

# Michigan Medicaid's Healthy Kids Dental program

## An assessment of the first 12 months

STEPHEN A. EKLUND, D.D.S., Dr.P.H.; JAMES L. PITTMAN, D.D.S., M.S.; SARAH J. CLARK, M.P.H.

Data from many sources demonstrate that children enrolled in Medicaid have lower rates of utilization of dental services, poorer oral health status and more untreated oral disease than do privately insured children.<sup>1-8</sup> These disparities have been linked to the low proportion of dentists who accept Medicaid as a payment source, leaving many Medicaid enrollees with limited access to dental care.

**Dental providers can help create a Medicaid dental program that is attractive to both providers and patients.**

Dentists consistently have given three reasons for their lack of participation in Medicaid dental programs<sup>9-14</sup>:

- Medicaid reimbursement levels that are far below dentists' usual and customary fees;
- administrative difficulties (such as eligibility verification and prior authorization);
- an excessive number of broken appointments and other undesirable patient behaviors.

National statistics show that only 20 to 30 percent of Medicaid-enrolled children receive any dental care in a given year,<sup>2,3,9</sup> contributing to what the surgeon general calls a "silent epidemic" of oral disease among U.S. children from low-income families.<sup>1</sup>

Historically, Michigan has experienced these same problems with dental care for Medicaid enrollees. However, a turning point occurred when state officials established MICHild, Michigan's version of the State Children's Health Insurance Program. The MICHild dental component was unusual in that it was designed to be administered privately through existing dental carriers

**Background.** In 2000, Michigan's Medicaid dental program initiated Healthy Kids Dental, or HKD, a demonstration program offering dental coverage to Medicaid-enrolled children in selected counties. The program was administered through a private dental carrier at private reimbursement levels. The authors undertook a study to determine the effect of these changes.

**Methods.** The authors obtained enrollment and utilization data for four groups: children covered in the first 12 months of HKD in 22 counties, children with private dental coverage in the same 22 counties in the same 12 months, Medicaid-enrolled children in the same 22 counties for 12 prior months, and Medicaid-enrolled children in 46 counties who were not included in the HKD program at any time. The authors compared access to care, dentists' participation, treatment patterns, patient travel distances and program cost.

**Results.** Under HKD, dental care utilization increased 31.4 percent overall and 39 percent among children continuously enrolled for 12 months, compared with the previous year under Medicaid. Dentists' participation increased substantially, and the distance traveled by patients for appointments was cut in half. Costs were 2.5 times higher, attributable to more children's receiving care, the mix of services shifting to more comprehensive care and payment at customary reimbursement levels.

**Conclusions.** By increasing reimbursement levels and streamlining administration, the HKD demonstration program has shown that substantial improvements can be made to dental access for the Medicaid-enrolled population.

**Practice Implications.** The findings of this assessment suggest that appropriate attention to administration and payment levels can rapidly improve access for Medicaid-enrolled patients using existing dental personnel. By cooperating with state officials to design a program that addresses multiple issues, dental providers can help create a Medicaid dental program that is attractive to both providers and patients.

and offered reimbursement levels identical to those paid by private dental insurance plans. Initiated on May 1, 1998, MICHild demonstrated the potential effectiveness of this type of state-private dental partnership; in the first year, the proportion of MICHild enrollees who had had at least one dental visit was nearly identical to the proportion of privately insured children who had had at least one dental visit.<sup>15</sup>

In the summer of 1999, the Michigan legislature appropriated an additional \$10.9 million to address concerns about oral health disparities and lack of access to oral health care in the Medicaid population. In light of the success of the MICHild dental component, the Medical Services Administration, or MSA—Michigan's Medicaid agency—decided to initiate a Medicaid demonstration program modeled after it. The demonstration program called for the Michigan Department of Community Health to contract with a statewide dental insurance carrier that would administer the Medicaid dental benefit. The population the MSA chose for the program lived in rural counties and had limited access to dental care.

The demonstration program was named Healthy Kids Dental, or HKD. Administered through Delta Dental Plan of Michigan, or DDPM, and using DDPM-affiliated dentists, HKD aims to address two of the three commonly cited reasons for dentists' nonparticipation in Medicaid. First, reimbursement levels are identical to those in DDPM's commercial dental plans; second, all administrative transactions for HKD are handled through DDPM in the same manner as that with its commercial contracts. HKD children can receive care from any DDPM-participating dentist in the state; eligibility is based on the child's county of residence, not the location of the dentist. Covered procedures in the HKD program are paid at 100 percent, with no patient copayment, whereas privately insured programs nearly always include some patient copayment.

On May 1, 2000, the MSA automatically converted the coverage of all Medicaid-enrolled children (younger than 21 years of age) residing in 22 of Michigan's 83 counties from Medicaid to HKD. Children in 18 of the counties, representing approximately two-thirds of the total HKD enrollment, were enrolled in DDPM's

DeltaPremier dental program, which provides fee-for-service reimbursement to any DeltaPremier dentist in the state. Children in the remaining four counties, representing approximately one-third of the HKD enrollment, were enrolled in DDPM's preferred provider program, referred to as DeltaPreferred Option, or DPO. Children in the four DPO counties were limited to treatment by participating DPO dentists. Approximately 90 percent of all dentists in Michigan were participating DeltaPremier dentists, while 20 percent of all dentists were DPO participants. An additional 15 counties with DeltaPremier coverage were added to the demonstration program on Oct. 1, 2000.

The initial implementation of HKD included approximately 55,000 Medicaid-enrolled children in the original 22 counties. The 15 additional counties, added four months later, brought approximately 45,000 more children into the demonstration program, for a total of nearly 100,000. This number is approximately equivalent to the number of Medicaid-enrolled children in these same 37 counties, during the year prior to the establishment of HKD.

In late 2001, we undertook a study to evaluate the first 12 months of the HKD program in the original 22 counties in terms of access to care, dentists' participation, treatment patterns, patient travel distances and cost. We compared data from the HKD program with data from the Medicaid program administered by the state, as well as with data on privately insured children in programs administered by DDPM.

## SUBJECTS AND METHODS

We obtained historical and concurrent Medicaid enrollment and utilization data for all children aged 20 years and younger in the entire state of Michigan from the MSA division of the Michigan Department of Community Health. We obtained from DDPM enrollment and utilization data for children in the HKD demonstration program and in privately insured groups. All personal identifiers of the enrollees and dentists were scrambled by the agencies providing them to ensure individual confidentiality.

Enrollment information included all dates

**In 1999, the Michigan legislature appropriated \$10.9 million to address concerns about lack of access to oral health care in the Medicaid population.**

TABLE 1

## PERCENTAGE\* OF CHILDREN† UTILIZING DENTAL CARE DURING STUDY PERIODS, BY COVERAGE TYPE AND ENROLLMENT DURATION.

ENROLLMENT DURATION (MONTHS)	PERCENTAGE OF CHILDREN UTILIZING DENTAL CARE, BY COVERAGE TYPE AND STUDY PERIOD			
	Medicaid: 22 Counties,‡ April 1999-March 2000	HKD§: 22 Counties, May 2000-April 2001	Medicaid: 46 Counties¶, April 1999-March 2000	Medicaid: 46 Counties, May 2000-April 2001
<b>Continuous (All 12 Months)</b>	31.8	44.2	35.7	35.8
<b>Partial (One to 11 Months)</b>	11.1	17.2	14.4	13.6

\* All 99 percent confidence intervals smaller than  $\pm 0.1$  percent.  
† Children aged 20 years and younger.  
‡ Michigan counties in which children enrolled in Medicaid were automatically switched to the Healthy Kids Dental demonstration program of Michigan Medicaid.  
§ HKD: Healthy Kids Dental program.  
¶ These 46 counties were not included in the Healthy Kids Dental program at any time.

when coverage began or ended throughout the period covered by this analysis; dates of birth; and ZIP codes, so that the approximate geographic location of each enrolled child could be determined. Utilization information consisted of the usual elements: claims for payment, including the dentist's identifier; the procedures performed; the date of service; amounts charged and paid; and the ZIP code of the treating dentist.

We calculated the percentage of utilization by comparing the number of enrolled children who had one or more claim within any given period with the number of children who were enrolled during that period. We used data from the initial 12-month period (May 2000 through April 2001) in the original 22 counties for comparison with the 12-month period of April 1999 through March 2000 in the same 22 counties. This 12-month period used for comparison purposely excludes April 2000, the month before the start of HKD, to minimize any changes in utilization that might have occurred in anticipation of the new program. We also made comparisons with the Medicaid utilization in the 46 Michigan counties that were not included in the HKD program at the time of our study. We made estimates of the distance traveled for dental care from calculations of the distance between ZIP code centroids for each patient and dentist encounter, according to the method of Carson and Clay.<sup>16</sup> We calculated paid amounts for categories of dental procedures and age groupings. To calculate the number of procedures and costs per user, we divided the number of procedures and total payment by the number of users.

## RESULTS

**Access to care.** During the first 12 months of the HKD demonstration program, in the 22 counties that started on May 1, 2000, the number of children receiving dental care increased 32.3 percent over the previous year under Medicaid, an increase from 16,301 to 21,574 children receiving care. Table 1 shows the percentage of children continuously enrolled (all 12 months) and partially enrolled (one to 11 months) who received any dental services during the initial 12-month period in the initial 22 HKD counties, compared with the 46 Michigan counties that were not involved in the demonstration program. Under Medicaid in the 22 counties, during a 12-month period shortly before the start of the HKD program, 31.8 percent of continuously enrolled children and 11.1 percent of partially enrolled children had at least one dental visit in the 12-month period from April 1999 through March 2000. After the conversion to HKD on May 1, 2000, 44.2 percent of continuously enrolled children and 17.2 percent of partially enrolled children had at least one dental visit during the 12-month period from May 2000 through April 2001. For continuously enrolled children, this is a 39 percent increase and for partially enrolled children, a 55 percent increase.

Table 1 also shows utilization levels both before and during HKD's first 12 months in the original 22 counties, among Medicaid-enrolled children from the 46 Michigan counties that are not currently included in the HKD program.

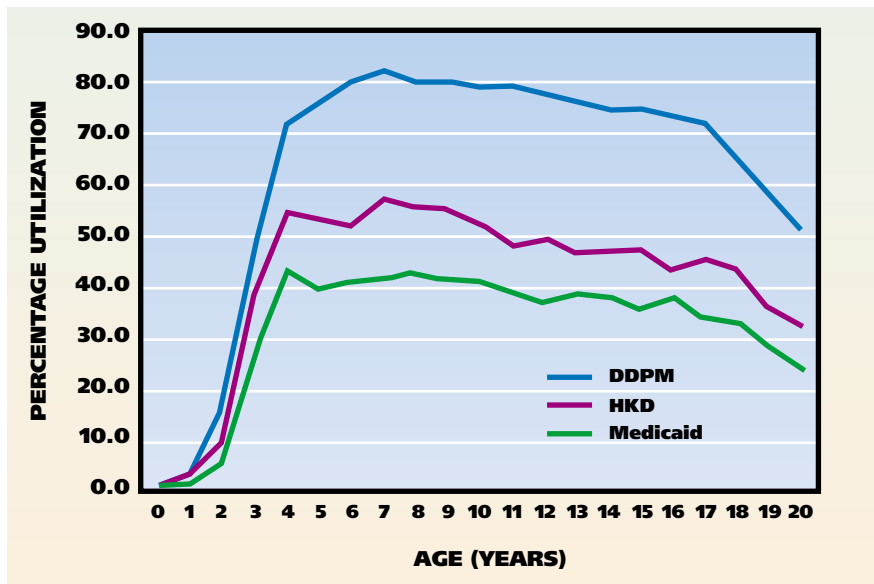


Figure. Utilization in 12 months by continuously enrolled children in 22 Michigan counties. DDPM: Delta Dental Plan of Michigan. HKD: Healthy Kids Dental demonstration program of Michigan Medicaid.

While the utilization levels in these 46 counties initially were slightly higher before HKD than the levels under Medicaid in the 22 original HKD counties, unlike in the HKD counties, there was little change between the two periods. This stability in utilization in the non-HKD counties indicates that the substantial improvement in the HKD counties is attributable to the initiation of the program.

The figure provides further detail on the increase in utilization between Medicaid and HKD and also provides a comparison with privately insured children. In addition to showing that the increase in utilization has occurred across all ages, the figure shows that among con-

tinuously enrolled children between the ages of 4 and 10 years, utilization in HKD was more than 50 percent.

tinuously enrolled children between the ages of 4 and 10 years, utilization in HKD was more than 50 percent.

**Dentists' participation and location of care.** An important trend shown in Table 2 is the change in the location of the dental care provided. In the original 22 HKD counties, over the 12-month period, the proportion of Medicaid-enrolled children who received dental care in their county of residence nearly doubled under HKD, to the point that the proportion of HKD enrollees receiving in-county treatment was higher than the comparable proportion of privately insured children treated in their home

counties. This change in location of dental care is mirrored in the number and location of dentists providing care. Table 3 shows an overall increase of 183 dentists who provided care through HKD, compared with those who had provided care to Medicaid-enrolled children in the prior 12-month period. Even more striking is the increase of 236 dentists within the 22 counties who treated Medicaid-enrolled children under HKD. Indeed, some out-of-county dentists who previously had treated Medicaid-enrolled children from these counties did not treat any children under HKD, likely because these children were able to receive care closer to home.

TABLE 2

**TOTAL NUMBER OF CHILDREN\* TREATED OVER A 12-MONTH PERIOD IN THEIR COUNTIES OF RESIDENCE: ORIGINAL 22 HKD† COUNTIES ONLY.**

TYPE OF COVERAGE	TOTAL NO. (%) RECEIVING IN-COUNTY TREATMENT
Medicaid	6,216 (37.9)
HKD	15,814 (73.3)
Private‡	41,592 (63.0)

\* Children aged 20 years and younger.

† HKD: Healthy Kids Dental demonstration program of Michigan Medicaid, to which children in 22 counties were switched from Medicaid coverage.

‡ Private: Coverage by Delta Dental Plan of Michigan through either its DeltaPremier program or its DeltaPreferred Option program.

The last column of Table 3 is especially noteworthy. This column limits the comparison to the 18 DeltaPremier counties we studied, in which HKD-enrolled children were able to receive care from any dentist participating in the DDPM program, as opposed to the four DPO counties, where only DPO dentists were available to HKD-

enrolled children from those counties. In the 18 DeltaPremier program counties, among the 289 dentists who during the year treated any DDPM-insured children, 247 (85 percent) also treated HKD-enrolled children.

Another important effect of the increase in locally available dentists is that it reduced the distance that these children had to travel for care. Under Medicaid, the average distance between the child's residence and the treating dentist was 24.5 miles. Under HKD, this average distance was cut by more than one-half, to 12.1 miles—virtually identical to the average 12.2 miles traveled by the privately insured children in these counties.

**Treatment patterns.** Table 4 demonstrates the substantial need for treatment among Medicaid-enrolled children. Treatment levels for restorations and endodontics were somewhat higher under HKD than they were under traditional Medicaid. This pattern of more need for restorations and endodontics in the Medicaid population is entirely expected, given these children's previous low level of utilization.

The relative distribution of payments for children's dental services among procedure groups shown in Table 5 demonstrates similarities between Medicaid and HKD. For both groups, restorative and endodontic services made up nearly 45 percent of total expenditures—roughly twice the percentage for the privately insured population. The somewhat higher proportion of

expenditures for extractions in the privately insured group likely reflects the removal of third molars, which is quite common in these children.<sup>17</sup>

With the change to HKD from the Medicaid-administered program, payments per enrolled member per month increased approximately 250 percent (2.5 times). This higher cost is attributable to the increased number of users among those enrolled, a shift in mix of services to more comprehensive care and the increased reimbursement levels.

**Recall patterns.** Table 6 shows that recall rates increased for children in HKD compared

TABLE 3

UNDUPLICATED COUNT OF CHILDREN'S* DENTAL PROVIDERS OVER A 12-MONTH PERIOD.			
TYPE OF COVERAGE (PERIOD OF COVERAGE)	PROVIDERS, BY LOCATION		
	Total Providers, All 22 Counties Studied	In-County Providers, All 22 Counties Studied	In-County Providers, 18 DeltaPremier Counties Studied
Medicaid (April 1999-March 2000)	769	115	77
HKD† (May 2000-April 2001)	952	351	247
Private‡ (May 2000-April 2001)	3,666	550	289

\* Children aged 20 years and younger.  
† HKD: Healthy Kids Dental demonstration program of Michigan Medicaid.  
‡ Private: Coverage by Delta Dental Plan of Michigan through either its DeltaPremier program or its DeltaPreferred Option program.

TABLE 4

SELECTED PROCEDURES PER USER OVER A 12-MONTH PERIOD: ORIGINAL 22 COUNTIES.*			
TYPE OF COVERAGE	AVERAGE NO. OF PROCEDURES PERFORMED PER CHILD		
	Restorations†	Endodontics†	Extractions‡
Medicaid	1.32	0.06	0.24
HKD§	1.52	0.08	0.25
Private¶	0.76	0.02	0.16

\* Michigan counties in which children originally covered by Medicaid were automatically switched to coverage by the Healthy Kids Dental demonstration program of Michigan Medicaid.  
† Among children aged 20 years and younger.  
‡ Comparison of extractions is limited to subjects aged 10 years and younger, to avoid confounding by extractions for orthodontic treatment and third-molar removal, both of which were common among the Delta privately insured children.  
§ HKD: Healthy Kids Dental demonstration program of Michigan Medicaid.  
¶ Private: Coverage by Delta Dental Plan of Michigan through either its DeltaPremier program or its DeltaPreferred Option program.

TABLE 5

## RELATIVE DISTRIBUTION OF PAYMENTS, BY MAJOR PROCEDURE GROUPINGS.

TYPE OF COVERAGE	PERCENTAGE OF PAYMENTS, BY PROCEDURE GROUPING			
	Diagnostic/ Preventive	Restorative	Endodontics	Surgery
Medicaid	44.7	39.5	5.3	6.5
HKD*	43.0	37.7	6.4	10.7
Private†	58.1	20.0	2.3	15.9

\* HKD: Healthy Kids Dental demonstration program of Michigan Medicaid.  
† Private: Coverage by Delta Dental Plan of Michigan through either its DeltaPremier program or its DeltaPreferred Option program.

TABLE 6

## CHILDREN\* IN THE ORIGINAL 22 COUNTIES† WHO HAD RECALL APPOINTMENTS 180 DAYS OR MORE AFTER INITIAL APPOINTMENTS.

TYPE OF COVERAGE	PERCENTAGE WHO HAD RECALL APPOINTMENT
Medicaid	10.6
HKD‡	16.5
Private§	30.1

\* Children aged 20 years and younger.  
† Michigan counties in which children originally covered by Medicaid were automatically switched to coverage by the Healthy Kids Dental demonstration program of Michigan Medicaid.  
‡ HKD: Healthy Kids Dental program.  
§ Private: Coverage by Delta Dental Plan of Michigan through either its DeltaPremier program or its DeltaPreferred Option program.

a regular recall pattern, and thus required little restorative care at any particular recall appointment. After the backlog of needs among Medicaid-enrolled children is treated and these children become regular dental patients, they can be expected to require much lower levels of reparative treatment in the future. If they do become regular dental patients, their future annual treatment needs should much more closely follow the need patterns observed among the privately insured children. After more time has elapsed, we will be able to ana-

lyze the treatment patterns in recall patients more comprehensively.

with those for children with traditional Medicaid coverage, but still were substantially below the rates for the privately insured population. It must be remembered that this analysis is limited to the first year of program operation; therefore, many of the HKD children were not in the practices long enough for the required six-month interval between checkups to have lapsed.

### DISCUSSION

Although 12 months is a short period during which to observe recall patterns, early assessments are highly encouraging. More HKD children are entering a regular recall pattern, and the backlog of need in these children is being treated (more restorations, pulpotomies and endodontic procedures). The high proportion of expenditures for restorative and endodontic services is attributable to this greater backlog of need among Medicaid-enrolled children, while the vast majority of children with private coverage were in

analyze the treatment patterns in recall patients more comprehensively.

### CONCLUSION

Inadequate access to care has been a problem that has plagued the Medicaid dental program in virtually every state since the program's inception. By eliminating two of the three identified barriers to provider participation (low fees and atypical claims administration), Michigan's HKD demonstration program has shown that rapid and substantial improvements can be made in access for the Medicaid-enrolled population using existing dental personnel. These initial findings are highly encouraging.

Longer-term analysis will be necessary to determine whether children remain patients of the same dental offices over time, enhancing continuity of care. More time also will need to elapse to reveal whether, after urgent needs are addressed, the patterns of care shift to lower-cost

maintenance and preventive care. As data covering a longer period become available, we plan to conduct such analyses. ■

Dr. Eklund is a professor of dental public health, University of Michigan School of Public Health, Ann Arbor, and serves as a consultant to Delta Dental Plan of Michigan, Lansing. Address reprint requests to Dr. Eklund at University of Michigan, School of Public Health, Department of Epidemiology, 611 Church St., Room 352, Ann Arbor, Mich. 48104-3028, e-mail "saeklund@sph.umich.edu".

Dr. Pittman is a consultant to Delta Dental Plan of Michigan, Lansing.

Ms. Clark is a research investigator, Child Health Evaluation and Research Unit, Division of General Pediatrics, University of Michigan, Ann Arbor.

The authors thank the staff at the Michigan Department of Community Health and Delta Dental Plan of Michigan for their cooperation in gaining access to the enrollment and claims data that were required for this analysis.

1. U.S. Public Health Service, Office of the Surgeon General, National Institute of Dental and Craniofacial Research. Oral health in America: A report of the surgeon general. Rockville, Md.: U.S. Department of Health and Human Services, U.S. Public Health Service; 2000. NIH publication 00-4713.

2. U.S. General Accounting Office. Oral health: Dental disease is a chronic problem among low-income populations—Report to congressional requestors. Washington: U.S. General Accounting Office; 2000. GAO publication HEHS-00-72.

3. U.S. General Accounting Office. Oral health: Factors contributing to low use of dental services by low-income populations—Report to congressional requestors. Washington: U.S. General Accounting Office; 2000. GAO publication HEHS-00-149.

4. Brown LJ, Wall TP, Lazar V. Trends in untreated caries in perma-

nent teeth of children 6 to 18 years old. *JADA* 1999;130:1637-44.

5. Brown LJ, Wall TP, Lazar V. Trends in untreated caries in primary teeth of children 2 to 10 years old. *JADA* 2000;131(1):93-100.

6. Brown LJ, Wall TP, Lazar V. Trends in total caries experience: permanent and primary teeth. *JADA* 2000;131:223-31.

7. Edelstein BL, Manski RJ, Moeller JF. Pediatric dental visits during 1996: an analysis of the federal Medical Expenditure Panel Survey. *Pediatr Dent* 2000;22(1):17-20.

8. Vargas CM, Crall JJ, Schneider DA. Sociodemographic distribution of pediatric dental caries: NHANES III, 1988-1994. *JADA* 1998;129:1229-38.

9. U.S. Department of Health and Human Services, Office of the Inspector General. Children's dental services under Medicaid: Access and utilization. San Francisco: U.S. Department of Health and Human Services, Office of the Inspector General; 1996. USDHHS publication OEI-09093-00240. Available at: "oig.hhs.gov/oei/reports/oei-09-93-00240.pdf". Accessed Oct. 1, 2003.

10. Iben P, Kanellis MJ, Warren J. Appointment-keeping behavior of Medicaid-enrolled pediatric dental patients in eastern Iowa. *Pediatr Dent* 2000;22:325-9.

11. Venezia RD, Vann WF Jr. Pediatric dentists' participation in the North Carolina Medicaid program. *Pediatr Dent* 1993;15(3):175-81.

12. Nainar SM, Tinanoff N. Effect of Medicaid reimbursement rates on children's access to dental care. *Pediatr Dent* 1997;19:315-6.

13. Lang WP, Weintraub JA. Comparison of Medicaid and non-Medicaid dental providers. *J Public Health Dent* 1986;46:207-11.

14. Damiano PC, Brown ER, Johnson JD, Scheetz JP. Factors affecting dentist participation in a state Medicaid program. *J Dent Educ* 1990;54:638-43.

15. Almeida R, Hill I, Kenney G. Does SCHIP spell better dental care access for children? An early look at new initiatives. Washington: The Urban Institute; 2001. Available at: "www.urban.org/Template.cfm?Section=ByAuthor&NavMenuID=63&template=/TaggedContent/ViewPublication.cfm&PublicationID=7375". Accessed Sept. 19, 2003.

16. Carson CG, Clay D. Calculating field size and distances between points using GPS coordinates. Available at: "www.abs.sdstate.edu/abs/precisionfarm/Carlson.html". Accessed Aug. 7, 2003.

17. Eklund SA, Pittman JL. Third molar removal patterns in an insured population. *JADA* 2001;132:469-75.