

Preventive health care for Medicaid children

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In this article, we measure the extent to which California Medicaid children in 1981 received preventive care services through either the regular or the Early and Periodic Screening, Diagnosis, and Treatment component of Medicaid. On average, 62 percent of children up to 15 years of age who were continuously enrolled for that year

had no preventive care visits, with the percentage increasing with age. Forty-five percent of children under 5 had no preventive visits paid by Medicaid. Children outside of urban areas received fewer preventive care visits than did urban children.

Introduction

There is little disagreement in the medical community regarding the importance of providing preventive health care to children. Although there is some controversy concerning the relative effectiveness of certain services, there is general consensus that some schedule of medical visits for children is needed. Beyond any dispute is the importance of all children receiving immunizations against serious childhood illnesses (Wagner, Herdman, and Alberts, 1989; White, Koplan, and Orenstein, 1985; Hinman and Koplan, 1984; Shadish, 1982).

Medicaid, a State-administered program that is jointly funded by the Federal and State governments, provided health insurance coverage in 1988 for 11 million of the most economically disadvantaged children in the United States. An integral component of the Medicaid program is the Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program, which offers the Nation's largest preventive health care program. Enacted in 1967 as a mandatory service under Medicaid, the intent of the EPSDT program is to provide all Medicaid-eligible children from birth to 21 years of age with comprehensive and periodic screenings for any illnesses, abnormalities, or treatable conditions, and to correct or ameliorate defects and physical or mental illnesses uncovered during the screening. Screenings include evaluation of nutrition, vision, dental and hearing status; a history and physical examination; and provision of immunizations.

According to estimates based on 1988 data from the Health Care Financing Administration (HCFA), between 20 and 30 percent of children enrolled under Medicaid received EPSDT services (American Academy of Pediatrics, 1990; Health Care Financing Administration, 1990). If the other 70 to 80 percent are not receiving appropriate preventive care, this is reason for great concern. However, it is possible that certain of these children are receiving preventive care that is not billed to Medicaid.

Because EPSDT is not the exclusive means of providing preventive care under Medicaid, this study combines EPSDT and other Medicaid claims in order to

create a complete record of care delivered to children by the Medicaid program. By linking the EPSDT screening data for a child with that child's other Medicaid claims, we were able to examine the extent to which Medicaid-covered children received preventive care, either through other Medicaid services or through the EPSDT component of Medicaid.

The following questions are addressed in this article:

- What percent of children enrolled under Medicaid are receiving preventive care and what are some attributes of that care, i.e., which children are receiving it, who is providing it, and how much does it cost?
- What personal characteristics of children, to the extent that they may be identified on the Medicaid enrollment files, influence a child's receipt of preventive care visits and the number of preventive care visits received?
- What personal characteristics of children and characteristics of care, to the extent that they may be identified on the Medicaid enrollment files, influence a child's receipt of preventive care over time?

The study is limited to a cohort of children who were continuously enrolled in the Medicaid program for 1 full year (1981). By limiting the population to those children continuously enrolled in Medicaid for an entire year, we have assumed that any preventive care these children might have received was most likely financed by Medicaid. However, a limitation of this study is that it cannot identify preventive care provided outside of the Medicaid program, such as at public health clinics.

Data sources and methodology

The data sources used for this analysis included Medicaid EPSDT data from California (referred to by the State as the Child Health and Disability Prevention [CHDP] program), and data from other Medicaid claims. The California Medicaid program is known as Medi-Cal. The CHDP data base was derived from paid claims processed through the California Department of Health Services and contains data on expenditures and utilization for all preventive care services administered through the CHDP program. Specifically, it contains a Medi-Cal recipient identification number and screening information for every preventive care claim paid from 1981 through 1984, including history and physical examination, vision and hearing screenings, and immunization data. The identification number permitted linkage of the CHDP screening data to the other Medi-Cal claims, so that we

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could examine where a child received preventive care and the extent of preventive care that was provided. In general, a completed CHDP screen was counted as one CHDP visit for preventive care for this analysis.

The Medi-Cal claims data base, referred to as Tape-to-Tape, is part of a multistate Medicaid data base developed by SysteMetrics/McGraw Hill, Inc. under contract to the Office of Research and Demonstrations at HCFA. The Tape-to-Tape data base contains complete utilization records for services reimbursed by Medi-Cal for each enrollee as well as demographic and eligibility group information.

To establish a set of diagnosis and procedure codes that mirrored CHDP services, a physician advisory committee of four American Academy of Pediatrics (AAP) Fellows with expertise in the areas of health services research and preventive care were asked to identify codes from the *International Classification of Diseases, 9th revision, Clinical Modification* (ICD-9-CM) and California Standard Nomenclature system used by Medi-Cal. In addition, a registered records administrator reviewed and edited the final list. The codes selected from the Tape-to-Tape file are delineated in the final report on this project (Fleming and Yudkowsky, 1990), but generally included the ICD-9-CM codes for nutrition, vision and hearing care, and other preventive care services that were also found in the CHDP file.

After processing the Tape-to-Tape files and the CHDP files, the data were organized into a longitudinal, person-based file containing complete utilization records for services reimbursed by Medi-Cal for each child for the 4-year period 1981-84.

Study populations

The analysis files for this study included, with the exceptions noted below, all noninstitutionalized children age 15 or under who were continuously enrolled in Medi-Cal for a 12-month period during 1981, as well as children born during 1981. Excluded from the study were children who met any one of the following criteria:

- Any child not continuously enrolled in Medi-Cal during 1981.
- Any child over 15 years of age as of July 1, 1981.
- Any child institutionalized at any time from 1981 through 1984.
- Any child enrolled in a health maintenance organization at any time from 1981 through 1984.
- Children in counties that operate their own Medi-Cal programs funded by the State on a capitated basis (Monterey and Santa Barbara counties).
- A small group of children (less than 1 percent) who had problems with the assignment of their Medi-Cal beneficiary identification numbers over time.

Continuous enrollment in 1981 was required so that we could capture complete utilization histories of these children for 1 full year. One exception, however, involved children born in 1981 who were included in the analysis if they were continuously enrolled in Medi-Cal after birth.

The study group was limited to children 15 years of age or under in 1981 so that they would not "age out" of Medicaid during the 1981-84 study period. For certain

analyses, the study group is further limited to those children who were continuously enrolled in 1981 and who also were continuously enrolled through 1984. In a few tables, we present the data for this latter group and for the residual group of those continuously enrolled in 1981 separately.

Findings

In Table 1, one can see that in California, 654,881 children were continuously enrolled in Medi-Cal in 1981. Also in Table 1, the demographic composition of the study group is shown. The majority of continuously enrolled children were in the Aid to Families with Dependent Children (AFDC) categorically needy, cash

Table 1

Number and percentage of children under 15 years of age continuously enrolled in Medicaid, by selected characteristics: California, 1981-84

| Characteristic | Continuously enrolled in 1981 | Subset of continuously enrolled, 1981-84 |
|---|-------------------------------|--|
| Number of children | 654,881 | 270,105 |
| Aid category | Percent | |
| AFDC categorically needy, receiving cash assistance | 78.0 | 87.8 |
| AFDC categorically needy, medically needy, receiving no cash assistance | 7.7 | 2.8 |
| Disabled | 1.7 | 2.8 |
| Other | 11.7 | 6.1 |
| Not classified | 0.9 | 0.5 |
| Age | | |
| Under 1 year | 17.0 | 9.8 |
| 1-4 | 25.4 | 28.5 |
| 5-8 | 21.8 | 25.5 |
| 9-12 | 21.1 | 24.9 |
| 13-15 | 14.7 | 11.2 |
| Sex | | |
| Male | 51.1 | 50.7 |
| Female | 48.9 | 49.3 |
| Area of residence | | |
| Rural | 6.1 | 5.9 |
| Semi-urban | 28.2 | 29.5 |
| Urban | 65.6 | 64.6 |
| Modal provider type¹ | | |
| Pediatrician | — | 30.1 |
| Other primary care | — | 26.7 |
| Internist or obstetrician/gynecologist | — | 2.3 |
| Specialty physician | — | 5.7 |
| Nonphysician | — | 21.9 |
| Unspecified | — | 11.5 |
| Missing | — | 1.8 |

¹Calculated over a 4-year period (1981-84) for children who were continuously enrolled in Medicaid during that 4-year period.

NOTE: AFDC is Aid to Families with Dependent Children.

SOURCES: California Department of Health Services; Data from the Child Health and Disability Prevention program; and Health Care Financing Administration, Office of Research and Demonstrations; Data from the Tape-to-Tape project; data development by SysteMetrics/McGraw-Hill, Inc.

assistance category (78 percent). Nearly 12 percent of children were in the "other" aid category, which was comprised mainly of "Ribicoff children," children who are eligible independent of their family eligibility. The rest were in either the AFDC categorically needy-medically needy, no-cash assistance category, or they were disabled (7.7 percent and 1.7 percent, respectively).

More than 25 percent of continuously enrolled children were between the ages of 1 and 4; 17 percent were under 1. There were slightly more males than females; 51.1 percent of children were male, the remainder female. Almost two-thirds of the continuously enrolled children lived in urban areas (65.6 percent), while 28 percent lived in semi-urban areas in 1981. Six percent of children lived in a rural area.

Because a later analysis is limited to children continuously enrolled from 1981 to 1984, we also compared this subset with the entire group continuously enrolled in 1981. This subset comprised 270,105 children or approximately 41 percent of those continuously enrolled in 1981. In Table 1, one can see that those continuously enrolled over a 4-year period were somewhat more likely to be AFDC categorically needy cash-assistance children or to be disabled. They were less likely to be AFDC categorically needy with no cash assistance or in the "other" category. They were also less likely to be newborns. Otherwise, they were similar to the larger group.

We also analyzed a child's modal provider type, defined as the provider type that a child saw most often for preventive care during a 4-year period. To create this variable, however, we had to limit the population to those children who remained enrolled in Medi-Cal between 1981 and 1984, so that we could look at their Medi-Cal claims. Thirty percent of children had a pediatrician as their modal provider, followed closely by other primary care physicians (26.7 percent) and nonphysician providers (21.9 percent).

Table 2

Preventive care utilization and expenditure data for children under 15 years of age continuously enrolled in Medicaid: California, 1981

| Utilization or expenditure characteristic | Medicaid | | |
|---|----------|---------|----------|
| | CHDP | Other | Combined |
| Percent of children with preventive visits | 23.7 | 18.9 | 37.5 |
| Total number of preventive visits | 231,858 | 213,453 | 445,311 |
| Total number of children with preventive visits | 155,498 | 123,734 | 246,890 |
| Mean number of preventive visits per child with one or more preventive visits | 1.49 | 1.72 | 1.80 |
| Mean expenditures for preventive visits per child with any preventive visits | \$66.28 | \$40.67 | \$62.13 |

NOTE: CHDP is Child Health and Disability Prevention.

SOURCES: California Department of Health Services: Data from the Child Health and Disability Prevention program; and Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project; data development by Systemetrics/McGraw-Hill, Inc.

In Table 2, it can be seen that overall, only 37.5 percent of children continuously enrolled in Medi-Cal in 1981 had preventive care visits billed to Medi-Cal for that year. It is noteworthy that, despite the availability of CHDP to provide preventive care visits to children of all ages, only 23.7 percent of the continuously enrolled children had any preventive care visits under CHDP in 1981. Among children who had any preventive care visits, children averaged 1.49 CHDP visits for the year, with an average CHDP expenditure per child of \$66 for the year.

As previously mentioned, we expected that not all preventive care was billed through the CHDP program. As seen in Table 2, 52 percent of the preventive care visits were under CHDP billing. Overall, children with any preventive care visits averaged 1.8 preventive care visits at an average cost of \$62 per child per year.

In 1981, nearly 19 percent of Medi-Cal children received preventive care services that were billed through other Medi-Cal claims, rather than through the CHDP program. Although more preventive care visits were delivered through the CHDP program (52 percent), children who had preventive care services billed through other Medi-Cal claims averaged 1.7 preventive care visits in 1981, slightly more than the 1.5 billed through CHDP. Preventive care expenditures to primary care providers averaged \$40 per year per child, significantly less than average CHDP expenditures of \$66 per child per year.

Whether or not a Medi-Cal-enrolled child received preventive care in 1981 varied by age (Table 3). Younger children (infants and children ages 1-4) were more likely than older children to have preventive care visits, despite the fact that 45 percent of younger children had no visits. Between 65 and 85 percent of younger children ages 5-15 had no preventive care visits.

Modal preventive health care sites, those sites where children received most of their preventive care, are shown in Table 4. Similar to the modal provider type variable, this analysis was also limited to those children who were continuously enrolled in the Medi-Cal program from 1981 through 1984. Among those children continuously enrolled, the modal site was assigned by combining preventive health care claims from 1981 through 1984. We were unable to categorize site of care for nearly 25 percent of claims, as it was either missing or unclassifiable. As it is not a required field for payment, it is often left blank. However, where site was available, the following statements may be made:

- Nearly 18 percent of children received preventive care in physicians' offices while almost 40 percent of children received preventive care from a physician but in an unknown site.
- Seven percent received preventive care from clinics.

The types of CHDP screens that children received in 1981 are described in Table 5 for children ages 1-4. Only 35 percent of the continuously enrolled preschool children ages 1-4 had a CHDP screen for a history and physical in 1981.

Immunization status of children ages 1-4 who were screened through the CHDP program in 1981 is shown in Table 6. Sixty-six percent of CHDP visits showed that the child was up to date on immunization for polio and DPT (diphtheria, pertussis, and tetanus), and 61 percent

Table 3

Percentage of children under 15 years of age continuously enrolled in Medicaid, by number of preventive care visits and age of child: California, 1981

| Number of preventive care visits | Total | Age in years | | | | |
|----------------------------------|---------|----------------------|---------|---------|---------|--------|
| | | Under 1 ¹ | 1-4 | 5-8 | 9-12 | 13-15 |
| | | Percent | | | | |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 0 | 62.5 | 45.2 | 44.4 | 65.6 | 80.2 | 83.3 |
| 1 | 22.2 | 17.5 | 31.0 | 27.0 | 16.4 | 13.8 |
| 2 | 7.9 | 13.2 | 14.1 | 5.5 | 2.5 | 2.1 |
| 3 | 3.7 | 9.9 | 6.2 | 1.3 | 0.6 | 0.5 |
| 4 | 1.9 | 6.6 | 2.6 | 0.4 | 0.1 | 0.1 |
| 5 | 0.9 | 3.7 | 0.9 | 0.1 | 0.04 | 0.1 |
| 6 or more | 0.9 | 4.0 | 0.8 | 0.1 | 0.06 | 0.04 |
| Number of children | 654,881 | 111,098 | 166,437 | 142,858 | 138,136 | 96,352 |

¹Enrollment may be less than 12 months for infants; full 12 months of enrollment for all other age groups.

SOURCES: California Department of Health Services: Data from the Child Health and Disability Prevention program; and Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project; data development by SysteMetrics/McGraw-Hill, Inc.

Table 4

Modal preventive health care sites of children under 15 years of age continuously enrolled in Medicaid, by site: California, 1981-84

| Site | Percent having modal site |
|---------------------------------|---------------------------|
| Total | 100.0 |
| Physician office | 17.6 |
| Clinic | 7.3 |
| Hospital | 5.0 |
| Physician provider site unknown | 38.8 |
| Nonphysician provider site | 2.2 |
| Other site | 22.0 |
| Missing | 6.9 |

NOTE: Modal preventive health care site is calculated over a 4-year period (1981-84).

SOURCES: California Department of Health Services: Data from the Child Health and Disability Prevention program; and Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project; data development by SysteMetrics/McGraw-Hill, Inc.

Table 5

Percent of children 1-4 years of age continuously enrolled in Medicaid receiving screens under the California Health and Disability Prevention program, by type of screen: California, 1981

| Screen types | Percent of children screened |
|-------------------------------------|------------------------------|
| History and/or physical examination | 35.2 |
| Dental | 34.7 |
| Nutrition | 34.9 |
| Vision | 9.4 |
| Hearing | 8.8 |
| Hemoglobin or hematocrit | 22.7 |
| Tuberculosis | 21.6 |
| Urine | 14.0 |

SOURCES: California Department of Health Services: Data from the Child Health and Disability Prevention program; and Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project; data development by SysteMetrics/McGraw-Hill, Inc.

Table 6

Number and percent of Child Health and Disability Prevention (CHDP) visits, and immunization status, for children 1-4 years of age, by type of immunization: California, 1981-84

| Immunization | Child's immunization status ¹ | | | |
|--------------------------------------|--|-------------------|---|-------------------|
| | Immunizations are up to date | | Immunization received but status not up to date | |
| | Number of visits | Percent of visits | Number of visits | Percent of visits |
| Polio | 55,976 | 65.8 | 5,226 | 6.1 |
| Diphtheria, pertussis, tetanus (DPT) | 55,883 | 65.7 | 5,339 | 6.3 |
| Measles, mumps, rubella | 52,038 | 61.2 | 0 | 0 |

¹"Up to date" describes children who received an immunization on that visit and were, at that point, up to date for their age; it also describes children who did not receive an immunization on that visit either because they were already up to date or because immunization was contraindicated or refused.

NOTE: It is possible that some children received their immunizations from county immunization clinics. The denominator is the number of CHDP visits, not the number of children used in the other tables. Visits not billed under CHDP were excluded.

SOURCES: California Department of Health Services: Data from the Child Health and Disability Prevention program; and Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project; data development by SysteMetrics/McGraw-Hill, Inc.

were current for MMR (measles, mumps, and rubella).

Because the Medi-Cal immunization codes do not distinguish the type of immunization received, only that an immunization had been given, we are unable to present comparable type-of-immunization information for those children whose immunizations were not billed through CHDP.

We conducted a multivariate analysis that described the differences between those children that received preventive care in 1981 and those children that did not, using the SAS logistic regression (SAS Institute, 1985). We also developed a model that examined which variables predicted the number of preventive care visits a child received for those children who had at least one preventive care visit, using the SAS regular regression

procedure. The predictor variables were: age (each age group compared with children ages 5-8), aid category (each aid category compared with AFDC cash children), and residence (semi-urban and rural compared with urban) status.

For this analysis, the children were divided into two groups: those who were enrolled in Medi-Cal from 1981 through 1984 and those who were enrolled only throughout 1981. For economy of analysis, random samples were drawn from the population of children who were continuously enrolled in the Medi-Cal program in 1981. Separate samples of 5,000 from each of 5 age groups were created for each of the analysis groups (enrolled in 1981-84 and enrolled in 1981 only).

In Table 7, it can be seen that infants and children ages 1-4 were significantly more likely to have preventive care visits than children ages 5-8. Older children ages 9-15 were least likely to have any preventive care visits. Disabled children were more likely than AFDC cash assistance children to have preventive care visits, and urban children were more likely than semi-urban children to have preventive care visits. These latter two findings were apparent among the children enrolled continuously from 1981 through 1984, but not for the group enrolled in 1981 only.

In Table 7, we also examine the number of preventive care visits of children who had any preventive care visits in 1981. Similar to the logistic regression model, this analysis shows that infants and young children ages 1-4 were more likely than children 5-8 to have a higher number of preventive care visits. These findings are consistent with the CHDP schedule of preventive care visits that recommends more visits for younger children and fewer visits for older children. Children in the AFDC

no cash aid category had fewer preventive care visits than children in the AFDC cash aid category, although this was apparent for the group continuously enrolled in 1981 only. Urban children were more likely to have more preventive care visits than either semi-urban or rural children. In general, the findings for the group continuously enrolled from 1981 through 1984 and for those enrolled in 1981 were quite similar.

We developed a predictive model for the receipt of preventive care in 1984, based on personal characteristics of the Medi-Cal population and characteristics of care received in an earlier timeframe, 1981 through 1983. We analyzed each of the five age groups separately using the samples constructed for the group enrolled continuously 1981-84.

For the youngest two age groups, those who were under 1 and age 1-4 in 1981, we examined the variables that predicted whether or not the children tended to receive preventive care in 1984 (the probability of preventive care), as well as the number of preventive care visits for those who received any in 1984. For the three age groups over 4 in 1981 (i.e., 5-8, 9-12, 13-15), we looked only at predictors of whether or not preventive care was received in 1984. Note that at the time the outcome for preventive care was measured in 1984, the groups were ages 3, 4-7, 8-11, 12-15, and 16-18. The CHDP schedule for preventive care for the older age groups did not recommend preventive care visits most years, and therefore, relatively few children received more than one or two.

Most of the variables in the model have been used in previous tables. They include: aid category (each group compared with the largest, AFDC cash), gender (male compared with female), residence (semi-urban and rural

Table 7

Predictors of probability of preventive care visits and predictors of number of preventive care visits, by selected demographic characteristics: California, 1981

| Independent variables* | Beta estimates by enrollment group | | | |
|--|-------------------------------------|---------------------------------------|-------------------------------------|---------------------------------------|
| | Probability of visits ¹ | | Number of visits | |
| | Group enrolled continuously 1981-84 | Group enrolled continuously 1981 only | Group enrolled continuously 1981-84 | Group enrolled continuously 1981 only |
| Age group (compared with children 5-8 years of age) | | | | |
| Under 1 year | **2.02 | **1.33 | ** .71 | ** .58 |
| 1-4 years | **1.14 | ** .96 | ** .23 | ** .26 |
| 9-12 years | -.34 | **-.63 | — | — |
| 13-15 years | **-.75 | **-.62 | -.05 | — |
| Aid category (compared with AFDC-cash) | | | | |
| AFDC no cash | — | — | — | **-.08 |
| Disabled | ** .89 | — | — | — |
| Other | — | — | — | — |
| Not classed | — | — | — | — |
| Semi-urban versus urban | **-.50 | — | -.03 | **-.07 |
| Rural versus urban | — | — | **-.16 | **-.10 |
| Intercept | **-.59 | **-.60 | ** .21 | ** .19 |
| Adjusted R ² | | | .264 | .187 |

*Variables significant at $p < .05$ are noted.

**Significant at $p < .01$.

¹Dependent variable is preventive care visits: 0=no visits, 1=1 or more visits.

NOTE: AFDC is Aid to Families with Dependent Children.

SOURCES: California Department of Health Services: Data from the Child Health and Disability Prevention program; and Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project; data development by Systemetrics/McGraw-Hill, Inc.

residence are each compared with urban), and modal provider type (each compared with the pediatrician). In an effort to control possible differences in patterns of care between the population that received preventive care and the group that did not, the number of ambulatory illness visits (not those defined as preventive) in the years 1981-83 was included.

The measure of continuity of care similar to that developed by Breslau and Reeb (1975) was included, i.e., the percentage of all ambulatory visits to the modal provider of care. It was chosen because of the simplicity of construction of the measure and evidence that it was highly correlated with other commonly used measures of continuity (Flint, 1987). Continuity of care was measured separately for four different levels of visits, as we anticipated that continuity might have a different effect at various visit levels. To control for the effect of being in one rather than another visit group, we included dummy variables indicating the visit group that characterized the child. The effects of these variables are not shown, because their interpretation is similar to the interpretation of an intercept term and was not particularly meaningful in this analysis. Finally, preventive care in the earlier 3 years was included as a dichotomous variable,

measuring whether or not preventive care was received.

Aid category, gender, and illness visits in 1981-83 were included to control for possible differences between the population of children that received preventive care and those that did not. Illness visits might measure a family's greater or lesser likelihood to use physician services, for whatever reason. Residence was included as a control but also to find out if children from rural and semi-urban areas continued to have poorer access to preventive health services as evidenced in Table 7. We expected children with good continuity of care to be more likely to receive preventive care. We also expected children who had pediatricians as their modal provider to be more likely to receive preventive care than those who saw specialists or nonphysician providers. Finally, we anticipated that receiving preventive care in the earlier years, 1981-83, would predict receiving it in the final year of analysis, 1984.

The procedure used to analyze the probability of receiving preventive care was the SAS logistic procedure using a stepwise option. For the equations predicting the number of visits for the groups under 1 year of age and 1-4, the regression procedure was used with a stepwise option (SAS Institute, 1985). Although the coefficients

Table 8

Predictors of probability of preventive care visits in 1984 and determinants of number of preventive care visits for youngest age groups for children continuously enrolled in Medicaid by age: California, 1981-84

| Independent variables* | Beta estimates by age in 1981 | | | | | | |
|--|------------------------------------|------------------|------------------------------------|------------------|------------------------------------|------------------------------------|------------------------------------|
| | Under 1 | | 1-4 | | 5-8 | 9-12 | 13-15 |
| | Probability of visits ¹ | Number of visits | Probability of visits ¹ | Number of visits | Probability of visits ¹ | Probability of visits ¹ | Probability of visits ¹ |
| Population characteristics | | | | | | | |
| Aid category (compared with AFDC cash): | | | | | | | |
| AFDC no cash | -.35 | — | -.55 | — | — | — | — |
| Disabled | — | — | — | — | .51 | — | — |
| Other | — | .08 | — | ** .14 | — | ** .41 | — |
| Not classed | — | — | — | — | — | — | — |
| Gender (male versus female) | — | — | — | — | — | — | — |
| Semi-urban versus urban | — | ** -.09 | — | ** -.09 | — | — | — |
| Rural versus urban | — | — | — | -.09 | — | — | — |
| Other characteristics | | | | | | | |
| Illness visits 1981-83 | — | — | ** .15 | — | — | — | — |
| Modal provider types 1981-83 (compared with pediatrician) | | | | | | | |
| Internal medicine | — | ** .24 | — | ** .21 | — | — | — |
| Other primary care | — | — | — | ** .06 | ** -.53 | ** -.42 | ** -.28 |
| Specialist physician | — | — | — | ** .14 | — | — | — |
| Nonphysician | — | ** .09 | — | .05 | ** -.29 | — | — |
| Unspecified (missing included) | — | — | — | — | -.26 | — | — |
| Continuity of care 1981-83 | | | | | | | |
| For 0-5 visits | — | — | — | — | — | * -.32 | — |
| For 6-10 visits | — | — | — | — | — | — | — |
| For 11-20 visits | — | — | — | — | — | — | — |
| For 21 or more visits | — | — | — | — | — | — | .43 |
| Previous preventive care 1981-83 | ** .09 | ** .02 | ** .13 | ** .03 | ** .54 | ** .49 | ** .72 |

*Variables significant at $p < .05$ are noted.

**Significant at $p < .01$.

¹Dependent variable is preventive care visits: 0=no visits, 1=1 or more visits.

NOTE: AFDC is Aid to Families with Dependent Children.

SOURCES: California Department of Health Services: Data from the Child Health and Disability Prevention program; and Health Care Financing Administration, Office of Research and Demonstrations: Data from the Tape-to-Tape project; data development by Systemetrics/McGraw-Hill, Inc.

for the stepwise procedures are reported, all the models were also run without the stepwise option to see what difference it would make. There was very little.

The results are presented in Table 8. For the youngest two age groups (under 1 and 1-4), the AFDC no cash group was less likely to receive preventive care than the AFDC cash group (beta = $-.35$ and $-.55$ for the two groups, respectively). The "other" group for these youngest two age groups seemed likely to receive more preventive care visits. In general, significant results on aid category variables are difficult to interpret and, where they do not form a pattern, may be random results. However, it appears that young semi-urban and rural children were likely to receive fewer preventive care visits than were urban children. Illness visits were significant only for those age 1-4, with those with more illness visits in the past more likely to receive preventive care.

The modal provider did not seem to have an effect on the likelihood of receiving preventive care for the youngest two age groups, but for the children 5-8 and over, where there was a significant effect, children with providers other than pediatricians were more likely to receive no preventive care. For all the groups age 5-8 and over, children with an other-primary-care physician were less likely to receive preventive care than children whose modal provider was a pediatrician. Also, children age 5-8 with a nonphysician or unspecified modal provider were less apt to receive preventive care than children with a pediatrician.

For the younger age groups, under 1 and 1-4, among those who had preventive care visits, having a nonpediatrician as a modal provider seemed to lead to receipt of more visits. An examination of the raw frequencies of visits for each group with each modal provider suggested that the differences were not great, albeit significant. It was difficult to discern a pattern indicating whether the differences were greater at the low or high end of the scale.

Continuity of care had no consistent effect, and the two significant betas could well be random results. Receiving preventive care in the earlier years, 1981-83, had a very strong, consistent effect on receiving care in 1984. Apparently, those who received preventive care in the earlier years were more likely to continue to receive it.

Discussion

Our findings support earlier studies that show that the majority of Medicaid children have not received preventive care through the EPSDT program and even fewer have received preventive care services billed through other Medicaid claims (National Health Policy Forum, undated). More than 60 percent of California children under 15 years of age who were continuously enrolled in Medicaid had no preventive care visits in 1981. Children outside of urban areas received fewer preventive care visits than did urban children. It is possible that some preventive care received by children under Medicaid was not apparent in this study because it was delivered at a site that did not bill Medicaid. However, it is unlikely that unbilled visits would have more than a marginal effect on these results.

For children ages 5 or over in 1981 (8 or over in 1984), having a pediatrician as a modal provider seemed to lead to a higher probability of receiving preventive care. This may be because pediatricians are more familiar with the schedule of preventive care visits recommended under CHDP.

Congress took major steps recently to improve the EPSDT program through the Omnibus Budget Reconciliation Act (OBRA) of 1989. The new law, which took effect on April 1, 1990, aims to strengthen identified weaknesses of the EPSDT program by expanding the pool of eligible providers and allowing abbreviated screenings and screenings outside the normal schedule of visits.

OBRA 1989 significantly expands EPSDT benefit coverage for children by requiring States to provide any service allowed under Federal Medicaid law that is necessary to treat a condition identified during a screen, whether or not the service is included in the State's Medicaid plan. In addition, the law also allows screenings to be performed at intervals other than those specified in the State periodicity schedule, when medically necessary. The new law, which allows greater flexibility in enrolling EPSDT providers, should improve Medicaid children's access to pediatric care and make it easier for them to be screened. However, without outreach efforts in the States, many children may continue to fall through the cracks.

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