Therapeutic $	Services %
< 1	$357	42%	$65	8%	$435	51%
1	$5,576	35%	$3,202	20%	$7,309	45%
2	$18,246	21%	$14,824	17%	$55,754	63%
3	$47,738	21%	$53,899	24%	$123,438	55%
4	$83,887	22%	$108,285	28%	$191,327	50%
5	$99,155	24%	$128,658	31%	$193,911	46%
Total	$254,959	22%	$308,932	27%	$572,175	50%

* Allowed charges only included for 38 common procedures

providers nationwide. The intermittent enrollment of Medicaid recipients, for example, makes it virtually impossible to accurately measure the utilization of services by low-income children solely from Medicaid claims data.

A second issue is the difficulty determining a denominator for calculating the ratio of utilization because of transient enrollment. To calculate utilization strictly using Medicaid claims data carries an inherent assumption that these children do not receive any services when they are not enrolled in the Medicaid program, which may or may not be true. In these analyses, we used the number of FTEs to evaluate the utilization of dental services. Using the number of FTEs enrolled in Medicaid (rather than the number of children enrolled in Medicaid at some point in the year) to calculate usage rates provides a more accurate reflection of the effectiveness of the Medicaid program to provide services to enrollees but still does not accurately reflect the utilization of the population. This could only be accomplished if the Medicaid claims could be linked with clinical data for the time periods when recipients are not enrolled in Medicaid.

In this study, only 31% of FTEs received any dental services. The percentage receiving services was particularly low for children age 3 or younger. This indicates a relatively low level of compliance with the EPSDT guidelines and indicates the significant challenges that states are likely to face as they try to meet the new EPSDT regulations for screenings and referrals. The percentage of children receiving any dental services begins to increase significantly at age 3. This may be due to a combination of factors including: 1) dentists have commonly recommended that a child's first dental visit occur at age 3; 2) children enrolled in Head Start programs are required to receive a dental examination; and 3) federal EPSDT guidelines require a dental examination at age 3.

The low dental utilization rates found in this study are similar to the findings reported in a recent study by the Office of the Inspector General, Department of Health and Human Services, titled *Children's Dental Services Under Medicaid: Access and Utilization.*[9] This study, which used data collected from the states by the Health Care Financing Administration, indicated that only one in five eligible Medicaid recipients received preventive services in 1993.

In an effort to improve recipient participation in the EPSDT program, Iowa implemented a statewide targeted case management system on August 1, 1995. This case management system utilizes care coordinators who help link families with dentists for further diagnostic and treatment services, provide assistance in scheduling exams, and remind recipients when screening exams are due. Care coordinators can be either physicians participating in the Medicaid managed care program, physicians in the Medicaid HMO, or local public health agencies if physician care coordinators are not available. It is hoped that this case management system, together with other changes in the Medicaid program can increase Iowa's rate at which children receive an EPSDT dental screening.

Conclusions

1. The intermittent enrollment of many Medicaid recipients makes it difficult to evaluate the utilization of dental services by Medicaid children and to provide their care.
2. Few Medicaid-enrolled children in Iowa age 3 or younger received any dental services in FY 1994.
3. The low rates of dental utilization suggest that states will need to find creative ways to meet federal requirements that 80% of enrollees receive EPSDT screenings, referrals, and treatment by age 3.
4. The data presented in this report will act as baseline data for evaluating the effectiveness of the Iowa Case Management Program, which, if successful, could be a model for other states.

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