ANALYSIS OF MEDICAID PROVIDER SUPPLY: OVERALL, PREVENTIVE CARE, AND DENTAL SERVICES

YEAR TWO REPORT

HCFA Contract No: 500-92-066

Prepared for:

Feather Davis, PhD
Project Officer
Office of Research and Demonstrations
Health Care Financing Administration
ORD C3-22-26
C3-21-06
7500 Security Boulevard
Baltimore, MD 21244-1850

Prepared by:

E. Kathleen Adams, PhD
Rollins School of Public Health
Emory University
1518 Clifton Road, NE
Atlanta, GA 30322

Anita J. Chawla, PhD
The MEDSTAT Group, Inc.
4401 Connecticut Avenue, NW, Suite 400
Washington, DC 20008

Linda Graver
The MEDSTAT Group
5425 Hollister Avenue, Suite 140
Santa Barbara, CA 93111

June 1996

TABLE OF CONTENTS

LIST OF APPENDICES

A. INTRODUCTION AND BACKGROUND

The provision of mainstream health care services through the Medicaid program depends to a great extent on the availability of providers willing to serve Medicaid enrollees on an ongoing basis. A sufficient supply of providers, including individual office-based physicians as well as those in group and clinic settings, is necessary for enrollees to have access to services in the appropriate settings when needed and to allow for continuity of care. This is especially true for the children enrolled in Medicaid as they have greater need for contact with the health care system in their developmental years. As the Medicaid program continues to phase-in newly eligible children residing in families with income under the poverty level it is important to assess the availability of providers to serve them.

A particular need of poor children is the early detection, diagnosis and treatment of dental problems. The lack of sufficient numbers of dental providers was identified as a major problem in the earlier State site visits that were part of the initial project, *The Comparative Study of the Use of EPSDT and Other Preventive and Curative Health Care Services by Children Enrolled in Medicaid* (Hill and Zimmerman, 1994). This has also become an issue at the national level; a study conducted by the Office of Technology Assessment (OTA) identified dental provider participation as a major barrier to Medicaid children's receipt of preventive dental care. As an extension to the initial project we investigated the supply of dentists in each of the study States over the same time period.

The overall goal of the provider supply analysis reported herein is to examine the effect of changes implemented by the Omnibus Budget Reconciliation Act of 1989 (OBRA89) that pertain to Medicaid and EPSDT providers. By examining both 1989 and 1992 data from four State Medicaid programs[1], we can observe the overall patterns of change in Medicaid provider participation and supply. The inclusion of dentists in this Year Two report adds significantly to our understanding of the provider supply system in each of the study States.

Recall that the major provisions of the legislation related specifically to providers were that:

- States allow participation by providers who wish to furnish one or more but not all diagnostic and treatment services; and
- States set payment rates to ensure that the availability of obstetrical and pediatric services for Medicaid recipients are comparable to that of the general population within the same geographic area.

The latter is often referred to as the "equal access" provision and was perhaps the most important part of the legislation affecting providers. With the ongoing debate in Congress about the future direction of

[1]The four study states are California, Georgia, Michigan, and Tennessee.

Medicaid, the effects of these provisions will be of great interest. In particular, the National Governor's Association (NGA) has recommended that the "equal access" provision be repealed. The descriptive analysis presented here, as well as the planned multivariate analysis, will inform policy makers about the effect of such a repeal.

Other aspects of OBRA89 that should have an indirect effect on providers include those aimed at the children enrolled in Medicaid. These provisions should have increased Medicaid demand for providers' services. For example, the law required States to provide all Medicaid-allowed treatment to correct problems identified during EPSDT screenings, even if the treatment was not otherwise covered under the State's Medicaid Plan. This, and the mandated changes in the periodicity schedules and children's participation rates, should have increased demand and hence, physician participation. For dentists, OBRA89 specified that State periodicity schedules had to meet "reasonable standards of medical and dental practice and be established after consultation with recognized medical and dental organizations involved in health care." Because outreach activities are often tied to these periodicity schedules, changes in them are likely to have an impact on child and provider participation in the program. OBRA89 also specified that dental examinations be provided more frequently than physical exams for older children.

We expect that these changes increased the level of provider supply in both Medicaid in general, and the EPSDT program in particular, over the study period. We also expect other factors known to affect provider supply and participation (e.g., other payers' fees, competition, etc.) to have influenced patterns seen over time. While the analyses presented in this Year Two report provide information on cross-sectional estimates from 1989 to 1992, our Year Three provider report will emphasize factors affecting provider supply and participation through use of multivariate analyses.

1. Background

a. Physicians

Much of the earlier work on provider supply in Medicaid has focused on the impact of reimbursement levels on participation (Hadley, 1979; Sloan, Mitchell and Cromwell, 1978; Held and Holahan, 1985; Mitchell, 1991). A consistent finding among these studies has been that the level of reimbursement for physician services is an important determinant of providers' decisions to participate in Medicaid. An important study (Long, *et al.*, 1986) on this issue noted that higher physician fees were not associated with the probability of seeing a physician nor the level of use among publicly and privately insured users. Rather, they were associated with differences in the *site of care*. That is, Medicaid enrollees were able to obtain

services from non-office based physicians in areas where fees were lower. A more recent study (Decker, 1993) also found that higher fees were associated with more use of office-based care and less use of hospital-based care. Thus, when we consider access to physician services for Medicaid children, we must consider all sites of care.

Indeed, some argue that it is only by guaranteeing access through alternatives to office-based settings that there will be a sufficient number of providers in areas such as inner-city environments where the supply of private office-based physicians is low (Fossett and Peterson, 1989; Fossett *et al.*, 1992). One study of Washington, D.C. area physicians found that the supply of doctors in the metropolitan area was characterized by excesses of specialists but shortages of family doctors and, in particular, scarcities of doctors in many communities that need them most. In the affluent, largely non-minority areas of Northwest Washington and Bethesda, MD, there is one pediatrician for every 400 children while in the poor, mostly black neighborhoods ten miles to the southeast there is one pediatrician for every 3,700 children (Goldstein, 1994). As this author notes, there are locational barriers to access for the poor that are determined by (1) where doctors want to work; and (2) whether potential patients are able and willing to travel to existing practices.

Access provided through settings other than physicians' offices (e.g., clinics, county health departments, outpatient departments, etc.) has always been an issue for Medicaid recipients. As noted, a much earlier study (Long *et al.*, 1985) provided evidence that higher relative fees tended to shift the site of care rather than affect the overall level of visits. Non-office based care has also become important in terms of policy deliberations. For example, the OBRA89 legislation expanded the number of clinics receiving revenues under Medicaid, as well as the level of revenues received, in response to concerns about access to primary care by the uninsured and underinsured. Currently, there is an issue of whether States can count community health centers as obstetric or pediatric providers to meet the "equal access" requirements of the OBRA89 legislation because they play such an important role and because many States have expanded their funding (PPRC,1993). It is important therefore to consider the role that these institutional providers, as well as individual providers, play as we measure changes in the extent of provider participation in Medicaid.

The American Academy of Pediatrics (AAP) recently reported improvements in pediatrician participation in Medicaid. Based on a member survey, the AAP found that, after a steady decline between 1978 and 1989, pediatrician participation began to rise. In 1993 it reached its previous high level of 85.1 percent (Yudkowsky, 1994). Moreover, there was less evidence of restricted practice volume; the percentage of a pediatrician's patients who were Medicaid beneficiaries increased from an average of almost 16 percent

in 1978 to almost 29 percent in 1993. It is likely that we will see some of these changes in physician participation in our own study period.

b. Dentists

Our review of studies on dental providers indicates that, as with physicians, issues relating to provider supply and Medicaid participation are noteworthy. Studies have cited several reasons why dentists either do not participate in Medicaid or limit their practices: low reimbursement rates, administrative burden, and general difficulties associated with serving a disadvantaged population (Venezie and Vann, 1993; Damiano *et al.*, 1990; US Congress 1990). Specifically, payment denials, need for prior authorization for the plan of care, paperwork burden, lack of conformity with community standards of care, and broken or canceled appointments contribute to low participation rates.

As a group, pediatric dentists were found to be the most active participants in the North Carolina Medicaid program during 1990-91 (Venezia and Vann, 1993). This study reported that fewer than half of general dentists in North Carolina filed a Medicaid claim during the year while more than 90 percent of pediatric dentists did. They also reported, however, that 75 percent of pediatric dentists limited their Medicaid practice. Another study also found problems associated with the availability of specialists' services for Medicaid children, including those delivered by pediatric dentists and periodontists (US Congress, 1990).

In our review of the literature, we also identified some studies of dental workforce and specialty distribution. The ratio of active dentists to population (100,000) increased nationally from 39.0 in 1900 to 56.4 in 1990; in 1992 the dentist to population ratio ranged from a low of 41.1 in Alabama to 69.3 in New Jersey (Waldman, 1994a). One study examined the supply of *pediatric* dentists across the 50 States (Waldman, 1994b). This study indicated that, nationally, the number of pediatric dentists per 100,000 children grew from 4.7 in 1982 to 5.3 in 1991. Of the four States included in the analyses presented in this report, Michigan was the only one with a ratio below the national average by 1991; there was no change in this State's ratio (3.2) between 1982 and 1991.

The study conducted by the Office of Technology Assessment (OTA) included two components to help identify barriers to Medicaid children's receipt of dental care (US Congress, 1990). At an OTA workshop, dental providers and representatives of seven State Medicaid programs and dental provider representatives identified barriers to care in their States. OTA then surveyed a random sample of private practice dentists in each sample State. Many of the barriers identified in the study can be characterized as disincentives for provider participation. Difficulties in accessing transportation to dental providers, lack of

education on the importance of dental care and negative attitudes about dentistry, and failure of outreach were also identified as deterring Medicaid children and their caregivers from seeking dental care.

The Office of Inspector General recently conducted a study to identify reasons for low utilization of EPSDT dental services among Medicaid-enrolled children (OIG, 1995). OIG interviewed dental public health representatives in all States and the District of Columbia, a sample of Head Start health directors, State and national dental society representatives, private practice dentists, advocates, and other experts. The study verified that few children receive EPSDT dental services. In the vast majority of the States, low utilization was attributed to relatively low dental provider participation in the Medicaid program. Inadequate reimbursement by Medicaid was cited as the most significant deterrent to delivering services to Medicaid enrollees. Other problems that were mentioned included delays in reimbursement, payment denials, and requirements for obtaining prior authorization for general care.

Geographic data on specialty distribution indicate that professionally active dentists engaging in general practice have become increasingly more uniform across States, but this trend has not held true for dental specialists. Consequently, underserved populations continue to exist in many States (Waldman, 1994). Our analysis of dentist supply and Medicaid participation, particularly with respect to children's dental care, will contribute to the literature by providing information on dental manpower, specialty distribution, volume of service provision, and clinic provider supply.

2. Issues to Be Addressed

This report adds significantly to our understanding of the effects of the OBRA89 legislation by examining provider supply, inclusive of dental providers, in the 1989 and 1992 time period. To complete the descriptive analysis, we have derived essentially the same measures of provider participation and supply that were presented in the Year One report with some revisions made in response to comments from the Technical Advisory Panel (TAP); these are noted in the methodology section of this report. We have included similar measures and analyses for the dental providers in the study States.

We have addressed several research questions that are pertinent primarily to non-dental providers.

- What are the numbers and relative roles of office and non-office based providers of Medicaid services for all children's services in each State and year? for basic preventive and EPSDT services?

- What are the numbers and relative roles of office and non-office based providers of Medicaid services for basic preventive and EPSDT services in each State and year?
- What has been the growth in the number of preventive care providers, EPSDT providers, and providers of preventive care who were not participating in the EPSDT program?
- Has there been growth in the average Medicaid practice among pediatricians, primary care physicians, other physicians, and EPSDT participating physicians? How do the patterns compare by physician group?
- What are the Medicaid participation rates of physicians in each study State and each year?
- Are there counties in 1992 which appear to have "shortages" in terms of overall primary care physicians, child care providers or Medicaid providers? How have shortage patterns changed since 1989?
- What has happened to concentration of children's services provided by physicians? Is there a different pattern for preventive or EPSDT services? Does this vary by urban versus rural area?
- Has there been a change in the concentration of the provision of children's services among certain provider types? Do changes vary according to the provider's geographic location?

While we address some of the same questions as they relate to dental providers, we re-state them here along with other research questions that are specific to our dental analysis.

- What percentage of practicing dentists in the counties of each state treat Medicaid children--i.e., What are the Medicaid participation rates of dentists?
- How do participation rates of dentists vary by degree of urbanization and the overall socioeconomic status of residents in the county?
- How large, on average, are Medicaid dental practices with respect to the number of patients and total amounts paid?
- Are there relatively few providers with very large practices or a larger number with smaller practices?
- Are there counties in which there are "shortages" of Medicaid participating dental providers?
- Can these "shortage" counties be characterized by degree of urbanization or the overall socioeconomic status of county residents?
- What are the trends in provider participation, location and characteristics?
- How many institutional versus individual dental providers serve Medicaid children?

These and related questions are addressed in this report using 1989 and 1992 Medicaid Tape-to-Tape data on claims, enrollment and providers for four States -- California, Georgia, Michigan, and Tennessee.

3. Organization of the Report

The remainder of this report is organized into seven major sections. The first section provides an overview of the State-specific policy changes that we believe will affect provider participation and supply of preventive or EPSDT services from 1989 to 1992. The second and third sections, respectively, describe the data and the methodology used to count and categorize physicians, dentists and other providers, as well as the steps taken to describe other aspects of the provider system (e.g., concentration of services among providers) in both years. The methods section incorporates the refinements made in the 1992 methododolgy.

The fourth section presents the results on changes in the counts of providers (dental and non-dental), by type; practice size as measured by Medicaid payment volume and caseloads (dental and non-dental); and place of service (non-dental). Dental and non-dental providers are grouped by individual and institutional categories, and data are presented by service category. The major service categories for non-dental providers are : 1) all services to children under 21; 2) preventive care services (inclusive of EPSDT); and 3) EPSDT services only. For dental providers the categories include: 1) children's dental services; 2) diagnostic, preventive and therapeutic (and separately); 3) emergency; 4) orthodontics; and 5) other services to children.

The fifth section provides a brief discussion of changes in provider participation rates in each of the study States. The sixth section includes the results of the descriptive analysis of access measures and service concentration in 1989 and 1992. This analysis focuses on changes in enrollee provider ratios, "shortage" counties, and the concentration of service provision among physicians and providers overall as well as dental providers. The seventh and final section summarizes the findings for 1989 and outlines the data and analysis to be included in the Year Three provider report.

We note one other organizational aspect of this report. Due to the volume of numbers generated in our analyses, we have included the full set of tables in Appendices A, B, and C. The reader can refer to these tables for all results on these non-dental providers (Appendices A and B) and dental providers (Appendix C). In order to highlight the major results and patterns seen in the data for both non-dental and dental providers we have included a smaller set of tables in the text which primarily provide measures of

the percentage change in variables between 1989 and 1992. In those instances where we developed new measures in 1992 (e.g., new categories of clinic providers) only the 1992 data are discussed in the text.

B. CHANGES IN STATE POLICY

As we analyze the changes in provider participation and supply, it is imperative that we understand the States' policy changes that may have affected provider supply during the study period. In this section, we first address policies that are directly related to physician reimbursement and then we address policies affecting physicians within each study State. We also provide a synopsis of policy changes related to dental providers in each State.

1. State Policies Affecting Physicians

OBRA89 amended the Section of the Social Security Act that pertains to adequate payment levels within the Medicaid program. This is often referred to as the "equal access" provision. In particular, OBRA89 required that payment levels for obstetrical and pediatric services be sufficient to enlist enough providers so that care and services are available under the plan at least to the extent they are available to the general population within a geographic area. For a great number of States this led to increases in reimbursement levels and/or transition to the Resource Based Relative Value Scale (RBRVS), which rewards primary care relatively more than under old fee for service systems. A recent study by the Urban Institute (Norton, 1995) found that the average Medicaid fee increased by 14 percent between 1990 and 1993 but that Medicaid rates were still lower than Medicare's, averaging 73 percent nationally, once the Medicare Fee Schedule was fully phased-in.[2] Indeed, this report indicated that Medicaid fees, *relative* to Medicare, declined over this time period. Moreover, there was a greater increase in typical obstetrical fee (25 percent) than in a primary care office visit (20 percent). There was also wide variation in these patterns across regions and States.

As part of our multivariate analysis, we will be measuring State-specific changes in the amounts paid by Medicaid relative to that paid by private payers for services and, in particular, preventive care services. However, these measures are not yet available for all States. Preliminary results in Georgia indicate that Medicaid fees have declined relative to private payments over the 1989 to 1992 time period. In the interim, we discuss the State-specific results from the Urban Institute study, along with specific reimbursement policy changes for each study State.

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[2] While there were many services that were included in both the 1990 and 1993 survey by the Urban Institute, the 1993 survey used only 28 services as opposed to the 50 surveyed earlier. In addition the 1993 fees were compared to a fully phased-in Medicare Fee Schedule (1995) rather than the Medicare fees paid in 1993.

a. California

California has historically had low Medicaid reimbursement rates for physicians' services and has made virtually no major changes during our study period; their overall Medicaid fees were estimated as 89 percent below the national average in 1993 (Norton, 1995). In 1990, this State reimbursed approximately 59 percent of the Medicare-allowed amount for services used by the non-elderly (Holahan, 1991) and the new Urban Institute report indicates this percentage had not changed by 1993. California was one of only two States where Medicaid fees actually decreased over the 1990 to 1993 time period (Norton, 1995). While fees are low overall, fees in California's EPSDT program, called the Child Health and Disability and Prevention (CHDP), are generally believed to be competitive and much more reasonable than Medi-Cal traditional program fees (Hill and Zimmerman, 1995). Still, there were no changes in the reimbursement levels for the major CHDP screens between 1989 and 1992 (Hill and Zimmerman, 1995).

Although fees did not increase, California did adopt several initiatives to address the administrative difficulties that often affect physician participation in Medicaid and EPSDT. These included: 1) establishing toll-free telephone lines to answer questions regarding claims and eligibility status; 2) visits by Medi-Cal fiscal agents to providers to train billing personnel;and 3) facilitation of reimbursement of obstetrical providers by establishing a special mailing address and specially trained staff to process their claims.

b. Georgia

Georgia Medicaid is a generous payer relative to other States and has recently made changes in the method of reimbursement to physicians. By 1993, Georgia's fees for the services included in the Urban Institute study were 35 percent *above* the national average. While their study showed a slight decline in Georgia's fees between 1990 and 1993, this was for a particular set of services and, as noted, the decline was from a generally higher than average level of reimbursement. Georgia's Medicaid fees were 12 percent above those of the Medicare program in 1990 and were still above the fully phased-in Medicare fee levels, by 7 percent, in 1993 (Norton, 1995). Georgia also re-oriented fees toward primary care by initiating the RBRVS fee schedule in the latter part of 1992. Relative to private fees, Medicaid fees declined over the 1989 to 1992 time period.

In Georgia, one of the major aspects affecting provider participation in EPSDT is that providers are not allowed to bill for well-child care outside of the EPSDT program. Georgia further tries to encourage the provision of well child care through EPSDT by paying a screen rate that is higher than a comparable office visit. This provision has not changed over the 1989 to 1992 time period although there has been significant

education and outreach to physicians regarding the EPSDT program to encourage their participation. These efforts included: 1) distribution of a recruitment video through the American Academy of Pediatrics (AAP); 2) training new providers and assisting others in billing; and 3) dropping the requirement that screening providers complete a referral form whenever a referral is made (Hill and Zimmerman, 1995). A major change during the study period was the streamlining of claims submission and the institution of electronic billing statewide (including free software for physicians) to speed up payments. Georgia also worked with other providers--school and registered nurses--to become screening providers.

c. Michigan

Michigan's fees levels were generally lower than the national average over the study period in 1992, they were 84 percent of the national average and only 62 percent of Medicare fees (Norton, 1995). Over the 1990-93 time period, however, Michigan Medicaid fees for the services surveyed by the Urban Institute increased by over 16 percent. These increases may be reflected in our findings on physician participation for the 1989-92 time period. Yet, as for the nation, the ratio of Medicaid to Medicare payments in 1993 was actually lower than it was in 1990 (71 percent), based on the fully phased-in Medicare levels used in the Urban Institute report (Norton, 1995). As in Georgia, Michigan oriented fees toward primary care when, in April of 1992, the State implemented a fee schedule based on the Medicare RBRVS.

Historically, virtually the only providers of EPSDT services in Michigan were the public health departments. This had created a great deal of resentment among physicians toward the State and the Department of Public Health. Perhaps the most significant response by Michigan to the OBRA legislation was the development in September 1990 of a two-tiered EPSDT system which consisted of designating both "comprehensive" and "basic" EPSDT screens and providers in September 1990. Essentially, preventive or well-child visits billed to Medicaid in a physician's office would be considered "basic" screens. In addition, the Michigan Medicaid program maintained, through its fee schedule, financial incentives that would reward providers for obtaining certification as "comprehensive" providers. These fees were set significantly higher than those paid for "basic" providers.

d. Tennessee

In 1990, Tennessee's Medicaid fees were already above Medicare levels by an estimated 7 percent (Holahan, 1991). The Urban Institute's recent survey indicates that Medicaid fees in Tennessee increased significantly, by almost 46 percent, during the 1990-93 time period. By 1993, Tennessee, had fees that were 15 percent above the national average, and fees were only slightly lower than Medicare fee levels, on

average (Norton, 1995). This period was, of course, prior to the implementation of the Tenncare managed care program in that State.

Like Georgia, the local public health infrastructure in Tennessee plays an important role in the EPSDT provider system. Unlike Michigan, however, the EPSDT provider system has always been a public/private partnership with the local health departments serving as "providers of last resort." To help improve physician participation the State hired a pediatrician in late 1992 to develop a number of strategies for physician recruitment and retention. While these strategies included simplifying billing, check off sheets to help physicians with completing screens, simplifying the EPSDT provider manual and direct provider recruitment, these were only in the developmental stages at the time of the site visit (Hill and Zimmerman, 1995).

2. State Policies Affecting Dentists

Dental care is provided as an optional benefit for adult Medicaid recipients. However, States are required to provide dental services to Medicaid eligible children under age 21 to comply with EPSDT requirements. Allowed services under each State's program are detailed in each State's dental provider manual. Variation in children's utilization of dental services among States is most likely a function of differences in covered services and Medicaid eligibility in addition to differences in provider supply and Medicaid participation.

We identified changes in Medicaid reimbursement in Georgia, California, and Michigan between 1989 and 1992. Specifically, there were fee increases for specific dental procedures. We identified information on these fee increases in the Medicaid provider manuals for each of the study states.

In California, there was a rate increase for Medicaid reimbursement to participating dentists, effective September 1, 1991. While the percentage increase for many procedures was significant (e.g., as much as 170.86 percent for subgingival curettage and root planing, per treatment), the fees were still quite low. For example, reimbursement increases for an initial examination were 29.10 percent (to $12.07), for prophylaxis (through age 12) 65.57 percent (to $19.34), and for prophylaxis including topical application of fluoride (beneficiaries age 5 and under) $20.32 percent (to $21.06). Maximum allowances were increased again in 1992 (November 1, 1992), but this latest fee increase would not be expected to have affected provider participation between 1989 and 1992.

In Georgia, there were a few changes in reimbursement to dental providers during the study period. In 1989 (effective January 1), reimbursement rates were increased 4 percent. Maximum allowable fees for seven procedures were increased again in 1992 (effective January 1). In addition, the $150 service limit was increased to $300 per recipient.

Michigan increased reimbursement for particular services, effective August 1, 1990. There was an increase of 22 percent for oral examinations (initial, periodic, and emergency), an increase of 26 percent for oral prophylaxis for adults (ages 14-99), and an increase of 39 percent for oral prophylaxis for children (ages 1-13). These rate increases were implemented as a result of a $2 million allocation for dental access out of $10 million allocated in the 1989-90 State fiscal year appropriations for enhancing rates to increase access to physician, home health, and dental services. In addition, in 1990, Michigan revised its coding such that initial examination, prophylaxis, and radiographs were unbundled and service-specific procedure codes for these procedures were created; existing codes for oral prophylaxis were retained. Finally, effective August 1, 1990, Michigan implemented a 2.0 percent fee increase for reimbursement levels for fee-for-service providers.

While the information in changes in reimbursement indicates that Medicaid programs increased reimbursement with the objective of increasing participation, and thereby access, Medicaid payments for dental services, as for physician services, generally fall well below providers' usual charges. An American Dental Association (ADA) study of pediatric dentists' participation in North Carolina Medicaid found that North Carolina paid approximately 70 percent of dentists' charges and approximately 58 percent of the mean fee (Venezie and Vann, 1993). These percentages for general dentists were 66 percent and 56 percent, respectively. Consequently, the fee increases that occurred during the study period may not have had a tremendous impact on dental provider participation.

C. DATA SOURCES

A variety of data sources were used in compiling this report. The primary source is the Medicaid Tape-to-Tape data. These data were used to derive numbers of both non-dental and dental providers for the two years. Other major data sources included the Area Resource File (ARF) and the American Dental Association's Distribution of Dentists Database. Further description of each of these is included in the following text.

1. Medicaid Tape-to-Tape Data

The primary data for the analyses presented in this report are the Tape-to-Tape data for 1989 and 1992. The Tape-to-Tape data contain complete information on all enrollees, claims and providers of Medicaid services in the four States studied: California, Georgia, Michigan and Tennessee. To achieve all of the goals of the provider analysis we used the outpatient claims file, the enrollment file and the provider file for each State. We also accessed the dental claims files. We identified "active" providers as those who submitted any claim during the year. We also used the claims files to identify the age of enrollees served and to derive measures of providers involved in certain types of service provision (e.g., preventive care, EPSDT, dental, etc.). Claims for all enrollees were used in some instances to derive overall measures of physician participation but because we focus on the child population, claims for all children under age 21 were used for the majority of provider counts, both non-dental and dental. We note that the same exclusions made in the child participation analysis (Herz *et al.*, 1994) were made here: 1) institutionalized children; (2) children covered under Medicaid capitated health plans, and (3) children with dual Medicare and Medicaid coverage.

Although there are problems (e.g., multiple identification numbers, separating out groups from individual physicians, lack of specialty information, etc.) in using claims data to measure physician and/or other provider participation in Medicaid, these problems have been successfully addressed in some States and recent studies (Lewis-Idema, 1992; Fox *et al.*, 1992). For example, the Texas Medicaid program is able to use their claims system to count physicians, in solo and group settings, to compare the service provision of each to regional peer groups, estimate the percent of comprehensive visits for new patients and high risk antepartum visits, etc. (Lewis-Idema, 1992). A study based on Maryland claims data (Fox, 1992) documented an increase in provider participation and deliveries in response to a significant increase in reimbursement fees for deliveries. Two recent studies based on Tape-to-Tape Tennessee data successfully examined the impact of fee increases implemented in 1986 in that State (Adams, 1994; Gruber, Adams, Newhouse, 1996). In addition, while the use of claims data can be problematic, physician survey data has been shown to result in an overstatement of the extent of their Medicaid participation (Kletke *et al.*, 1985).

2. State Medicaid Program Provider Files

The raw provider file in each State contains records for providers who have enrolled to serve Medicaid enrollees at some time in the past. From this, the uniform provider file within Tape-to-Tape is created; it contains a record for all providers who have billed Medicaid sometime during the year. This file contains information on the type of provider (e.g., physician, clinic, hospital, dentist, etc.), dollars billed during the year, name, address and other characteristics (e.g., bed size for hospitals, specialty provider type for physicians). The provider files are organized by an identification number (ID), which is largely unique to individual providers. The presence of full names and addresses are also helpful in identifying unique providers, as well as resolving issues of provider type. Our ability to count providers relies heavily on the IDs contained in the State provider files. In Georgia and Michigan, the States largely depend on one ID for the billing process. This ID represents the actual treating provider (not just the billing provider). In Tennessee and California, two IDs are used on the claims and retained on the provider files--a "treating" ID and a "billing" ID. The latter is critical to identifying all individual providers in these two States. The difficulties this creates for analyses of provider Medicaid participation in these two States are discussed below. In Michigan, there are multiple IDs assigned to the same physician along with a "master ID." To address this, we created algorithms to link together all claims with IDs associated with a physician's "master ID." This allowed us to count physicians and dentists and to appropriately allocate services to each provider.

3. Area Resource File (ARF)

The Area Resource File (ARF) is published by the Bureau of Health Professions on an annual basis. It includes a wide variety of county-level socioeconomic and demographic variables. The major data elements used in our analysis include total counts of physicians, total population counts and counts of children specifically. We also obtained the urban rural classification from the ARF for the 1989 analysis. We had to obtain the update to this classification directly from the Department of Agriculture for the 1992 data analysis.

4. American Dental Association Data

We used data from the American Dental Association's (ADA) Distribution of Dentists Database to compute county-level counts of dentists in the U.S. Periodically, the ADA conducts a self-reported census of all known dentists in the U.S. In addition to professionally active practitioners, the census includes

members and non-member dentists, as well as dentists who are retired or who are no longer involved in the private practice of dentistry.

The ADA Distribution of Dentists database includes information on the number of dentists, dental occupation, specialty (self-reported), age, and gender, at the county-level. MEDSTAT acquired two files from the ADA that enabled us to compute the county-level counts and stratify them by specialty (self-reported). These counts reflect 1987 and 1991 census data which are the available data closest to our study years.

D. METHODS

In this section, we discuss here the issues we had addressed as we developed the quantitative measures of physician and dental Medicaid supply. Methodological issues that arose in this process included: 1) the definition of total physician and dentist counts for deriving participation rates; 2) the identification of urban/rural and other health care service areas; 3) the identification of "shortage" county areas; 4) the derivation of county-level poverty measures for the dental analysis; and 5) the derivation of measures of service concentration. Methods used to handle each of these issues are discussed, in turn, below.

1. Identifying Providers

We used provider IDs to identify unique physicians and other providers before drawing detailed information from the claims. In some States, we had to first "unduplicate" this ID by collapsing records with the same provider ID, name and city. Only those records with identical names were combined as one provider; names were compressed to avoid mis-matches due to spacing, etc. This process was applied to all provider types within the provider files but only affected a small percentage of these records. Unduplication of provider IDs is not the major problem inherent in using claims files; other issues, as described in the following text, are more problematic.

As we began to use the claims files in conjunction with the provider file, we found inconsistencies when we compared "provider type" fields in the claims to the "provider type" fields in the provider files. For example, the provider record may have indicated that the provider was a physician, but the claims file may have indicated that the provider was a long term facility. This scenario can happen when a long term care facility signs up as a Medicaid provider and bills for several types of services, including physician services (salaried/contracted physician services). Upon inspection, we found that individual physicians were more clearly identified by using the criteria that they be identified as a physician in the uniform Tape-to-Tape provider file *and* submit some claims during the year with a physician provider type. This rule was used to categorize providers as either physicians or non-physicians. In Tennessee, we used additional information from the State on the range of numbers within the ID to assure that we had separated physicians from clinics to the greatest extent possible. We then used claims to group other providers by major category (e.g., clinic, outpatient department). We assigned major provider categories according to the predominant provider type appearing on each set of claims that corresponded to the provider's ID. This method was also used to determine physician specialty. That is, if the ID was identified as that of a physician and he/she

billed most of the time as a pediatrician, this provider was categorized as a pediatric specialty type--even if the physician sometimes billed as a general practitioner.

We also identified dental providers according to category of service. The major categories of service that we used were: 1) all services, 2) diagnostic, preventive, and therapeutic services (together and separately), emergency services, and 4) orthodontics. Categorization of providers based on service provision was based on the detail contained in the claims data. We searched the claims to identify unduplicated dental provider IDs associated with procedure codes within the specific categories. Based on these IDs, we then captured information from the provider file to tabulate counts of providers, by type, by service category. Procedure codes for each of the service categories were mapped using State-specific codes. We have documented the mapping of procedure codes into service categories in Appendix E.

Claims files from Tennessee and California were particularly problematic since there were two provider IDs on most of the claims--a treating ID and a billing ID. If a physician treated an enrollee in a group, clinic or setting other than his/her office, and that entity billed for the service, both IDs appeared on the claim. Obtaining an accurate count of participating physicians and dentists and allocating the dollars of service provision to each individual provider required that we use the treating IDs. The process of obtaining a list of unique treating IDs was an iterative one; it required repeatedly examining the claims and the States' raw provider files, and then matching the treating IDs onto the uniform provider file.

Once we identified the providers we believed to be physicians, other issues were addressed. When counting the number of participating physicians, for example, several alternative methods have been used in other research: 1) those providing any services during the year; 2) a level of effort definition; or 3) unrestricted Medicaid practice (i.e., accepting all new Medicaid patients). The first definition is used by States as they report to HCFA and by some researchers (Mitchell, 1990). The Fossett *et al.* studies of Cook County, Illinois and other earlier studies (Held and Holahan, 1985; Hadley, 1986) have used a specified "level of effort" approach to identify "serious participants." National data from the American Medical Association (AMA) gives the percentage of physicians for whom Medicaid constitutes one percent or more of their gross revenues. This national percentage fell from 77 percent in 1984 to around 74 percent in the 1988-1990 period (AMA, 1989; 1991). We calculated the number of physicians billing any services to Medicaid, as well as those meeting a dollar cut-off that approximated the one percent of gross revenues test used by the AMA (AMA,1990). Gross revenues were derived from hard copy data from the AMA and one percent equaled approximately $3,000 in 1989. We also tested several other cut-offs in the Year One analysis but each gave similar results. We have used the $3,000 cut-off for the 1992 analysis as well. Because most physicians were well under the $3,000 cut-off, inflating the cut-off would not have perceptively altered the results.

There were also issues related to counting institutional providers using the Tape-to-Tape files. We made adjustments to the provider files in both Georgia and Michigan to accurately count county health departments participating in Medicaid and EPSDT. Georgia assigned the same provider ID to all county health departments in the same health district. Using the location code contained in this ID, we counted health departments in each county and allocated their claims to that provider and county. In Michigan, even though the county health departments were virtually the sole providers of EPSDT services, they did not have separate records in the provider files before 1991. However, because the claims contained an ID that identified the county location of these providers, we were able to allocate claims to each county health department.

2. Participation Rates

a. Physicians

One way to gauge the relative accessibility of providers for Medicaid enrollees is to compare the number of Medicaid participating physicians to the number of total physicians within a geographic area. This comparison results in a participation rate--the percentage of all physicians that accept any Medicaid patients. One methodological issue we addressed in deriving participation rates was what types of physicians to include in the rate calculations. Participation rates are often measured by using counts of office-based physicians. However, we believe that physicians providing hospital-based patient care are equally important to the Medicaid population, especially for children.

To obtain State-level counts of all physicians, we used the ARF, which provides physician counts by county within each State. Physician counts (office-based, patient care, hospital-based, etc.) are made available to the ARF by the AMA based on the AMA's national Masterfile of Physicians. In the ARF, physicians are characterized as patient care, office-based, or hospital-based, depending on the hours reported through the Physicians Professional Activity Questionnaire (PPA). Because a significant portion of pediatricians and other specialists are classified as hospital-based by the AMA, we included them in the counts of total physicians used in the denominator of the participation rate. In most of the rates reported here, we used the sum of office-based and hospital-based patient care physicians. We also tested alternative definitions, (e.g., subtracting counts of residents and clinical fellows who are less likely to submit claims).

b. Dentists

We chose three methods for computing participation rates for dentists:

- all participating dentists as a percent of all active dentists in the county;
- participating dentists serving Medicaid children as a percent of all active dentists in the county; and
- participating general dentists serving Medicaid children as a percent of all active general practice and pedodontists in the county.

For these participation rate measures, denominators were computed by obtaining county-level counts of all active dentists and all active general practice and pedodontists using the data obtained from the ADA.

In addition, we identified participation in the Medicaid program with no dollar volume threshold (Table 18) and with a minimum dollar volume of $1,600 paid by Medicaid in 1989 and $1,900 in 1992. Finally, in computing participation rates, we used counts of individual dentists that included those dentists we positively identified *as well as those* we classified as "other/unknown" because we found their provider identification numbers on claims but no identification number in the provider files. We defined high poverty counties as those with at least 40 percent of the population living below 150 percent of the FPL, medium poverty counties as those with 20 to 40 percent of the population living below 150 percent of the FPL, and low poverty counties as those with less than 20 percent of the population living below 150 percent of the FPL.

3. Geographic Identifiers

a. Urban/Rural Areas

The most appropriate geographic area in which to measure the participation of physicians would be the "service area," or the area over which an individual seeks medical care. Service areas are akin to "markets," and thus would capture the effects of factors such as Medicaid demand and provider competition, which are known to affect providers' participation decisions. Using the ARF data, county is the closest proxy to service area. While counties are generally too large and diverse a geographic area to represent conditions facing low-income families, physician supply and enrollee utilization will vary in discernable ways across types of counties. Earlier studies have argued that the differences in the cost of producing services in urban areas and the residential segregation of the poor lead physicians to make decisions between either limited practices or very large practices within urban areas (Fossett and Peterson, 1989). In rural areas, on

the other hand, physicians are more likely to accept all new patients on a first-come, first-served basis (Kehrer *et al.*, 1984. Nationally, Medicaid participation rates are higher in non-metropolitan areas than in metropolitan areas (AMA,1989). Yet, rural areas have access problems such as the distance patients must travel to obtain certain types of services. Rural areas must also maintain facilities to stabilize patients before transferring them to larger, more sophisticated urban facilities. One study of children's use of services in metropolitan and non-metropolitan areas found higher ambulatory and hospital usage among rural children (McManus and Newacheck, 1989).

Due to these considerations, we examined some measures of provider supply separately for urban and rural areas. We initially explored two methods for categorizing urban and rural counties. The first simply used the most recent Metropolitan Statistical Area (MSA) designation reflected in county-level 1990 Census data included in the ARF. A drawback to the MSA categorization is that it does not separate counties that are urban from those that are more suburban. The former exhibit a very different set of socioeconomic conditions than the latter and, as noted, we have reason to expect different patterns of Medicaid physician supply in urban and suburban areas. Therefore, we used other data in the ARF to derive a less aggregated grouping of counties, based on the 1988 Rural/Urban Continuum Code (RUCC) supplied by the Department of Agriculture.

The RUCC groups counties according to the overall level of the urban population in the county and whether the county is adjacent to a metropolitan county. The RUCC depicts a county as adjacent if it is physically adjacent and at least two percent of the employed labor force in the non-metropolitan county commute to central metropolitan counties. There are four categories based on the RUCC: urban, inner urban, suburban, and rural. The RUCC classifications have not been used extensively in the area of health care research; however, they do provide a more refined differentiation of counties for analysis. We note that in all instances, we used the location of the provider practice, not the residence of the child, to determine urban/rural location.

b. Identification of "Shortage" Areas

In addition to categorizing counties according to urban/rural States, we also constructed an indicator of whether the county could be considered a "shortage" area. We considered three indicators for non-dental providers: 1) the ratio of the total population to primary care providers ; 2) the ratio of all children to child health care providers; and 3) the ratio of Medicaid children to child health care providers. The identification of health manpower "shortage" areas is usually based on a ratio of one primary care

physician[3] to 4,000 persons. More recently, the Bureau of Health Professions has defined a primary care Health Provider Shortage Area (HPSA) by using a smaller dominator (3,000 to 3,500) and other information regarding the geographic area (GAO, 1995). These measures have been criticized, however, for their validity. Reasons cited for low validity include: 1) the omission of important categories of primary care providers; and 2) inaccurate or outdated data (GAO, 1995). In our analysis of the 1989 data we had derived measures based on the ratio of one PCP to 4,000 persons using the ARF data on primary care physicians (omitting general surgeons) and the Census population. For consistency, we used the same ratio in this report.

Given the special needs of children, the American Academy of Pediatrics (AAP) has defined a different ratio to indicate shortage areas for children. This ratio is used in several parts of the analysis and is referred to in the text and tables as the Child Ratio. It is defined as:

$$CHILD\ RATIO = \frac{CHILDREN}{PEDS + .25\ (FPS+GPS)}$$

where:

PEDS	= number of non-federal patient care pediatricians;
FPS + GPS	= number of non-federal patient care family practitioners plus general practitioners; and
CHILDREN	= number of children under age 21.

The AAP considers an area "underserved" if there are more than 2,500 children per child health provider. This ratio was derived based on an average work week for physicians and an assumption of three visits per child per year.[4] One quarter of GP/FPs were assumed to provide services to children. However, this ratio makes no allowances for differences in physician productivity nor factors that may be related to the need for services (e.g., health status and/or age structure of the child population). While this issue has led to debate about the ratio used to define underserved areas for children, it is the only professionally endorsed standard for judging the adequacy of pediatric supply (Budetti *et al.*, 1982) and has been used to guide

[3]Internists, pediatricians, obstetricians/gynecologists, general or family practice, and those general surgeons who spend 50 percent or more of their patient care time in primary care activities.

[4] The AAP standard is based on estimates of the number of physicians required to provide three visits per child per year, given the average workweek for child health providers. We used the average number of visits made to child health providers (only .25 of the average for GP/FP was used) as reported by the AMA. Office visits equaled 6,066 in 1989 and total visits equaled 8,166. When divided by three, the estimate of the number of children that could be served equaled 2,022 for office visits and 2,722 for total visits. Thus, 2,500 appeared to be a reasonable cut-off to use for all children.

earlier studies (Fossett *et al.*, 1992). We note that there is on-going work at AAP on refining this indicator[5] that may address some of these issues. In this report, we used the previously established denominator of 2,500 children, along with the higher denominator of 4,000 persons used for the general population, to identify counties with shortages of either primary care or child health providers. Once these counties were identified, we examined the ratio of Medicaid participating providers to children enrolled in Medicaid for these counties versus others. In other words, we asked the question of whether overall shortages in physicians affected the child per Medicaid-participating provider ratios in each study State. We compared the enrollee per Medicaid-participating provider ratios in these counties to those in counties not identified as "shortage areas" and we also examined patterns by urban/rural status.

In addition to the measures of provider shortages just described, we also considered whether we could identify counties with evidence of a "shortage" of Medicaid providers based solely on enrollee/provider ratios. This raises the question of whether the assumptions made regarding adequate the number of providers for children in general could be applied directly to Medicaid children. Analyses of national survey data indicate that Medicaid children have more visits, on average, than other insured children; this is perhaps reflective of Medicaid-enrolled children's greater health needs. To accommodate for this difference in population characteristics, we measure Medicaid "shortage" counties as those with enrollee/participating provider ratios greater than 1,500.[6] Finally, we compared the number of such counties in each State to those identified as shortage counties for children in general.

To remain consistent in our analysis of dental providers, we identified a county as having evidence of a "shortage" of dental providers in much the same fashion as for physician providers--by identifying a Medicaid enrollee/dentist ratio above which we determined there were would be access problems. For the overall population, the Bureau of Health Professions defines an HPSA for dentists if the ratio of the population to all dentists (both general and specialty) is greater than 5,000 to one. For our analysis, we developed a measure that is specific not only to children, but also for children covered by Medicaid.

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[5] In conversation with staff at AAP, the issues that are being considered included those noted but little progress had been made at that time. Furthermore, that study is not focusing specifically on Medicaid children.

[6] We note however, that since we are not able to count the physician providers involved in providing services solely through clinics/outpatient departments the child to provider ratios reported here overstate the true enrollee to participating physician ratio.

4. Poverty Level Within County

In the dental analysis we were able to include an additional characteristic of the county in which the provider practiced, the relative level of poverty of the population residing in that county. We used the 1990 census data to derive this measure for both the 1989 and 1992 time periods. To define relative levels of poverty within the county we used the data on the percentage of population living below 150 percent of the Federal Poverty Level (FPL) to define counties with low, medium or high levels of poverty as follows:

Low = Less than 20 percent of county's population lives below 150 percent of the FPL;
Medium = Between 20 percent and 40 percent of county's population lives below 150 percent of the FPL; and
High = Forty percent or more of county's population lives below 150 percent of the FPL.

We defined these poverty level categories by reviewing county distributions in each of the study States. We also considered the higher income eligibility levels that can currently be used for determining the Medicaid eligibility of pregnant women and children.

5. Measuring Service Concentration

Another measure of provider supply is the relative concentration of service provision. As noted in a recent National Governors' Association report (Lewis-Idema, 1992), physician participation rates can increase over time but, if the average size of physicians' Medicaid practices decreases, actual access for enrollees may not increase. Thus, information on the average size of Medicaid practice volume, the distribution of physicians' practices across alternative sizes and changes in these measures over time are important accompanying measures to the physician participation rates. One such measure is the concentration of Medicaid services among physicians and/or all providers. Concentration of Medicaid services may be indicative of a few very large, perhaps overburdened, practices.

In our analysis, we used a summary measure of service concentration called the Herfindahl Index (HI). These indices have traditionally been used by economists to measure the concentration of markets as one indicator of the level of competition; more recently they have been applied in the health services area to measure competition in hospital markets (Phibbs and Robinson, 1993). To our knowledge, they have not been applied to physician services. The definition of the HI that we use is shown below. For the j^{th} physician, calculate:

$$P_j = \frac{\sum_i Claims_{ij}}{\sum_j \sum_i Claims_{ij}}$$

where the numerator is the total number of claims for each individual physician *j*, and the denominator is the total number of claims for all physicians in county *i*. The HI for the county then equals:

$$HI = \sum_j P_j^2$$

If, for example, there are ten providers in a county, but only one participates and all enrollees go to him/her, the HI would be $\Sigma\ 1^2$ or 1. If on the other hand, all 10 providers participate and enrollees' service use is evenly distributed across them, the HI would equal $\Sigma\ .1^2$ or .1. Thus, the more concentrated the Medicaid service provision in a county, the higher the value of the HI. Using claims, we have calculated these indices for: 1) all providers of services to children under 21; 2) all preventive care providers; and 3) all EPSDT participating providers. We calculated indices for all providers (inclusive of institutional providers), as well as for individual physicians only. We also used the above formula to derive Herfindahl Indices for individual dentists.

6. Types Of Providers

The ambulatory care system can be seen as a continuum with the solo practice physician at one end and the more structured organizations, such as HMOs, at the other. Between these ends are a variety of practice types, including group physician practices, clinics and other types of ambulatory care centers. While considerable research has focused on private office-based physicians, much less attention has been paid to those providers in the middle of the spectrum, such as community health centers and county health departments. Perhaps one reason for this is that the mission of these entities is to serve low-income populations, and hence, there is less concern about their participation in Medicaid. However, there is a renewed interest and concern with their role because of growing evidence that they are critical providers of care for the Medicaid population (NGA, 1992; Schlesinger and Kronebusch, 1990), especially in low-income areas where physician offices are scarce (Fossett *et al.*, 1990). In our analysis, we examined the role that individual physicians play in providing services across alternative settings, as well as the role that institutional providers play. The relative participation of each in the provision of preventive care services to Medicaid children is an important focus of our analysis.

As noted earlier, a major goal of the analysis is to simply count the number of providers involved in providing services to Medicaid children. In the following two sections we discuss our approach for counting and categorizing what we have termed "individual" and "institutional" providers.

a. *Individual Physicians*

Clearly, the participation of individual physicians, whether in a solo or group setting, is an important determination of access to care on the part of Medicaid enrollees. As noted, we have gone to great lengths to accurately count physicians participating in the Medicaid and EPSDT programs in each of the four States. We have categorized these providers into the following specialty categories:

- pediatrician;
- other primary care physician (general practice (GP), family practice (FP), internist and obstetrician/gynecologist; and
- other physician specialty.

Because physicians often bill for services under alternative specialty designations, we determined each physician's primary specialty group by the specialty named most often on the provider's actual claims. In our Year One report, however, we used the specialty designation given by the State of Michigan in its raw provider file because there were no data on specialty retained on Michigan claims. Fortunately, here we were able to derive a more meaningful specialty designation for Michigan physicians. We circumvented the problem mentioned above by using information from the State provider files and the second designation appearing on the uniform files. Using this method to re-calculate the 1989 numbers for this report resulted in:

- far fewer physicians with unspecified specialty;
- far more general and family practitioners;
- lower enrollee/primary care participating physician ratios; and
- reasonable comparability to results in the other study States.

In addition to counting individual physicians, we have included a category for other individual providers involved in providing services to child enrollees. These providers include audiologists, speech pathologists, chiropractors, physicians assistants, and nurse practitioners, but not dentists. As noted earlier,

a GAO report expressed concerns about the omission of these types of primary care providers in geographic measures of health provider shortages.

b. Individual Dental Providers

For this analysis we used the dental claims and the provider files in each State to identify dentists. We used virtually the same methodology as we did for identifying physicians. This has been a relatively easy exercise since there are fewer numbers of participating dentists, fewer specialty designations and dental claims are housed within separate files within Tape-to-Tape data. For individual dentists, we have categorized them as follows:

- general dentistry (DDS); and
- oral surgeons.

In the physician analysis, the specialty which appeared most often on the individual dentist's claims was used to categorize them. We did find a significant number of providers of dental services that were not readily categorized into either specialty and indeed, we were in some instances uncertain as to whether they were actually *individual* providers of dental care. We have included these providers in an "other/unknown" category for dental providers. Given that the great majority of providers that we could categorize are *individual* dental providers, we believe these "other/unknown" providers are largely individual dentists. Hence, we have included them in our overall counts when calculating participation rates.

c. Institutional Providers

In our Year One report, we identified institutional providers as those non-individual providers that billed primarily under the following provider types:

- free-standing clinic;
- hospital outpatient department and clinics; and
- other institutional.

These provider types represent groups of physicians and/or other individual providers who serve Medicaid enrollees only through the institutional (free-standing clinic, outpatient department and/or emergency room) settings. In our Year One report, clinic providers included all types (e.g., free-standing ambulatory centers, community health clinics, ambulatory surgery centers, etc.). The hospital outpatient department category

included emergency room, outpatient departments, and hospital-based clinics (including mental health clinics). In response to an interest expressed by the TAP, in the 1992 data we have expanded the categories of outpatient department/clinics to include:

- outpatient departments/emergency rooms
- rural health clinics;
- Federally Qualified Health Centers (FQHCs);
- public health departments; and
- other clinics.

This level of detail allows analysis of the relative roles of different types of ambulatory providers in providing preventive services to children. It was made possible due to the mapping of a specific provider type for FQHCs performed only on the 1992 data. We were able to identify FQHCs in each state. We used IDs in Tennessee, California, and Michigan, and specialty code in Georgia. The level of detail on encounter data varied by state. In Georgia and Tennessee, we had CPT-4 codes; in California and Michigan we had specific codes. We were unable to create a comparable category in the 1989 data. This data limitation applies to the dental analysis as well.

We note a special issue with regard to the "other institutional" category for non-dental providers. In 1989, the category included providers such as school clinics, and the only State in which they were an identifiable group was California. Their dollar amounts were fairly small and we included them in the "other institutional" category. In 1992, however, there was a significant amount of services, especially preventive care, provided to children in school settings in Michigan. Given the amount of dollars paid to these providers we included their numbers in the clinic category in 1992 for both Michigan and California. We also note that we were not able to separate out individual school clinics in Michigan. The numbers in the tables represent Medicaid dollars paid to school districts, which are comprised of an unknown number of individual school-based clinics. Also included in the "other institutional" category in each of the study States and years were ambulance, home health and independent labs. We omitted these latter types of providers from several tables included in the analysis in both years.

Since we are including dentists in this year's report, we have also identified "institutional" providers of dental services. These are all dental clinics; they can be either hospital-based or free-standing. As discussed above, in 1992, we can distinguish the types of clinics from one another in more detail (e.g., FQHCs).

TABLE 1

GROWTH IN TOTAL OVERALL PHYSICIAN SUPPLY, 1989 TO 1992
MEDICAID PARTICIPATING PHYSICIANS AND THOSE PROVIDING BASIC PREVENTIVE CARE**
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE

	California	Georgia	Michigan	Tennessee
	% Change	% Change	% Change	% Change
ALL				
Physicians*	7%	11%	8%	11%
Physicians/Capita	0	6	5	7
PARTICIPATING PHYSICIANS				
All	16%	28%	3%	5%
Serving Children	17	43	17	20
Providing Basic Preventive Care**	13	40	13	28
Providing EPSDT	11	171	566	29

* Physicians include office-based plus full-time hospital staff patient care and Doctors of Ostreopathy.
** Excludes providers of prenatal/contraceptive preventive services, but includes EPSDT and other preventive services.

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TABLE 2

NUMBER OF DENTAL PROVIDERS, BASED ON SERVICE CATERGORY

1989 AND 1992

Dental Provider Type	% Change			
	California	Georgia	Michigan	Tennessee
Total Non-institutional dental providers*	-3.4 %	-2.2 %	-11.5 %	3.0 %
Dentists Providing Services to Medicaid Enrollees	-21.7	-2.2	-1.5	3.2
Dentists Providing Services to Medicaid-Enrolled Children	-17.6	2.4	-1.0	3.0
Dentists Providing Diagnostic Services to Medicaid-Enrolled Children	-15.6	2.2	-1.7	1.6
Dentists Providing Preventive Services to Medicaid-Enrolled Children	-17.4	2.6	-1.3	-0.3
Dentists Providing Therapeutic Services to Medicaid-Enrolled Children	-13.8	3.2	-1.5	0.7

*Includes individual and other/unknown dental providers. These providers were identified on claims but were not found in the provider file.

E. CHANGES IN PROVISION OF MEDICAID SERVICES

1. Counts of Providers by Type

In this section, we compare results from 1989 and 1992 calendar years. We highlight important results for non-dental providers by including and discussing selected tables in the text of this report. Detailed results for non-dental providers are located in the Appendices to this report. The data presented in this section first show changes in the number of non-dental providers and average amounts of dollars paid for all children's services, preventive and EPSDT. In addition, we present findings regarding the relative roles of alternative types of providers within the overall system. We then present overall trends for dental providers for 1989 and 1992.

a. Overview of Physician Counts

The numbers of participating physician providers in 1989 and growth rates from 1989 to 1992 for each study State are shown in Table 1. These numbers represent individual, most likely office-based, physicians identified by using the methods described earlier in this report. Detailed findings relating to physician counts can be found in Tables A-1 through A-7 in Appendix A and Tables B-1 through B-7 in Appendix B.

The data show that there were increases in the total numbers of physicians located and practicing in each study State over the 1989 to 1992 time period. Georgia and Tennessee experienced the largest increases in the number of total physicians. This pattern is reflected in per capita data as well, indicating that these two southern States experienced a growth in overall physician supply that exceeded their growth in population over the study period. Michigan also experienced an increase in the supply of physicians per capita but in California, the number of physicians per capita held constant at 214 between 1989 and 1992. Yet, of the four study States, California tended to have the highest level of physicians per capita in both years.

Growth in the total number of physicians per capita should lead to an increased level of competition among physicians, especially as managed care efforts continue to lessen the demand for non-primary care specialties. As the market becomes increasingly competitive we would expect to see more physicians willing to participate in the Medicaid program. Table 1 also shows the percentage growth in Medicaid-participating physicians from 1989 to 1992, with the largest occurring in Georgia. Michigan experienced the lowest percentage growth (three percent) in all study States in the total number of participating physicians. There

were generally greater percentage increases in the numbers of participating physicians serving children and providing preventive care to children, either through the EPSDT program or otherwise. Georgia, in particular, experienced significant increases in these numbers; there was a 40 percent increase in Medicaid-participating physicians who provided preventive care to children, and a 171 percent increase in those participating in the EPSDT program. Michigan also experienced a dramatic increase in EPSDT providers, equaling over 500 percent. We note, however, that both Georgia and Michigan had very low base numbers of physicians participating in EPSDT in 1989. Increases in the number of EPSDT providers were lower in California and Tennessee -- 11 percent and 29 percent, respectively.

The data presented in Table A-1 (1989 and 1992) in Appendix A indicate that the proportions of office-based participating physicians involved in serving children and/or providing preventive care was quite stable over the study period. In 1989, the percentage of participating physicians serving children ranged from a low of 65 percent in California to a high of 88 percent in Michigan. By 1992, this percentage changed only slightly -- ranging from 66 percent to 87 percent. Georgia showed the most substantial change, with 77 percent in 1989 compared to 86 in 1992. Tennessee also experienced growth in the percentage of all Medicaid-participating providers serving children -- 81 percent in 1989 to 88 percent in 1992.

The percentage of participating physicians providing preventive care to children ranged from a low of nine percent in Georgia in both years to a high in Michigan of 30 percent in 1989 and 29 percent in 1992. Michigan was the only State in which office-based physician involvement in EPSDT changed dramatically. In Michigan, the percentage of individual EPSDT physicians who served children during the year increased from less than one percent in 1989 to 20 percent in 1992. Thus, while there was a relatively greater increase in the *numbers* providing services (including preventive) services to children there was little or no change in the relative *proportions* of providers involved in either preventive or EPSDT care in the study States, with the exception of Michigan. We are still left with the surprising conclusion that only a small percentage of office-based physicians provided preventive care services to children (whether through EPSDT or not).[7] Less than one third of the physicians provided preventive care services to children in either of the two years. While this percentage ranged from 20 percent to 29 percent for California, Michigan and Tennessee in 1992, only nine percent of the physicians in Georgia provided preventive services to children. This low percentage can be explained largely by the fact that Georgia does not allow billing for well child care outside of EPSDT.

[7] Preventive care providers are those who have submitted even one claim of the type identified in the earlier Tape-to-Tape report on children's utilization (Herz et al., 1994). We have included in the basic preventive care providers those who provide just EPSDT services as well.

Nonetheless, the percentage of office-based physicians involved directly in Georgia's EPSDT program increased from only two to three percent over the pre- and post- OBRA89 period.

Virtually all office-based physicians participating in the EPSDT program provided full screens in both 1989 and 1992 (Table A-1). Only a small group of physician providers in each State were identified as billing for only partial screens during either year. Although we expected some change in this pattern over the 1989 to 1992 study period, we did not see any significant changes in these data.

b. Overview of Dental Provider Counts

The results in Tables 2 through 3 represent percentage changes in counts of non-institutional dental providers, individual dentists, and institutional dental providers (detailed tables with counts for 1989 and 1992 are included in Appendix C.) Non-institutional dental providers represent total individual dentists plus dental providers that we identified as "other/unknown." The latter group of providers are those whose identification numbers appear on Medicaid dental claims (i.e., they provided some services to Medicaid recipients), but their provider numbers do not appear in the Tape-to-Tape provider files. Given that the vast majority of dentists are individual rather than institutional providers, it is likely that this group represents individual dentists; therefore we included them in our count of total non-institutional providers. In subsequent tables, we explicitly separate this category from others which include providers definitively identified as representing individual dentists.

In Table 2, we also present percentage changes in counts of individual dentists who provided any services to Medicaid enrollees and to Medicaid-enrolled children, and counts of those who provided diagnostic, preventive or therapeutic services to Medicaid-enrolled children. We also computed counts of individual and institutional dental providers stratified by service category: 1) diagnostic, preventive or therapeutic services; 2) emergency services; 3) orthodontic services; and 4) other services.[8] Percentage changes in these counts are presented in Table 3.

In all States except Tennessee, the total number of non-institutional dental providers declined between 1989 and 1992; the largest percentage decrease was in Michigan (11.5 percent). The number of dentists (not including other/unknown dental providers or institutions) providing services to Medicaid enrollees also declined in all States except Tennessee, which experienced a 3.2 percent increase. The

[8]Dental providers that could not be identified as individual or institutional dental provider were categorized as "other/unknown."

percentage decrease Georgia and Michigan was small--2.2 and 1.5 percent, respectively. In California, the number of dentists (excluding providers classified as other/unknown) serving Medicaid enrollees decreased substantially, by 21.7 percent.

While the number of dentists providing services to Medicaid-enrolled children declined in California and Michigan, there was a small (less than 5 percent) increase in Georgia and Tennessee. The pattern for changes in the number of dentists providing diagnostic, preventive and therapeutic services to Medicaid enrolled children was similar. However, in Tennessee there was a slight decrease in dentists providing preventive dental services.

c. Providers of Dental Services to Children Under 21

We first note that the great majority of individual dentists serving any Medicaid enrollees also serve children in each of the study States (Tables C-1-89 through C-1-92). These data showed that from 73 percent of individual participating dentists (California) to 99 percent (Tennessee) served Medicaid-enrolled children in 1989. This percentage increased over the 1989 to 1992 time period in all States, ranging from a low of 76 percent in 1992, again in California, to a high of 99 percent, again in Tennessee.

d. Providers of Diagnostic, Preventive or Therapeutic Dental Services

Examining the numbers of participating dentists providing any diagnostic, preventive or therapeutic services (Tables C-2), we found that this group is not much smaller than the total group providing any services to children.

With regard to changes in these numbers we see that in California, there was a decrease in individual dentists providing diagnostic, preventive or therapeutic services to Medicaid-enrolled children. However, if we consider total dental providers rather than just individual dentists, there was an increase of 7.2 percent between 1989 and 1992 (Table 3). This increase reflects the jump in the number of those providers that we identified in the other/unknown category. In Georgia and Tennessee, there was a small increase in total dental providers rendering these services to children in the Medicaid program. In Michigan, however, we found an 11 percent decrease in individual and institutional dental providers, together, for this group of services.

TABLE 3

NUMBER OF DENTAL PROVIDERS SERVING MEDICAID-ENROLLED CHILDREN BY TYPE, BASED ON SERVICES CATEGORY
1989 AND 1992

Dental Provider Type	Providing Diagnostic, Preventive, or Therapeutic Services				Providing Emergency Services				Providing Orthodontic Services				Providing Other Services			
	% Change				% Change				% Change				% Change			
	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN
Total Dental Providers	7.2%	2.3%	-11.0%	1.4%	14.2%	-9.0%	-7.2%	10.2%	282.1%	500.0%	16.67%	0.0%	>1000.0%	-100.0%	>1000.0%	1.1%
Total Individual Dentists	-17.2	2.3	-1.2	1.9	-12.0	-9.0	3.0	11.0	25.7	500.0	-9.1	0.0	371.4	-100.0	100.0	1.1
General Dentists	-17.2	2.3	-1.2	0.1	-12.0	-9.0	3.0	10.9	25.7	500.0	-9.1	0.0	371.4	-100.0	100.0	-13.0
Oral Surgeons	0.0	0.0	0.0	26.8	0.0	0.0	0.0	12.2	0.0	0.0	0.0	+2.0	0.0	0.0	0.0	40.0
Total Institutional Dental Providers	0.0	0.0	175.0	-3.8	0.0	0.0	300.0	0.0	0.0	0.0	0.0	0.0	+108.0	0.0	+36.0	0.0
Dental Clinics	0.0	0.0	-50.0	-22.6	0.0	0.0	-66.7	-3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Clinics	0.0	0.0	+36.0	+10.0	0.0	0.0	+22.0	+1.0	0.0	0.0	0.0	0.0	+108.0	0.0	+36.0	0.0
Other/Unknown*	726.1	0.0	-94.8	-66.7	612.9	0.0	-94.7	-50.0	>1000.0	0.0	-100.0	0.0	>1000.0	0.0	0.0	0.0

*Includes individual and other/unknown dental providers. These providers were identified on claims but were not found in the provider file.

e. *Providers of Emergency, Orthodontic and Other Dental Services*

The supply of dental providers treating Medicaid children on an emergency basis increased in California and Tennessee but decreased in Georgia and Michigan. It is not clear whether this finding should be interpreted as positive or negative with respect to the provision of services for Medicaid-enrolled children. These changes could represent a true increase or decrease in providers willing to offer these types of services to this population. However, an increase may also indicate there were more children in need of emergency services due to deterioration in their oral health. This situation would actually be indicative of a decrease in access to preventive and therapeutic care.

One of the most striking findings is the change in the number of providers giving orthodontic care to Medicaid-enrolled children. In percentage terms, the increases that we found in California, Georgia, and Michigan are fairly dramatic, but in Georgia and Michigan, the numbers of providers that rendered these services were relatively small. For example, in 1989 in Georgia, we identified only one dentist as having provided orthodontic services to Medicaid-children. By 1992 this had increased to six dentists, a large percentage increase but certainly not indicative of widespread access to orthodontic services for Medicaid children.

2. Practice Size: Individual and Institutional Non-Dental Providers

In the next series of tables (Tables 4 through 7), we present changes in the average payments paid by Medicaid to non-dental providers by provider type for each of the study States. We also include changes in the caseloads of individual providers for all children's services. We again make a distinction between individual and institutional providers in these tables. Tables 4 through 6 provide summary data on individual non-dental providers and Table 7 presents data on institutional non-dental providers. Ideally, we would count all individual providers (e.g., physicians, nurses, therapists, etc) regardless of whether services are provided in an office or institutional/non-office setting. However, as discussed earlier, we cannot identify individual physicians nor other personnel for whom clinics, outpatient departments, etc., bill for all services with the claims data. Thus, those individuals we have identified separately are most likely self-employed, office-based providers while those not identified are probably salaried/contracted providers who participate in Medicaid in an institutional setting.

a. Providers of Services to Children Under 21

Data in Table 4 provide information on changes in average amount paid by Medicaid and average child recipient caseloads of office-based physicians and other individual providers. The data for individual providers are presented separately for pediatricians and other primary care specialties (general and family practitioners, internists, and obstetrician/gynecologists). Other physician specialties are grouped into the "other physician" provider group. Data on other (non-physician, non-dental) individual providers (e.g., therapists, chiropractors, etc.) are also presented separately under "other individual."

The data clearly indicate that the average size of the participating physician's child-related Medicaid practice increased in all States and for all specialties. The increases in average paid amounts were generally in excess of what we would expect due solely to medical care inflation or increases in allowed amounts for services under Medicaid. Recall, for example, that California did not increase fees over this time period and yet, the average amounts paid by MediCal to participating physicians increased from 25 percent for pediatricians to 75 percent for internists between 1989 and 1992. There were also increases in caseloads for providers in all States and specialties so these numbers do not necessarily indicate there were significant increases in the amount of expenditures per child enrollee.

The States do differ in the relative magnitude of the increases in providers' child-related practices. For example, the largest increases in pediatricians' child practice volume occurred in Georgia and Tennessee; in Georgia, their average dollar amounts more than doubled, and in Tennessee, they grew by 74 percent. A large part of this growth was apparently related to a growth in caseloads for these pediatricians; in Georgia, they grew by 87 percent, while in Tennessee they grew by 51 percent. In California, the growth in child-related Medicaid practices occurred more among general practitioners, internists and non-primary care specialties than among pediatricians. Here too, the growth in dollars was accompanied by an increase in the number of child enrollees seen per office-based physician. Tennessee also experienced an increase in the practice volume of family practitioners in addition to those discussed for pediatricians.

Drawing from Table A-2 (1989 and 1992) in Appendix A, we see that there were only slight changes in the relative proportions of physician specialties serving children in the study States--pediatricians became somewhat more important in Michigan and other primary specialties increased in importance in Georgia while slightly declining in importance in California. The 1992 data show some of the same patterns already observed in 1989:

TABLE 4

CHANGES IN AVERAGE CASELOADS AND MEAN AMOUNTS PAID BY MEDICAID FOR INDIVIDUAL PROVIDERS
BY SPECIALTY, 1989 AND 1992
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE

	California	Georgia	Michigan	Tennessee
Mean Amount Paid By Medicaid	% Change	% Change	% Change	% Change
Pediatrician	25%	102%	42%	74%
Other Primary	46%	35%	39%	57%
General Practitioner	62%	39%	44%	62%
Family Practitioner	43	50	37	80
Internist	75	42	21	29
Ob/Gyn	33	25	29	52
Other Physician	65%	49%	15%	54%
Other Individual	43%	134%	26%	66%
Average Caseload				
Pediatrician	18%	87%	6%	51%
Other Primary	41%	89%	18%	47%
General Practitioner	56%	120%	23%	71%
Family Practitioner	38	58	6	52
Internist	76	73	(3)	39
Ob/Gyn	25	34	8	18
Other Physician	75%	67%	9%	32%
Other Individual	50%	61%	9%	67%

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- Pediatricians tend to have larger child-related practices than other primary care specialties.
- Obstetricians/gynecologists continue to have sizeable practices related to the services of children.
- The role of "other physicians" in serving children is a combination of their somewhat smaller practices but larger numbers in total and they play a big role in California's and Tennessee's individual, non-dental provider system.

In summary, the increases in service volume of participating providers indicate that either those participating in Medicaid in 1989 significantly increased the size of their practices or those newly participating started with high volume practices or, perhaps, both patterns prevailed. Whether the growth in the size of child-related practices is due to increased enrollments of children in the area of their practice, changes in reimbursements that induced fewer physicians to limit their Medicaid practice or changes related to OBRA89 cannot be determined from these descriptive data. Nonetheless, they indicate a greater intensity of involvement of individuals, physicians and non-physicians, in providing services to Medicaid children between 1989 and 1992. Finally, the data indicate that while the provider system grew in volume, this growth was fairly proportionate across specialties, as pediatricians retained their relative role within each State's child provider system.

b. Providers of Preventive Services

Table 5 presents data on percentage changes from 1989 to 1992 in the average amounts paid to providers of basic preventive care services. The definition of basic preventive care services for children is as defined by Herz *et al.* (1994) and is inclusive of EPSDT services, but exclusive of prenatal/contraceptive care. Similar data, specific to EPSDT services, are provided in Table 6.

As the data in Table 5 show, there were dramatic changes in the average dollar volume of basic preventive care services provided by all physician specialties in all States. Again, these increases exceed what we would expect to occur with inflation or fee increases in the States. We also see that the largest increases occurred in Georgia and Tennessee as they did for all children's services. In Georgia, the average dollars paid to pediatricians for children's preventive care services increased by over 200 percent and in Tennessee, preventive care dollar volume more than doubled. Increases for other primary care providers also exceeded 100 percent in these two States; dollar volume for obstetrician/gynecologists in Georgia and for other physician specialties in Tennessee were below this average. The increase in the average volume for office-based physicians in California was far lower than that in Georgia or Tennessee, with the exception of internists whose volume increased by almost 200 percent. In Michigan, the increases in average dollars

paid for preventive care services were quite low -- only 10 percent -- for pediatricians; family practitioners actually experienced decreases in average payment amounts. There were significant increases in average dollars paid to non-physician individual providers in Michigan, but these increases were from a relatively low dollar volume in 1989.

The data presented in Table 5 and in Table A-4 (1989 and 1992) in Appendix A show several consistent patterns.

- Pediatricians generally comprise a larger percentage of the total physician supply for preventive services than other primary care specialties (except in Michigan).
- Preventive care services account for a larger proportion of pediatricians' total volume of children's services than that of other primary care physicians.
- Pediatricians and other physicians involved in providing preventive care to children in Medicaid have, on average, larger child-related Medicaid practices than other physicians serving Medicaid children.

Whereas pediatricians comprised six to eight percent of all individual providers serving children under 21, they constituted 14 to 27 percent of all preventive care providers in the study States. The average size of pediatricians' Medicaid preventive care practice was larger than that of other primary care specialty providers of preventive care and, as noted above, preventive care dollars accounted for more of their total dollar volume for Medicaid children. The portion of average total dollars paid to pediatricians for preventive care services ranged from a low of 12 percent in Georgia in 1989 and low of 15 percent in Michigan in 1992, to a high of 24 percent in California in 1989 and a high of 23 percent in Georgia in 1992. This percentage for other primary care specialties did not exceed 12 percent (in California) in 1992 and was generally lower, ranging from four to seven percent in the other study States in 1992. In California, as in 1989, dollars paid in 1992 for basic preventive care comprised almost half of the total paid to other physician specialties. The 1989 and 1992 data in Table A-4 (Appendix A) show that physician providers involved in providing preventive care had larger Medicaid practices than physicians providing any types of services. On average across the study States, the Medicaid dollar volume paid to preventive care providers for all children's services ranged from 11 percent to 77 percent higher for pediatricians who provided basic preventive care than for pediatricians providing any services to Medicaid children. This implies that providers were supplying these preventive care services in addition to other Medicaid services and/or were providers that served more Medicaid recipients on average. We note that while the obstetrician/gynecologists also fit this pattern--larger Medicaid practices based on dollars paid for all children's services--their preventive care practices were, in 1989 and again in 1992, a negligible portion of all dollars paid to them for children's services.

c. *Providers of EPSDT Services*

Comparable data on changes in the provision of EPSDT services by individual providers for the study States are shown in Table 6. Here too, there are dramatic increases in the average Medicaid amounts paid to office-based pediatricians and other primary care specialties between 1989 and 1992 in three of the four study States. For pediatricians, the average dollar volume increased by 75 percent in California and by over 100 percent in both Georgia and Tennessee. This same pattern held for the other primary care specialties. In Michigan, quite a different pattern prevailed. For almost all office-based physician specialties, there were decreases in the average amounts of Medicaid dollars paid for basic preventive care services. This largely reflects the dramatic increase in the number of individual providers involved in providing EPSDT services in Michigan in 1992 as compared to 1989; this number increased from only 43 individual providers to 2,502 (see Tables A-6 in Appendix A). Thus, the larger number of office-based providers received a much smaller portion of the total Medicaid dollar volume paid in 1992. Another noteworthy change was the increase in the amounts paid to other individual providers in EPSDT in Georgia and Michigan; in 1989, no dollars were paid to these types of providers in any study State.

The data in Tables A-6 can also be used to highlight some of the patterns reported in the Year One Report. In all study States, the absolute numbers of pediatricians who were paid for at least some EPSDT services in 1989 were greater than the number of other primary care providers (e.g., general practitioners) providing EPSDT services. This pattern held in three study States in 1992, but in Michigan there were more general practitioners providing EPSDT services than pediatricians. In 1992, pediatricians comprised from 22 percent of all EPSDT providers in California to 66 percent in Tennessee. General practitioners accounted for only six percent of individual office-based providers in Georgia in 1992 but they accounted for 44 percent in Michigan. The average size of the pediatrician's EPSDT practice was also significantly larger than those of other primary care practitioners. Again, pediatricians involved in providing EPSDT services were those with larger than average child-related Medicaid practices. The average amount of EPSDT services paid to pediatricians participating in the program ranged from around $2,173 in Michigan to $27,114 in Georgia in 1992 (Tables A-6). Average Medicaid reimbursements for EPSDT services provided by all other primary care physicians ranged from a low in Michigan of around $225 to over $11,000 in California.

There appeared to be significant involvement of other physician specialists in EPSDT in California and Georgia during 1989 and 1992. However, Georgia's data in both years indicate such large practices for these physicians that the data are suspect. It is possible that we inadvertently identified two clinics as

TABLE 6

CHANGES IN INDIVIDUAL PROVIDER'S MEDICAID MEAN AMOUNTS PAID
FOR EPSDT SERVICES, BY SPECIALITY, CALIFORNIA GEORGIA MICHIGAN AND TENNESSEE, 1989 TO 1992

Individual Providers	California	Georgia	Michigan	Tennessee
	% Change	% Change	% Change	% Change
Pediatrician	75%	166%	(83%)	105%
Other Primary	76%	163%	(94%)	125%
General practitioner	85%	244%	(98%)	4%
Family practitioner	66	208	(94)	160
Internist	127	> 1000	(63)	351
Ob/Gyn	7	+990*	(73)	+1,792
Other Physician	105%	> 1000%	(> 1000%)	33%
Other Individual	0%	+1,610*	+1,879*	0%

* This speciality was paid $0 for EPSDT services in 1989; in 1992 the mean amount paid is shown.

individual physicians in that State.[3] In California, other physician specialties account for 50 percent of all individual providers and their mean Medicaid amount paid for EPSDT services equaled over $30,000 in 1992. Specialists are extremely important in this State's provider system. The importance of specialists may be driven, in part, by greater competition in California because the State has more physicians per capita than any other State, as well as greater penetration of managed care in the overall market.

We can also compare the data in Tables A-6 to that presented earlier in Table A-4 as we did in the Year One Report. This comparison allows us to see the magnitude of providers of preventive care both within and outside the EPSDT program in each State. Note that those who provide preventive care only outside of EPSDT are "shadow" program providers. Around half of the pediatricians who provided any preventive care in California, Georgia and Tennessee in 1989 were also involved in the EPSDT program in those States in that year. In 1992, this applied in California and Tennessee, but in Georgia and Michigan the percentages participating in both the EPSDT and "shadow" program were higher. In Georgia, around 75 percent of pediatricians who provide some preventive care also participated in the EPSDT program in 1992 and in Michigan, virtually all of the pediatricians were in both the "shadow" and EPSDT program.

For other primary care physician providers the patterns were somewhat different. A far smaller percentage of other primary care physicians who provided some preventive care provided EPSDT services in 1989. This ranged from less than 1 percent in Michigan to 23 percent in California. By 1992, this had changed dramatically in Michigan; around 70 percent of other primary care physicians providing preventive care services also provided preventive care through the EPSDT program. In the other States this percentage ranged from 13 percent (Tennessee) to 22 percent (California). In 1989, Michigan had an extremely small percentage of any specialty specialists providing EPSDT services, despite their involvement in preventive care in general. This was most likely due to the strict requirements placed on EPSDT providers in that State. This finding corroborates the earlier report (Herz *et al.*, 1994) that showed an extensive amount of preventive services provided outside of the EPSDT program to children in Michigan. Clearly, changes in Michigan's policies have brought about changes in EPSDT and overall preventive care participation among individual providers over the 1989 to 1992 time period.

[3]As noted, there are often conflicts between the provider type on the provider file and that found on the claims.

d. Institutional Providers

The data in Table 7 summarize the changes between 1989 and 1992 in the counts and mean dollars paid for providers whose services were billed through free-standing clinics for all services to children, preventive care services and EPSDT services separately. We also include information on changes in caseloads for all services to children over the study period. We focus on these institutional providers for this overall view since they were the primary institutional providers of preventive and EPSDT services in all States except California. In Appendix A, Tables A-3, A-5 and A-7 provide the full data on counts, average Medicaid payments and average recipients seen in clinics, outpatient departments and other institutional settings in both years.

The data in Table 7 indicate that both the number of clinics and clinics' average Medicaid practice volume has grown significantly over the study period. There are, however, different patterns for all children's services versus preventive care as well as some differences across States. For all children's services, the percentage growth in the number of clinics serving children ranged from 50 percent to 81 percent in three study States, but Tennessee experienced less growth (23 percent). Although there were differences in the growth rate of dollar volume provided by these clinics, the average dollar amounts paid were fairly similar in 1992, averaging around $40,000 in California, Michigan and Tennessee and $55,000 in Georgia. While the number of children served by these clinics grew in California, Georgia and Tennessee, it declined in Michigan. This is perhaps indicative of an increase in the participation of office-based physicians in serving children. Average caseloads at these clinic providers were highest for Georgia in both 1989 and 1992.

There were increases in the number of clinics providing any preventive care services to children in all study States, but this was particularly true in California where the number almost doubled. Yet these clinic providers, as well as those located in Tennessee, were paid far less than in Georgia and Michigan. In California, the average was approximately $11,000 and in Tennessee, less than $10,000 in 1992. In Georgia, the amount paid for basic preventive care services was over $55,000 and in Michigan it averaged around $30,000. These mean dollar amounts were much higher than the amount paid to a typical pediatrician's preventive care practice in these two States, but the amounts paid to free-standing clinics in California and Tennessee were comparable to the average payments to pediatricians in those States.

Data in Table 7 show that the involvement of clinics in providing EPSDT services grew in all States, but particularly in California and Michigan. In California, the number of clinics grew by over 60 percent, while in Michigan the number tripled. While the number of clinics providing EPSDT services also increased in Georgia and Tennessee, the percentage growth was less than 25 percent in each. The amount of EPSDT

TABLE 7

CHANGES IN THE NUMBER AND PRACTICE SIZE OF CLINICS PROVIDING ANY CHILDREN'S SERVICES IN MEDICAID AND PROVIDING BASIC PREVENTIVE OR EPSDT SERVICES, CALIFORNIA, GEORGIA, MICHIGAN, TENNESSE, 1989 AND 1992

	California			Georgia			Michigan			Tennessee		
	1989	1992	% Change	1989	1992	% Change	1989	1992	% Change	1989	1992	% Change
Any Services												
Number of Clinics	1,445	2,612	81%	261	458	75%	705	1,060**	50%	754	925	23%
Mean Amounts Paid	$28,753	$43,982	53	$35,218	$55,479	58	$23,654	$43,855	85	$24,982	$40,482	62
Mean Caseloads	154	233	51	480	598	25	295	239	(23)	200	296	48
Basic Preventive												
Number of Clinics	580*	1,137*	96%	171	225	32%	200	296**	48%	371	521	40%
Mean Amounts Paid	$6,622	$10,836	64	$29,878	$57,039	91	$28,118	$30,219	7	$6,120	$8,233	35
EPSDT												
Number of Clinics	288*	466*	62%	170	194	14%	83	248**	199%	151	185	23%
Mean Amounts Paid	$10,069	$20,943	108	$3,005	$65,710	119	$64,969	$65,710	1	$14,523	$21,058	45

* Includes 46 school-based clinics in 1992; omitted from 1989 numbers.

** Includes 6 school districts (unknown member of school-based clinics); only 4 provided preventive care services.

provided by these clinics and paid for by Medicaid grew by 45 percent in Tennessee and more than doubled in both California and Georgia. In Michigan the average amount was virtually equal in the two years but along with Georgia, was much higher in absolute terms than the other two States. In Georgia and Michigan clinics were paid an average of $65,000 in 1992 whereas in California and Tennessee these amounts were lower at $20-21,000.

Data in Appendix A (Tables A-3, A-5, and A-7) show similar patterns.

- Free-standing clinic providers of ***all*** children's services outnumbered outpatient departments/hospital-based clinics in each State but were smaller in terms of average volume except in California.
- Free-standing clinic providers outnumber outpatient departments/hospital-based clinics in terms of the provision of ***preventive*** care services in all States except California and average amounts paid by Medicaid were far more for these providers in Georgia and Michigan.
- In 1989, ***preventive*** care was virtually all that was provided to children in these free-standing clinics in Georgia and Michigan; in 1992 this only held for Georgia.
- Free-standing clinics were the only providers of ***EPSDT*** services in 1989 in all States except California but by 1992 a few outpatient department/hospital-based clinics were involved in providing ***EPSDT*** in Georgia and Michigan.
- ***EPSDT*** services were virtually the only services provided to children by these free-standing clinics in Georgia and Tennessee.

Overall, over the study period there were fairly stable patterns among clinics in the States' provider systems.

Finally, the data in Table 7 reflect the involvement of institutional providers in providing preventive care outside of the EPSDT program. Comparing the numbers involved in preventive care overall to those involved in the EPSDT program indicates that in California, Michigan and Tennessee, clinics were important providers of non-EPSDT preventive care services, or "shadow" program services, in 1989. In Tennessee for example, there were more than twice as many clinics providing some preventive care than the number providing EPSDT, 521 versus 185 in 1992. Georgia apparently had only one clinic provider of non-EPSDT preventive care in both years. (Again, this may reflect a data-generated error.) The only State in which the pattern changed significantly was Michigan. In 1989, fewer than half were involved in both programs whereas in 1992, 248 of the 296 providing some preventive care were also providing EPSDT services.

e. *Institutional Provider Details (1992)*

As noted earlier, we were able to provide more detail on institutional providers by using the 1992 data. Although these data are only available for 1992, it is informative to examine the respective roles of the different types of providers. Data in Table 8 in the text provide numbers of clinic providers of all children's services, preventive services, and EPSDT services in 1992. These numbers indicate that rural health centers and FQHCs comprised a small percentage of the total number of providers of children's services (we were not able to identify any EPSDT claims for FQHCs in Georgia due to lack of procedure codes). At most, FQHCs constituted 19 percent of the total number of clinic providers in Michigan. Because FQHCs can provide a high volume of care, we also need to examine their contribution to the total dollar volume in each State. (See Table 9 in the text and Table A-14 (1992) in Appendix A.) Table 9 shows that FQHCs' dollar volume tends to represent a very small percentage (not more than 3 percent) of the total for all institutional providers of children's services in all States except Tennessee, where FQHCs' dollar volume comprises ten percent, (although dollar measures in California were not reliable). The percentage of institutional dollars paid to rural health clinics for all children's services was lower (not more than 2 percent) in all study States.

The relative importance of FQHCs increases only slightly when we consider preventive care dollars. This holds in Michigan and California. The importance of FQHCs drops perceptively, however, in Tennessee. There, they account for only four percent of total Medicaid dollars for preventive care specifically. They receive less than one percent of total preventive care dollars in Georgia.

The role of public health departments within the set of clinic providers can be analyzed in only two States--Georgia and Tennessee--due to data problems in the other States. In California, there were no providers with a provider type code (912) identifying them as public health departments. In Michigan, we found no EPSDT claims for public health department providers. State documentation indicated that EPSDT outreach was moved from public health departments to the schools. The one pattern that is consistent for these two States is that public health departments are very important clinic-based providers of services to children in Georgia. This is true in terms of both the relative number of providers (shown in Table 8 in the text) and in terms of total dollars (Table 9 in text and Table 14 in Appendix A). Furthermore, this applies in Georgia for all children's services, for preventive care services, and for EPSDT specifically. In that State, public health departments constitute 61 percent of the total number of clinics providing services to children overall and 86-88 percent of those providing preventive care services. They are paid 67 percent of the total amount of Medicaid dollars paid to any institutional providers of preventive care in that State. In Tennessee, public health departments account for a smaller percentage of all clinic providers and dollars for all

TABLE 8

TYPES OF CLINICS INVOLVED IN PROVIDING ANY CHILDREN'S SERVICES AND PROVIDING BASIC PREVENTIVE CARE OR EPSDT SERVICES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

	California		Georgia		Michigan		Tennessee	
	Count	% Total	Count	% Total	Count	% Total	Count	% Total
Any Services								
Total	2,612		458		1,060		925	
Rural Health	388	15%	17	4%	40	4%	13	1%
FQHC	506	19	13	3	206	19	58	6
Public Health	**	**	279	61	96	9	128	14
Other Clinic	1,718	66	149	33	718	68	727	79
Basic Preventive								
Total	1,137*		225		296***		521	
Rural Health	239	21%	8	4%	23	8%	9	2%
FQHC	275	24	6	3	142	48	53	10
Public Health	**	**	193	86	****	****	126	24
Other Clinic	623*	55	18	8	127	43	333	64
EPSDT								
Total	466*		194		248***		185	
Rural Health	72	15%	6	3%	12	5%	0	0%
FQHC	101	22	0	0	134	54	25	14
Public Health	**	**	170	88	****	****	126	68
Other Clinic	293*	63	18	9	98	40	34	18

* Includes 46 school-based clinics.

** Public health departments could not be separately identified in California, they are included in other clinics.

*** Includes 6 school districts (unknown number of school clinics).

**** There were no public health departments identified as providers of EPSDT or basic preventive care. They are included in the other clinic category.

TABLE 9

PERCENT DISTRIBUTION OF DOLLARS PAID FOR ANY CHILDREN'S SERVICES AND FOR BASIC PREVENTIVE CARE PROVIDED TO CHILDREN BY PLACE OF SERVICE, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, USING EXPANDED CATEGORIES FOR 1992

Usual Provider Setting	California	Georgia	Michigan	Tennessee
	Percent Dollars	Percent Dollars	Percent Dollars	Percent Dollars
Any services to Children				
Ambulatory	40%	39%	31%	31%
Office	18	37	43	39
OPD/ER	21	11	21	18
Clinic	2%	< 1%	< 1%	< 1%
Rural Health	3	< 1	2	10
FQHC	**	6	< 1 ***	1
Public Health	16	4	19	16
Other Clinic	10	3	1	3
Other Ambulatory				
Inpatient	10%	10%	4%	9%
Basic Preventive Care				
Ambulatory	5%	2%	35%	18%
Office	10	1	6	8
OPD/ER	15	68	59	34
Clinic	2%	< 1%	< 1%	< 1%
Rural Health	4	< 1	3	4
FQHC	**	67	***	21
Public Health	9	1	56	9
Other Clinic	69	29	< 1	38
Other Ambulatory				
Inpatient	< 1%	< 1%	< 1%	2%

** Public Health departments could not be separately identified in California. Provider counts and dollars for public health departments fall into "other clinic".

*** Public health department claims for EPSDT services could not be separately identified in Michigan. They, as well as the school based clinics, fall into "other clinic".

children's services than for preventive care specifically. In terms of preventive care, they account for 24 percent of clinic providers and 21 percent of all institutional dollars for preventive care services.

3. Practice Size: Dental Providers

We also computed the mean amount paid and average caseloads for individual and institutional dental providers. Table 10 in the text presents changes between 1989 and 1992 while detailed tables in Appendix C (Tables C-3) present mean amount paid and mean recipients served for each year. As a point of reference, we also include counts for dental providers. These counts are stratified by provider type--individual and institutional. Each of these major categories is then broken out according to specialty (individual dentists) and type of clinic (institutional dental providers), as opposed to category of service. We also present a provider type category identified as "other/unknown," which includes dental providers who were identified on claims but were not found on the provider file.

a. Providers of All Dental Services

In all four States there was an increase in the average practice size for dental providers who delivered services to Medicaid-enrolled children. For total individual and total institutional dental providers, mean amount paid by Medicaid and mean recipients served increased. While consistent across all four study States, this trend occurred along with both increases and decreases in the *number* of dental providers across the States. For example, the number of individual dentists increased in Georgia and Tennessee but decreased in California and Michigan.

On average, individual dentists in Georgia had the largest practices, as measured by annual Medicaid reimbursement and recipients served, compared with those in the other three study States in both 1989 and 1992 (Appendix C, Table C-3). In 1992, we found the smallest practices for individual dentists in Michigan. In 1989, the evidence for identifying the State with the smallest practice size was not consistent--average Medicaid reimbursement to individual dentists was lowest in Michigan, but the average number of recipients served was lowest in California.

The magnitude of the increase in average Medicaid reimbursement paid to individual dental providers serving children varied considerably among the four study States (Table 10). In California, for individual dentists, the mean amount paid by Medicaid increased by over 150 percent. In 1992, we found that individual dentists in Michigan were reimbursed less than $10,000 from Medicaid whereas individual dentists in the other three States received over $15,000 from Medicaid (Appendix C, Table C-3-92).

TABLE 10

PROVIDERS OF CHILDREN'S DENTAL SERVICES, BASED ON INDIVIDUAL/INSTITUTIONAL CATEGEORIZATION, MEAN AMOUTN PAID AND MEAN RECIPIENTS SERVED, ALL SERVICES, 1989 AND 1992

Dental Provider Type	Counts				Mean Amount Paid				Mean Recipients Served			
	% Change				% Change				% Change			
	California	Georgia	Michigan	Tennessee	California	Georgia	Michigan	Tennessee	California	Georgia	Michigan	Tennessee
Individual Dentists												
Total	-17.6	2.4	-1.0	3.0	156.3	74.1	28.7	61.8	41.6	61.5	17.4	63.3
General Dentistry	-17.6	2.4	-1.0	1.3	156.3	74.1	28.7	63.3	41.6	61.5	17.4	66.3
Oral Surgeons	0.0	0.0	0.0	28.2	0.0	0.0	0.0	57.5	0.0	0.0	0.0	50.0
Institutional Dental Providers												
Total	+108.0	0.0	175.0	-1.9	+37,189.0	0.0	84.3	27.7	+249.0	0.0	-3.1	17.5
Dental Clinics	0.0	0.0	-50.0	-20.8	0.0	0.0	13.2	31.5	0.0	0.0	11.6	18.0
Other Clinics	+108.0	0.0	+36.0	+10.0	+37,189.0	0.0	+15,008.0	+23,413.0	+249.0	0.0	+121.0	+253.0
*Other/Unknown**	738.4	0.0	-84.1	0.0	116.7	0.0	-40.3	966.1	-3.2	0.0	-64.8	+181.0

*Includes individual and other/unknown dental providers. These providers were identified on claims but were not found in the provider file.

Furthermore, as shown in Table 10, we found the smallest increase in mean amount paid to individual dentists in Michigan (28.7%). In Tennessee, the only State in which we identified oral surgeons who provided dental care to Medicaid-enrolled children, the percentage increase in mean amount paid was slightly higher for general dentists (63.3%) than for oral surgeons (57.5%).

The increase in mean recipients served by individual dentists ranged from 17.4 percent in Michigan to 63.3 percent in Tennessee (Table 10). In California, Georgia, and Michigan, the increase reflected an increase for general dentists; in Tennessee, mean recipients served by general dentists increased 66.3 percent and for oral surgeons the increase was 50 percent. Individual dentists in Georgia had the largest caseload compared with individual dentists in the other three States. In 1992, they served an average of nearly 200 children (Table C-3-92). In the other three States, individual dentists averaged closer to 100 children served. Oral surgeons had much smaller caseloads than general dentists. In Tennessee in 1992 there were 91 oral surgeons who provided services to Medicaid-enrolled children, and on average they served 30 recipients (Table C-3-92).

We found institutional dental providers serving children in Michigan and Tennessee in both 1989 and 1992, and in California in 1992 (Tables C-3). In California (1992), there were 108 institutional dental providers that each served an average of 249 recipients which was about 1.3 times as many recipients that individual dentists served. Compared with individual dentists in California, these dental clinics were reimbursed almost twice as much by Medicaid in 1992.

In Michigan, we observed a decrease in the number of dental clinics between 1989 and 1992; however, there was an offsetting increase in the number of other clinics providing dental services, producing an overall increase in the total number of institutional dental providers (Table 10). In 1992, dental clinics were reimbursed an average of 10 percent more than individual dentists and, on average, served about 43 percent more Medicaid-enrolled children (Table C-3-92). For other types of clinics, however, average reimbursement was almost twice as much compared with that for individual dentists and dental clinics. These other types of clinics served fewer recipients, on average, than dental clinics, but they served about 20 percent more recipients on average than individual dentists did in 1992.

Tennessee experienced a slight decrease in institutional dental providers serving Medicaid-enrolled children, largely due to a decline in dental clinics (Table 10). We did not identify any rural health clinics or FQHCs providing dental services to Medicaid-enrolled children in 1989 in any State, but in 1992 there were 10 of these clinics serving children in the Medicaid program in Tennessee. Both categories of institutional dental providers (dental and other clinics) received about the same average reimbursement from Medicaid

and served about the same average number of recipients. For all institutional dental providers together, average reimbursement from Medicaid was approximately 67 percent more than for all individual dentists in 1992. Mean recipients served by institutional providers was about twice that for individual dentists in 1992.

b. Providers of Specific Categories of Dental Services

Changes in average caseloads and mean Medicaid reimbursement to providers of specific categories of service are presented in Tables 11 through 14, the accompanying tables with detailed amounts and counts of providers are included in Appendix C (Tables C-4 through C-7). With respect to categories of service, we did not find consistent patterns across the States. For example, in California, the percentage change in the average number of recipients served was smaller for each of the categories of service that we identified than for all services together; however, in Tennessee, the change in mean recipients served was higher for each category of service compared with all services together. In California, the biggest difference was for therapeutic services; the average caseload in 1992 was approximately 16 percent higher for therapeutic services than all services (Table C-7-92). In Tennessee, the biggest difference was between preventive services compared with all services. In 1992, average caseloads for preventive services were about 18 percent higher than those for all services together (Table C-6-92).

4. Place of Service

Although we have grouped individual physicians separately from clinics and outpatient departments, individual physicians often provide some of their services in these settings even if they are predominantly office-based. As noted in the literature review, the place of service is a key indicator of Medicaid enrollees' access and programmatic costs. If physicians are more likely to see Medicaid enrollees in office settings post-OBRA89 this may be indicative of a favorable change in access to primary care providers. In order to examine the patterns of service provision by place of service, we have organized individual physician providers by their dominant place of service based on the place of service in which they were paid for the most services during the year. Summary data are shown in pie charts for 1989 and 1992 for all children's services and for preventive care (see Exhibits 1 through 4 and Exhibits 5 through 8, respectively). These charts depict changes in patterns of service provision across physician specialty and State. Physician providers are grouped by the following "dominant" settings: 1) inpatient, 2) outpatient-office, 3) outpatient-other (e.g., clinic, outpatient department). Those with predominantly unknown settings (generally less than one percent) were omitted from the pie charts and the percentages have adjusted to total 100 percent.

TABLE 11

PROVIDERS OF CHILDREN'S DENTAL SERVICES, BASED ON INDIVIDUAL/INSTITUTIONAL CATEGEORIZATION,
MEAN AMOUTN PAID AND MEAN RECIPIENTS SERVED, DIAGNOSTIC,
PREVENTIVE, OR THERAPEUTIC SERVICES, 1989 AND 1992

Dental Provider Type	Counts				Mean Amount Paid				Mean Recipients Served			
	% Change				% Change				% Change			
	California	Georgia	Michigan	Tennessee	California	Georgia	Michigan	Tennessee	California	Georgia	Michigan	Tennessee
Individual Dentists												
Total	-17.2 %	2.3 %	-1.2 %	1.9 %	155.4 %	74.2 %	29.0 %	60.1 %	41.0 %	61.5 %	18.6 %	65.4 %
General Dentistry	-17.2	2.3	-1.2	0.1	155.4	74.2	29.0	61.6	41.0	61.5	18.6	68.2
Oral Surgeons	0.0	0.0	0.0	26.8	0.0	0.0	0.0	58.7	0.0	0.0	0.0	50.0
Institutional Dental Providers												
Total	0.0	0.0	175.0	-3.8	0.0	0.0	84.3	27.2	0.0	0.0	-3.1	19.4
Dental Clinics	0.0	0.0	-50.0	-22.6	0.0	0.0	13.2	-93.8	0.0	0.0	11.6	-95.4
Other Clinics	0.0	0.0	0.0	+10.0	0.0	0.0	0.0	+23,413.0	0.0	0.0	0.0	+253.0
*Other/Unknown**	726.1	0.0	-94.8	-66.7	119.8	0.0	23.4	899.7	508.7	0.0	1.3	805.0

*Includes individual and other/unknown dental providers. These providers were identified on claims but were not found in the provider file.

TABLE 12

PROVIDERS OF CHILDREN'S DENTAL SERVICES, BASED ON INDIVIDUAL/INSTITUTIONAL CATEGEORIZATION,
MEAN AMOUTN PAID AND MEAN RECIPIENTS SERVED,
DIAGNOSTIC SERVICES, 1989 AND 1992

Dental Provider Type	Counts				Mean Amount Paid				Mean Recipients Served			
	% Change				% Change				% Change			
	California	Georgia	Michigan	Tennessee	California	Georgia	Michigan	Tennessee	California	Georgia	Michigan	Tennessee
Individual Dentists												
Total	-15.6 %	2.2 %	-1.7 %	1.6 %	150.5 %	74.3 %	29.7 %	60.2 %	38.6 %	60.8 %	19.3 %	65.5 %
General Dentistry	-15.6	2.2	-1.7	0.2	150.5	74.3	29.7	61.0	38.6	60.8	19.3	68.2
Oral Surgeons	0.0	0.0	0.0	20.9	0.0	0.0	0.0	66.3	0.0	0.0	0.0	57.1
Institutional Dental Providers												
Total	0.0	0.0	200.0	-4.0	0.0	0.0	70.9	28.5	0.0	0.0	-10.6	18.7
Dental Clinics	0.0	0.0	-66.7	-24.0	0.0	0.0	71.2	-93.4	0.0	0.0	68.2	-94.8
Other Clinics	0.0	0.0	0.0	+10.0	0.0	0.0	0.0	+23,413.0	0.0	0.0	0.0	+253.0
*Other/Unknown**	755.2	0.0	-94.6	66.7	112.9	0.0	19.8	966.1	508.3	0.0	-1.2	805.0

*Includes individual and other/unknown dental providers. These providers were identified on claims but were not found in the provider file.

TABLE 13

PROVIDERS OF CHILDREN'S DENTAL SERVICES, BASED ON INDIVIDUAL/INSTITUTIONAL CATEGEORIZATION,
MEAN AMOUTN PAID AND MEAN RECIPIENTS SERVED,
PREVENTIVE SERVICES, 1989 AND 1992

Dental Provider Type	Counts				Mean Amount Paid				Mean Recipients Served			
	% Change				% Change				% Change			
	California	Georgia	Michigan	Tennessee	California	Georgia	Michigan	Tennessee	California	Georgia	Michigan	Tennessee
Individual Dentists												
Total	-17.4 %	2.6 %	-1.3 %	-0.3 %	155.6 %	72.5 %	29.1 %	59.1 %	40.9 %	60.0 %	18.3 %	68.9 %
General Dentistry	-17.4	2.6	-1.3	0.0	155.6	72.5	29.1	59.3	40.9	60.0	18.3	67.0
Oral Surgeons	0.0	0.0	0.0	-37.5	0.0	0.0	0.0	-6.7	0.0	0.0	0.0	8.0
Institutional Dental Providers												
Total	0.0	0.0	277.8	-2.0	0.0	0.0	36.1	24.9	0.0	0.0	-28.1	17.4
Dental Clinics	0.0	0.0	-44.4	-22.0	0.0	0.0	3.3	-93.7	0.0	0.0	2.7	-94.8
Other Clinics	0.0	0.0	0.0	+10.0	0.0	0.0	0.0	+23,423.0	0.0	0.0	0.0	+253.0
*Other/Unknown**	713.6	0.0	-95.0	0.0	118.1	0.0	29.0	>1,000.0	-4.3	0.0	6.8	402.8

*Includes individual and other/unknown dental providers. These providers were identified on claims but were not found in the provider file.

TABLE 14

PROVIDERS OF CHILDREN'S DENTAL SERVICES, BASED ON INDIVIDUAL/INSTITUTIONAL CATEGEORIZATION,
MEAN AMOUTN PAID AND MEAN RECIPIENTS SERVED,
THERAPEUTIC SERVICES, 1989 AND 1992

Dental Provider Type	Counts				Mean Amount Paid				Mean Recipients Paid			
	% Change				% Change				% Change			
	California	Georgia	Michigan	Tennessee	California	Georgia	Michigan	Tennessee	California	Georgia	Michigan	Tennessee
Individual Denlists												
Total	-13.8 %	3.2 %	-1.5 %	0.7 %	144.3 %	72.6 %	29.4 %	61.1 %	35.5 %	60.5 %	19.4 %	67.8 %
General Dentistry	-13.8	3.2	-1.5	-1.5	144.3	72.6	29.4	63.0	35.5	60.5	19.4	70.7
Oral Surgeons	0.0	0.0	0.0	29.4	0.0	0.0	0.0	55.6	0.0	0.0	0.0	47.6
Institutional Dental Providers												
Total	0.0	0.0	214.3	2.0	0.0	0.0	61.5	20.9	0.0	0.0	-15.0	12.0
Dental Clinics	0.0	0.0	-42.9	-18.4	0.0	0.0	-0.8	-94.0	0.0	0.0	-2.0	-95.3
Other Clinics	0.0	0.0	0.0	+10.0	0.0	0.0	0.0	+23,413.0	0.0	0.0	0.0	+253.0
*Other/Unknown**	664.5	0.0	200.0	-66.7	127.9	0.0	59.6	966.1	1.9	0.0	32.6	805.0

*Includes individual and other/unknown dental providers. These providers were identified on claims but were not found in the providor file.

a. All Services for Children Under 21

Data in Exhibits 1 through 4 show the dominant place of service for pediatricians, other primary care physicians (general and family practitioners, internists and obstetrician/gynecologists) when they provided any services to Medicaid children in 1989 or 1992. Each State is represented by a separate exhibit, and each is discussed in turn below.

In California (Exhibit 1), primary care physicians generally provided services to children in office-based settings, although a substantial but smaller proportion of primary care physicians provided services in inpatient settings. In 1989, for example, over two-thirds (68 percent) of pediatricians provided care in office settings. By 1992, however, this percentage had declined to 61 percent, with larger proportions of pediatricians providing care in inpatient and outpatient settings. Pediatricians (including pediatric subspecialists) were, in general, more likely than other primary care physicians to provide care in inpatient settings. Similar to the pattern of change in pediatricians' predominant place of service, other primary care physicians were slightly less likely to be providing care in office-based settings; the percentage of other primary care physicians providing care in offices declined from 79 percent in 1989 to 76 percent in 1992. Other physicians, however, were much less likely to provide care in office-based settings (50 percent in 1989, and 45 percent in 1992); this finding is not surprising given that this group of physicians provides a more specialized set of services. A noteworthy finding for California is that, for all physician specialties, the provision of office-based care declined over the study period.

Slightly different patterns can be seen in Georgia, Michigan, and Tennessee (Exhibits 2 through 4). For pediatricians and other primary care physicians in Georgia, the percentages providing care predominantly in office-based settings declined markedly from 1989 to 1992 (67 to 59 percent for pediatricians, and 67 to 57 percent for other primary care physicians). In Georgia, the predominant place of service for pediatricians and other primary care physicians appears to be shifting somewhat from the office setting to the outpatient setting, rather than to inpatient settings as in California. For other physicians the provision of office-based care did not change greatly, but there was a slight shift in the proportions of other physicians providing care in the inpatient and outpatient settings. Specifically, the proportions of other physicians providing care in outpatient settings changed from 20 percent in 1989 to 26 percent in 1992.

In Michigan, there were smaller decreases across all physician specialties in the provision of office-based care. For example, 65 percent and 61 percent of pediatricians and other primary care physicians, respectively, provided care predominantly in offices. These percentages changed slightly by 1992--to 60 percent for both pediatricians and other primary care physicians. A small but perceptible change occurred

Exhibit 1
Distribution of Pediatricians, Other Primary and Other Physician Specialities by Dominant Place of Service, California, All Children's Services, 1989 and 1992

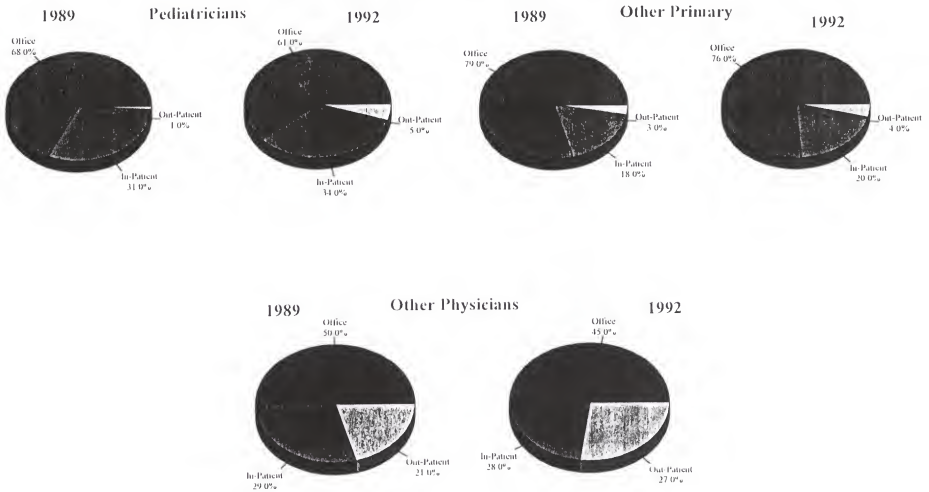


Exhibit 2
Distribution of Pediatricians, Other Primary and Other Physician Specialties by Dominant Place of Service, Georgia, All Children Services, 1989 and 1992

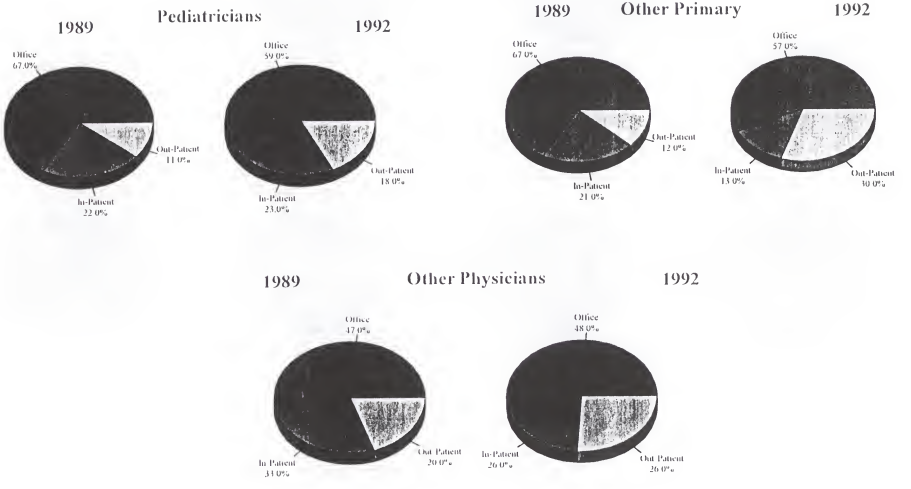
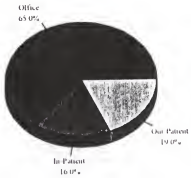
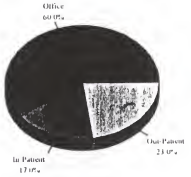


Exhibit 3
Distribution of Pediatricians, Other Primary and Other Physician Specialities by Dominant Place of Service, Michigan, All Children's Services, 1989 and 1992

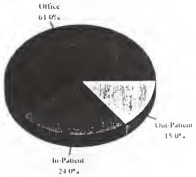
1989 Pediatricians



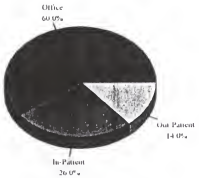
1992



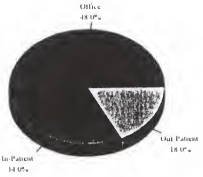
1989 Other Primary



1992



1989 Other Physicians



1992

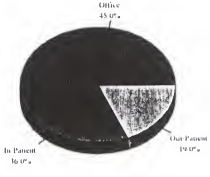
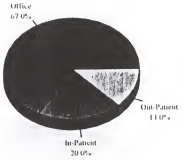
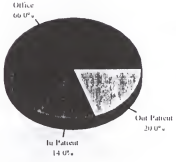


Exhibit 4
Distribution of Pediatricians, Other Primary and Other Physician Specialities by Dominant Place of Service, Tennessee, All Children's Services, 1989 and 1992

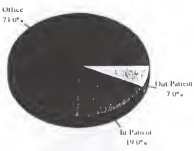
1989 Pediatricians



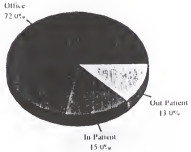
1992



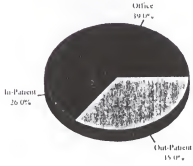
1989 Other Primary



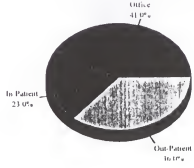
1992



1989 Other Physicians



1992



for other physicians in Michigan; while 48 percent of other physicians had provided care predominantly in offices in 1989, only 45 percent did in 1992.

In Tennessee, there were also decreases in the percentages of physicians providing office-based care, but no change was greater than two percentage points. There were observable shifts in the provision of inpatient and outpatient care by all types of physicians. In 1989, the percentages of physicians providing care in inpatient settings ranged from 19 percent for non-pediatric primary care physicians to 26 percent for other physicians. By 1992, the percentage of physicians providing care in inpatient settings ranged from a low of 14 percent (for pediatricians) to 23 percent for other physicians.

b. Preventive Care Services

For basic preventive services, the distributions of physicians by dominant place of service show slightly more variation than the previous distributions, which showed dominant setting for all types of services. The patterns differ a bit more for these services. The patterns of change are similar in California and Michigan but different in Georgia and Tennessee (see Exhibits 5 through 8). In California and Michigan, there were slight declines in the percentage of pediatricians providing preventive care in their office setting, from 86 percent to 84 percent in California and from 82 percent to 78 percent in Michigan; the percentage of other primary care specialists also *declined* slightly in each State. The States differ with respect to changes for other physician specialists. In Michigan, these specialists were somewhat less likely than primary care specialists to be in their office when providing preventive care and this percentage declined somewhat 1989 to 1992 (from 70 percent to 67 percent). In California, only 34 percent of these other specialists were predominantly in their office when providing preventive care to children in 1989 but by 1992 this had increased to 42 percent. As we have seen elsewhere in this report, this group of physicians plays an important role in serving children in California; their patterns are often quite different from that found in the other study States.

In Georgia and Tennessee, there were significant *increases* in the percentage of pediatricians who provided preventive care to children predominantly in the office setting. In Georgia, this percentage increased from only 37 percent in 1989 to 83 percent in 1992; in Tennessee, these respective percentages were 49 percent and 73 percent. Both of these patterns indicate that enrollees had increased access to office-based pediatricians who were actively providing preventive care services. There were also increases in the percentage of other primary care specialists who provided preventive care predominantly in their office in both Georgia and Tennessee. It is difficult to say whether these pediatricians and other primary care specialists are switching the location at which they see children for preventive care or whether newly

Exhibit 5
Distribution of Pediatricians, Other
Primary and Other Physician Specialities by
Dominant Place of Service
California, Basic Preventive Services, 1989 and 1992

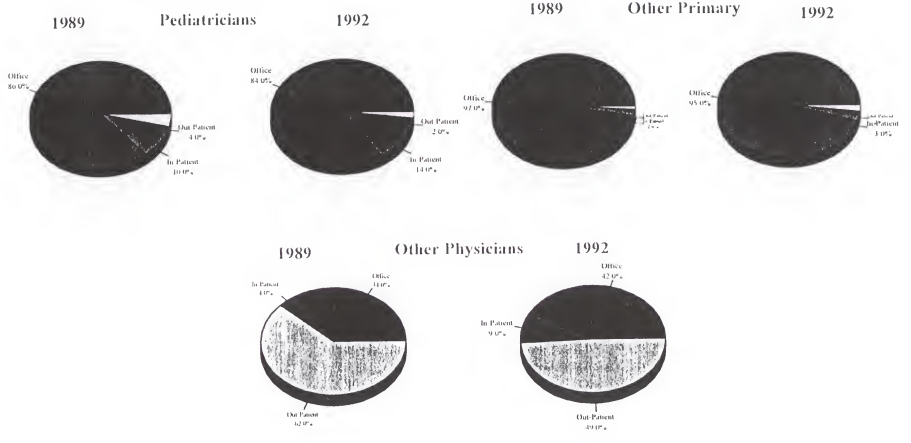


Exhibit 6
Distribution of Pediatricians, Other Primary and Other Physician Specialities by Dominant Place of Service, Georgia, Basic Preventive Services, 1989 and 1992

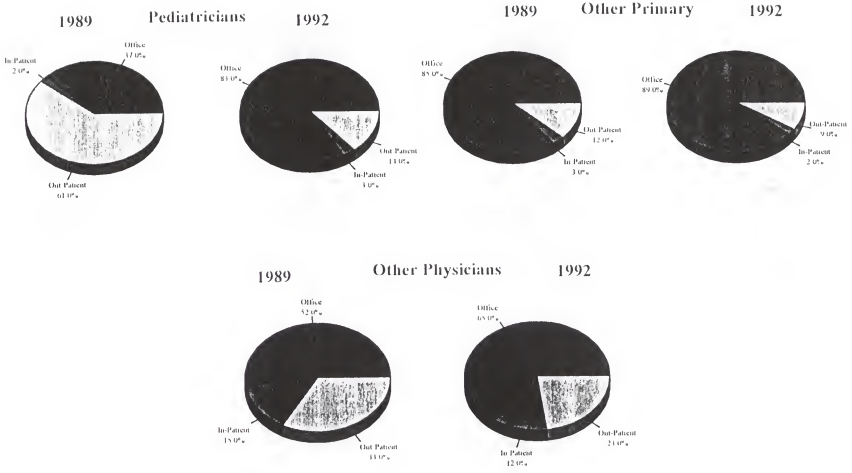
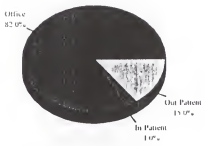
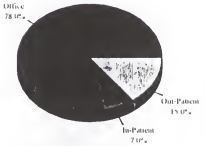


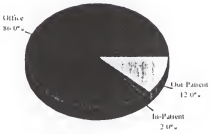
Exhibit 7
Distribution of Pediatricians, Other
Primary and Other Physician Specialities by
Dominant Place of Service,
Michigan, Basic Preventive Services, 1989 and 1992

1989 Pediatricians 1992

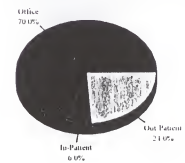




1989 Other Primary 1992



1989 Other Physicians 1992



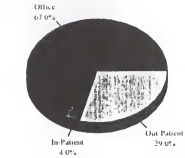
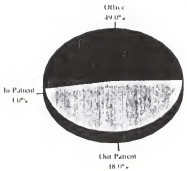
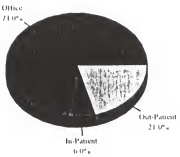


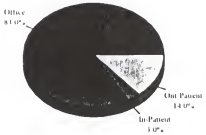
Exhibit 8
Distribution of Pediatricians, Other
Primary and Other Physicians Specialities by
Dominant Place of Service
Tennessee, Basic Preventive Services, 1989 and 1992

1989 Pediatricians 1992

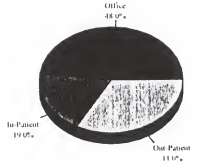


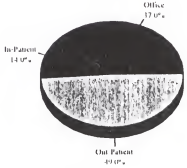


1989 Other Primary 1992



1989 Other Physicians 1989





participating physicians were predominantly office-based providers who also provided preventive care in that setting. We did see earlier that Georgia and Tennessee exhibited the highest percentage growth in the numbers of physicians providing preventive care over the 1989 to 1992 time period. For other physician specialties, the percentage predominantly in the office setting when providing preventive care also increased in Georgia while declining somewhat in Tennessee.

We note that we did not separately provide data on dollars paid by place of service for EPSDT preventive care services alone because of data problems. To assign the place of service for individual providers, we used the place of service code that appeared on most of their claims. This code is largely missing for EPSDT claims in all four study States.

c. All Services for Children Under 21 by Urban/Rural Location

In Appendix B, Tables B-9 through B-12 (1989 and 1992), we present data on the dominant place of service for providers of services to children under 21 by urban/rural status. There are several consistent patterns across the States to note. First, for both pediatricians and other primary care physicians, the percentage whose dominant place of service for children was the office was generally lower in the inner urban counties compared to other counties, especially the suburban and rural ones. In inner urban areas, these percentages for pediatricians ranged from 51 to 63 percent in 1989; in 1992 the same pattern prevailed and the percentages ranged from 52 percent to 60 percent. In contrast, the suburban and rural areas, this percentage range was higher in both years, ranging from 61 percent to 100 percent in suburban areas and 56 percent to 100 percent in rural areas in 1992. We also note there were significant drops in the percentage predominantly office-based for pediatricians and other primary care specialists in California rural areas over the study time period.

On the other hand, other physician specialists were far less likely to have the office as their dominant place of service across all urban and rural areas. The percent of these types of providers who served children in the office was in the 40-55 percent range in 1989. While this pattern generally held in 1992, there were some increases, especially in Georgia. An important difference shown across urban and rural areas for these physicians relates to the inpatient setting. The percentage of other physicians whose typical place of service was the inpatient setting in inner urban and urban areas was often twice that found in rural and suburban areas. The percentages in the former ranged from 15-43 percent in 1989 and 13-34 percent in 1992, while in the latter they ranged from 7-20 percent in 1989 and from 7-14 percent in 1992. As discussed earlier, it is difficult to interpret exactly who these physicians are but these patterns indicate they played a different role in providing children's services for children residing in more urban areas.

d. Summary Place of Service

Finally, we draw together the data on individuals and institutions and summarize these by place of service as shown in Table 15 in the text. These are provided for all services to children, as well as for preventive care services. To derive these percentages we combined the dollars paid to office-based physicians predominantly in a non-office setting (e.g., clinic, outpatient department) with those paid directly to non-office-based providers. Note that the denominator is dollars paid, rather than providers. We excluded from this total payments to individual providers predominantly in unknown settings and dollars paid to other unknown outpatient providers (e.g., laboratories, home health agencies, etc.). As in earlier tables, dollars paid to providers such as hospitals, dentists and pharmacies were also omitted.

Despite the relatively large percentages of *physicians* and other individual providers whose typical setting was in the office, the data in Table 15 show that the largest percentage of total *dollars* paid were for services in non-office settings in 1989 and 1992. This indicates that those individual physicians who provided services in the clinic and outpatient department settings had relatively large practices, and, when combined with the dollars paid to those providers billing directly through the clinics and outpatient departments, the percentage of total dollars exceeded those paid to providers who provide most services to Medicaid children in the office setting. For all services to children under 21, the percentage of dollars paid to providers predominantly in the office ranged from 27 percent in Tennessee to 43 percent in California. In 1992, this percentage had increased somewhat in Tennessee to 31 percent, while declining in California to 40 percent. These patterns underline the changes seen in Exhibits 1 through 4, where the percentage of all specialists with a dominant place of service in the office declined in California but was more stable in Tennessee and actually increased for non-primary care specialists. The percentage of dollars paid for children's services to physicians in a non-office setting ranged from 45 percent to 60 percent in 1989 and from 49 percent to 65 percent in 1992, across the study States.

The percentage of dollars paid to providers who saw patients predominantly in an inpatient setting is not trivial. The percentage ranged from a low of six percent in Michigan to a high of 14 percent in Georgia; in 1992, it ranged from four percent in Michigan to 10 percent in California and Georgia. It is not surprising that a significant amount of dollars was paid for services in the inpatient setting but rather that these were to providers who predominantly submit claims for Medicaid children in that setting. Of course, some of these dollars represent dollars paid for the services of anesthesiologists, pathologists, etc. who encountered the majority of all patients they served in the inpatient hospital setting.

TABLE 15

PERCENT DISTRIBUTION OF DOLLARS PAID FOR ANY CHILDREN'S SERVICES AND FOR BASIC PREVENTIVE CARE PROVIDED TO CHILDREN BY PROVIDERS' DOMINANT PLACE OF SERVICE FOR EACH, CALIFORNIA GEORGIA, MICHIGAN AND TENNESSEE, 1989 AND 1992

	California		Georgia		Michigan		Tennessee	
	1989	1992	1989	1992	1989	1992	1989	1992
Any Services								
Office	43%	43%	40%	39%	35%	31%	27%	31%
Clinic/Outpatient	45	45	46	51	59	65	60	60
Inpatient	12	12	14	10	6	4	13	9
Basic Preventive								
Office	11%	5%	3%	2%	90%	35%	12%	18%
Clinic/Outpatient	88	94	96	97	10	65	87	80
Inpatient	1	<1	1	<1	1	<1	1	2

Q:\HPR\PROJECTS\1230\TABL.WPS

The patterns are even more dramatic when we consider the dollars paid by dominant place of service specifically for preventive care services. These are also shown in Table 15 in the text. For California, Georgia, and Tennessee, the percentage of total preventive care services paid to providers who saw patients predominantly in a clinic/outpatient department setting far exceeded that paid to those who saw patients predominantly in an office setting. California and Tennessee were comparable in 1989, at 87 to 88 percent; in Georgia fully 96 percent of preventive care dollars went to providers in the clinic/outpatient setting. In 1992, California and Georgia were similar with 94 percent of preventive care dollars being paid to providers predominantly in the clinic/outpatient department setting when providing preventive care; in Georgia, this equaled 97 percent in 1992. In Tennessee, the percentage of dollars paid to providers predominantly in this setting dropped from 87 percent to 80 percent in 1992.

By far the most dramatic change seen across the States in terms of payment for preventive care by place of service was in Michigan. There in 1989, 90 percent of the dollars paid to providers for preventive care services was paid to those who provided care predominantly in an office setting. This finding most likely reflected the relatively large amount of preventive care provided outside of the EPSDT program in Michigan, and the lack of participation by office-based physicians in EPSDT in 1989. By 1992, however, this had changed dramatically. The percentage of preventive care dollars paid to physicians and other individual providers who saw patients predominantly in an office setting dropped to only 35 percent. This seems inconsistent with the modest decreases seen between 1989 and 1992 in the percentage of *physicians* whose preventive care setting was predominantly office-based. Recall that the denominator in Table 15 is *dollars* and not *physicians*. The shift seen in Table 15 most likely reflects the significant amount of *dollars* paid for preventive care services provided through school-based clinics in 1992, as discussed with the data presented in Table 7. This was not a pattern seen in the 1989 data. The increase in the involvement of these clinics is seen in the number of clinics providing EPSDT services in 1989 versus 1992--they tripled in Michigan (see Table 7). Also, the numbers and average amounts of other individuals (who could be, for example, school nurses) providing preventive, and EPSDT specifically, also increased significantly (see Tables 5 and 6 in text).

Thus, as we saw in 1989, it appears that in 1992 providers either saw children in different settings when they provided preventive care services and/or children saw different providers for their preventive care services than for services overall. In 1989 some of this may have been related to EPSDT program requirements in some of thee States that made it difficult for physicians to provide all components of a screen in their office setting (e.g., special equipment, etc). However, this pattern was stronger in 1992, with the exception of Tennessee. It also may reflect that the providers involved in providing preventive care services were a subset of those providing children's services overall and the patterns may reflect practice

styles of these individual physicians. It may also reflect the settings in which clients sought preventive care, and/or other factors about the delivery system. Finally, the institutional providers are simply larger volume providers in some of the study States. This implies that it is extremely important to integrate these institutional sources of care into networks created under managed care or, alternatively, help enrollees alter their usual patterns of seeking preventive care.

F. PARTICIPATION RATES

1. Physicians

A question usually asked about Medicaid provider supply is what percentage of all providers in a given geographic area serve Medicaid enrollees? This is a particularly important issue as States are monitoring participation in response to OBRA89's requirement that access to physicians be comparable to that available to privately insured populations within a geographic area. Several reports have cited difficulties in measurement of physician participation in Medicaid at the State level (PPRC 1991, 1993; NGA, 1992). Nonetheless, the Medicaid plans submitted to HCFA by each of our study States were accepted as showing the needed participation levels.

Results on physician participation rates under alternative definitions are presented for each study State for 1989 and 1992 (and 1988 where available) in Table 16. All claims (not just those for children) were used to derive these State-level rates. As shown in Table 16, the participation of office-based physicians in Medicaid has improved over time and in all States. This pattern of improvement varies across States and by the definition used.

As these data reveal, there is substantial variation in the rates, depending upon the definition used. In 1992, whereas 74 to 86 percent of all physicians in the study States participated in Medicaid based on the first definition (having 1+ Medicaid paid claims) only 51-66 percent did so when the $3,000 cut-off is used to define participating physicians. The drop in the participation rates when the $3,000 cut-off is used is reflective of the large number of very small Medicaid practices that exist in most States (PPRC 1991; Texas Research League, 1989;AMA,1990). The PPRC reported that among the 23 States that reported data to them, 62 percent of participating physicians, on average, billed Medicaid less than $5,000 in 1989. The AMA reported that 34.7 percent limited their participation; these were defined as those physicians who either accepted only some new Medicaid patients or none at all (AMA, 1991). A recent survey completed by the American Academy of Pediatrics (1994) reports that 31.1 percent of pediatricians restrict their practice based on willingness to accept Medicaid versus private pay patients and accounting for practice capacity. This survey also found that 56.9 percent of pediatricians currently participate in EPSDT and 37.9 percent of them limit their EPSDT practice.

These patterns of limited practice volume were also seen in the Tape-to-Tape data especially in 1989. In data not shown, we found that 25 percent of physicians participating in California billed less than $350 during 1989. Physicians in Tennessee, Michigan and Georgia tended to have larger practices; 25

TABLE 16

PHYSICIAN PARTICIPATION RATES BASED ON ALTERNATIVE DEFINITIONS,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE,
1988 and 1989

Definitions	California	Georgia	Michigan	Tennessee
All participating physicians as percent of office plus hospital-based physicians				
1988	na	73%	78%	79%
1989	76	73	67	86
1992	82	84	74	86
Participating physicians with > $3000 in Medicaid payments as percent of office plus hospital-based physicians				
1989	35%	51%	42%	58%
1992	51	66	52	64
Participating physicians with > $3000 in Medicaid payments as percent of office plus hospital-based physicians (minus residents and clinical fellows)				
1989	40%	61%	51%	72%
1992	58	77	63	78

Data source: Data on practicing physicians came from the American Medical Associations Physician Masterfile as recorded in the Area Resource File; data on participating physicians came from the Tape-to-Tape data files.

percent of participating physicians in Georgia and Michigan were paid less than $1,900. while in Tennessee; one-fourth received $2,300 in Medicaid payments. By 1992, the 25th percentile related to a higher dollar volume in each State. although it was still under $3,000 in all States except Georgia.

The last set of participation rates presented in Table 16 have omitted counts of residents and clinical fellows from the counts of hospital-based physicians used in the denominator. This reflects the assumption that most medical residents and clinical fellows are not likely to independently bill for services provided to Medicaid enrollees and hence are not likely to be captured in the counts of participating physicians based on the claims data.[10] When this adjustment is made, the participation rates ranged from a low of 40 percent in California to a high of 72 percent in Tennessee in 1989. By 1992, these figures ranged from 58 percent to 78 percent, a marked improvement. Thus, not only did the proportion of all physicians participating in Medicaid increased, the intensity of the average participating physician's practice also increased; that is, fewer fall below the minimum $3,000 cut-off in 1992 compared to 1989.

Despite the large range in the participation rates there are two consistent findings shown by the data in Table 16:

- Regardless of the definition used, Tennessee and Georgia tended to have higher physician participation rates than California and Michigan across years; and
- the participation rates either remained stable or increased between 1988 and 1992 for those States with complete data.[11]

While State-level participation rates are useful in characterizing provider supply in general, they clearly do not tell the full story across smaller geographic areas and/or over time. Participation rates can be quite low, as in California, and yet, given the large supply of total physicians in that State, this rate indicates adequate availability of physician services for Medicaid enrollees. Also, as noted in a recent NGA report, participation rates may increase over time, but, if the average size of physicians' Medicaid practices decline at the same time, this would not necessarily reflect an increase in access to physician services.

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[10] We do note that a certain portion of residents may be billing Medicaid as an earlier study found that up to one-third of residents report that they moonlight for extra income sometime during their residency period (Culler and Bazzoli, 1985).

[11] In a recent study of the relative generosity of Medicaid-allowed fees, one factor affecting participation, across the study states (Holahan, 1991), indicates that Georgia and Tennessee had more generous fee schedules than California and Michigan in 1990. Tennessee had made significant increases in obstetrical and primary care fees as early as 1986 while Georgia's have been more recent.

Thus, it is necessary to look beyond this overall measure to more detailed information regarding provider supply in the Medicaid program and, ultimately, to the effect of provider supply on children's receipt of services.

2. Dentists

One of our primary objectives in the analysis of the provision of services to Medicaid-enrolled children was to look at changes in participation rates between 1989 and 1992. Average county-level dental participation rates under alternative definitions of participation and by county poverty level are presented in Tables 17 and 18. Detailed tables (Tables C-8 and C-9) are included in Appendix C.

When we considered dental participation defined as delivering dental services to any Medicaid recipients during the study years, we found a decline in participation in Michigan (13.5%), a very small decline in California (0.2%), and increases in Georgia (19.4%) and Tennessee (1.2%). In all States, the level of participation is quite low. In 1989, participation rates for all dentists ranged from 36.3 percent in Georgia to 45.6 percent in California (Table C-8-89). By 1992, participation rates had increased to 43.7 percent in Georgia.

Participation rates for general dentists serving Medicaid children, as a percentage of general practice and pedodontists, ranged from 32.5 percent in Michigan to 44.5 percent in Georgia in 1992 (Table C-8-92). The pattern of changes over time that we observed for participation in the Medicaid program was generally consistent for our other methods of defining participation, except in California. While we observed a small decrease in participation in California when we considered all dentists serving Medicaid-enrollees, we found that the participation rates for dentists serving Medicaid-enrolled children and general dentists serving Medicaid-enrolled children, increased about 10 percent between 1989 and 1992. In Georgia, we found a slight decrease in participation for general dentists serving children (0.7%).

For high poverty counties, the only State in which we observed a decrease over time was Tennessee (13%). This decrease in dentists' participation in the Medicaid program was consistent for all three methods

TABLE 17

DENTAL PARTICIPATION RATES, CALIFORNIA, GEORGIA, MICHIGAN, AND TENNESSEE, 1989 AND 1992, BY COUNTY POVERTY LEVEL

Definitions	% Change			
	California	Georgia	Michigan	Tennessee
All participating dentists as percent of all active dentists in county*				
All Counties	-0.2 %	19.4 %	-13.5 %	1.2 %
High Poverty Counties	40.6	0.0	0.0	-13.0
Medium Poverty Counties	-14.0	6.3	-2.8	2.1
Low Poverty Counties	-25.7	50.0	-8.0	-4.9
Participating dentists serving Medicaid children as percent of all active dentists in county*				
All Counties	10.8	24.6	-13.9	1.2
High Poverty Counties	21.6	0.0	0.0	-13.0
Medium Poverty Counties	-10.0	11.3	-3.5	2.4
Low Poverty Counties	-21.5	59.9	-6.5	-6.1
Participating general dentists serving Medicaid children as percent of all active GP and Pedodontists in county*				
All Counties	10.5	26.1	-13.8	-0.7
High Poverty Counties	22.0	0.0	0.0	-13.0
Medium Poverty Counties	-10.3	12.3	-3.9	0.0
Low Poverty Counties	-21.8	61.5	-6.7	-5.9

*Includes individual and other/unknown dental providers.

TABLE 18

DENTAL PARTICIPATION RATES BASED ON MINIMUM DOLLAR VOLUME, CALIFORNIA, GEORGIA, MICHIGAN, AND TENNESSEE, 1989 AND 1992, BY COUNTY POVERTY LEVEL

Definitions	% Change			
	California	Georgia	Michigan	Tennessee
All participating dentists as percent of all active dentists in county*				
All Counties	-9.1 %	22.1 %	-8.4 %	9.2 %
High Poverty Counties	56.7	0.0	0.0	-8.2
Medium Poverty Counties	-4.0	7.5	-7.5	10.5
Low Poverty Counties	-16.7	66.7	-7.5	5.5
Participating dentists serving Medicaid children as percent of all active dentists in county*				
All Counties	-9.0	23.4	-8.1	8.8
High Poverty Counties	56.3	0.0	0.0	-8.2
Medium Poverty Counties	-4.1	8.5	-6.6	10.1
Low Poverty Counties	-17.0	68.4	-5.8	5.5
Participating general dentists serving Medicaid children as percent of all active GP and Pedodontists in county*				
All Counties	38.1	37.0	-14.1	6.5
High Poverty Counties	4.4	11.1	-50.0	-8.2
Medium Poverty Counties	8.6	20.3	-7.2	7.8
Low Poverty Counties	-9.3	90.4	-1.7	4.3

** Amount paid by Medicaid in 1989 was at least $1,600 and amount paid by Medcaid in 1992 was at least $1,900.

* Includes individual and other/unknown dental providers.

of defining participation. In Georgia, we did not find any change in participation in the Medicaid program in high poverty counties since the participation rate was found to be 100 percent in both study years.[12] In California, there was a considerable increase in participation in high poverty counties. The increase in average county-level participation rates was 40.6 percent for all dentists, 21.6 percent for dentists serving Medicaid-enrolled children, and 22 percent for general dentists serving children in the Medicaid program. We found decreases in participation for across all measures of participation in low poverty counties in all study States except Georgia. In Georgia, the increase in the participation rate in low poverty counties was at least 50 percent. For general dentists serving Medicaid-enrolled children, participation rates in high poverty counties were much higher than in all counties together, except in California. These participation rates were 100 percent in Georgia and Michigan, 66.7 percent in Tennessee, but only 33.3 percent in California (Table C-8-92).

When we imposed a minimum amount paid as a criterion for defining Medicaid participation, we found participation rates ranging from 20.8 (California) to 27.6 (Georgia) percent in 1989 and 18.9 (California) to 33.7 (Georgia) percent in 1992 (Tables C-9). When we considered participation based on a minimum amount reimbursed by Medicaid, for general dentists serving Medicaid enrolled children, participation rates were relatively low compared with the participation rate for all dentists serving Medicaid enrollees in California, in 1989. By 1992, the gap in these participation rates in California had narrowed considerably; 27.4 percent of general dentists out of general practice and pedodontists served Medicaid enrolled children whereas 18.9 percent of all dentists served Medicaid program participants (Table C-9-92).

Using the dollar threshold, there was a much bigger increase in dentists' participation in Medicaid in Georgia and Tennessee, for all three methods of computing participation, but mixed evidence in the other two States (Table 18). In California, the imposition of a reimbursement threshold for defining participation implied decreases in participation rates of nearly 10 percent for all dentists and all dentists serving children across all counties in California. On the other hand, in California, we found an increase in the participation rate for general practice dentists serving children of nearly 40 percent. In Michigan, we observed the same pattern of decreases in participation rates for all three methods of computing participation. We also found a decrease in the participation rate for general dentists serving children in high poverty counties of 50 percent with the threshold for amount paid by Medicaid compared with no change in this participation rate without the threshold.

[12]Participation rates were capped at 100 percent. Rates may have exceeded 100 percent because we used ADA data from 1988 and 1991--the available data closest to our study years--to compute the denominators for these rates. In addition, there may be measurement error in the denominators due to self-reporting of "active" status.

G. MEASURES OF ACCESS AND SERVICE CONCENTRATION

1. Physicians

As noted earlier, participation rates do not convey enough information regarding the extent of physician involvement in Medicaid. Average practice volume, dispersion of enrollees across providers and differences by urban/rural location are all important aspects of provider involvement and availability in Medicaid. Counts of physicians need to be related to enrollee counts to understand adequacy of physician supply. In addition, we have stressed the importance of other providers to Medicaid enrollees; clinics, outpatient departments and other institutional providers must be included in the description of the overall provider system within Medicaid. This section reports on several measures of service access and concentration, some of which include both individual and institutional providers:

- enrollee to physician ratios within counties;
- number of "shortage" county areas; and
- Herfindahl indices within urban/rural county areas.

Some of these measures were explained in detail in a previous section on data and methodology. Here we provide a brief review of the methods used and, where applicable, of findings from earlier studies that have examined similar measures. We have focused on the availability of primary and preventive care providers for children in the measures presented.

a. Provider Availability

In this section, we present several measures related to the overall availability of physicians in the study States in 1989 and 1992, specifically, those available to Medicaid children. In some instances, the measures reflect counts of counties (i.e. shortage counties), while in other instances, we present enrollee/provider ratios. We use counts presented previously on numbers of preventive and EPSDT providers in some of the ratios presented below.

i. Overall Patterns

In Table 19, we present 1989 and 1992 data examining the availability of primary care providers and "child" providers in each study State. The percentage of counties identified as "shortage" areas in terms of the availability of these types of providers is based on population to provider ratios. For one measure,

TABLE 19

PERCENTAGE OF COUNTIES WITH EVIDENCE OF A SHORTAGE OF PRIMARY CARE PROVIDERS, ANY CHILDREN'S SERVICE PROVIDERS AND MEDICAID CHILD PROVIDERS, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989 AND 1992

	California		Georgia		Michigan		Tennessee	
	1989	1992	1989	1992	1989	1992	1989	1992
Precentage of Counties								
Primary Care Providers *	2%	3%	22%	18%	17%	19%	17%	13%
Child Providers **	21	22	61	59	60	64	52	55
Medicaid Child Providers***	0	7	14	19	0	6	6	17
Of those counties with participating physicians, percentage with:								
No pediatricians serving children	16%	19%	61%	54%	42%	34%	42%	45%
No preventive care physicians serving children	2	0	31	32	2	0	6	3

*Shortage of primary care physicians is defined as those counties with 4,000 or more persons per primary care (PED's, GP's, FP's, Internists, OB/GYN's) provider based on ARF data.

**Shortage of child providers is defined as those counties where the Child Ratio (as defined in text) is equal to or greater than 2,500 (for children age 19 and under) per child provider, based on ARF data.

***Shortage of Medicaid child providers is defined as those counties where the Child Ratio is equal to or greater than 1,500 using counts of Medicaid enrollees under 21 years of age and counts of Medicaid participating pediatricians, plus one-fourth of Medicaid participating general and family practitioners who submit at least one claim.

counties are identified as shortage areas based on a cut-off of 4,000 or more persons per primary care provider in the county. This measure follows closely the approach used by the Health Resources and Services Administration[13]; counts of all pediatricians, GPs, FPs, internists, and obstetrician/gynecologists located within the county, as recorded in the ARF data, are used along with the total population to define this ratio. Our second measure, the Child Ratio, (defined previously in the methodology section) was used to derive the percentage of counties characterized as a child provider shortage area. The cut-off for this ratio, used in most previous studies, is 2,500 children to one child provider.

The findings in Table 19 indicate that, in general, shortages increased in California and Michigan while decreasing in Georgia and Tennessee, although the proportion of shortage areas is far lower in California than in the other study States. Two to three percent of the counties in California could be characterized as having a primary care provider shortage in both analysis years compared to 13 to 22 percent of counties in the other States. In Georgia, this percentage declined from 22 percent to 18 percent and in Tennessee, from 17 percent to 13 percent by 1992.

With respect to child providers, California was also characterized by the fewest shortage areas (about 21 to 22 percent in both years). The other study States had markedly higher percentages of such counties. In Georgia, there was a slight decrease in the percentage of counties classified as shortage areas for child providers from 61 percent in 1989 to 59 percent in 1992. In contrast, both Michigan and Tennessee experienced increased in such shortage areas over time (60 to 64 percent in Michigan versus 52 to 55 percent in Tennessee, for 1989 and 1992, respectively).

The percentage of counties meeting our definition of a Medicaid child provider shortage area (i.e., 2,500 or more enrollees per Medicaid child provider) actually increased in each of the study States. In California and Michigan there were no counties meeting this definition in 1989, but in 1992, there were six to seven percent of counties. In Georgia, the percentage of counties classified as Medicaid child provider shortage areas increased from 14 to 19 percent between 1989 and 1992. In Tennessee, the increase was even greater, rising from six percent in 1989 to 17 percent in 1992.

Nonetheless, there were some improvements in terms of the proportion of counties with available pediatricians as well as providers of preventive care. In Georgia and Michigan, the percentage of counties

[13] Historically, this definition has used counts of types of physicians noted in the text and the 4,000:1 cutoff point to define manpower shortage areas. More recently, persons are identified as living in a primary care Health Professional Shortage Area (HPSA) and/or a Medically Underserved Area (MUA) if the population to practitioner ratio is 1500 to 1 or greater.

with any Medicaid participating physicians but without a participating pediatrician declined. Similarly, in California, Michigan and Tennessee, the percentage of counties with any Medicaid participating physicians but without preventive care physicians serving children also declined. (There was virtually no change in these proportions over time in Georgia.) Over virtually all measures and both analysis years, California had fewer problems with its primary care and child provider systems compared to the other study States.

We examined the urban/rural location of these shortage counties in both 1989 and 1992. These data are shown in the bottom half of Tables A-16 (1989 and 1992) in Appendix A. There were more rural counties than urban or suburban counties identified with a shortage of primary care providers in all States and both years. In Georgia, there was a significant drop from 1989 to 1992 in the number of rural counties with a primary care shortage and a decrease in the urban count as well (the urban county likely represents more enrollees affected). In Tennessee, there was improvement for both rural and urban counties whereas two additional suburban counties had evidence of a shortage by 1992. It is noteworthy that in no State was an inner urban county (as we have defined them here) flagged as a primary care shortage area in either year.

When we examine the patterns for child provider shortage areas, we again see that rural areas are more likely to be designated as shortage areas in both years with the exception of California. This is not surprising given the long term problems rural areas have had in attracting and retaining physicians. These data highlight that this problem is particularly true for primary care and other providers important to children's services. There were again improvements in Georgia and Tennessee rural areas. A somewhat surprising finding is that in all study States there were more suburban counties with evidence of shortages of child providers in 1992 than in 1989. This was particularly true in Tennessee. Perhaps increased use of managed care has led physicians to locate closer to urban areas to help assure their involvement in provider networks and/or to increase practice volume. The inner urban areas identified as having a shortage in 1989 in both California and Georgia were no longer classified as shortage areas in 1992.

ii. Enrollee-Provider Ratios

In Table 20, we present data on percentage changes in child enrollee to provider ratios between 1989 and 1992. (The full set of ratios for both analysis years can be found in Tables A-18 and A-19 in Appendix A.) In each State except Michigan, there was an increase in the number of child enrollees per participating primary care physician. There was a marked increase in this ratio for California equaling over 500 percent. In Michigan, this ratio remained constant over the study period. Tennessee also experienced a marked increase in the number of child enrollees per primary care participating physician and by 1992 its ratio of 352 was the highest of all the study States.

TABLE 20

PERCENTAGE CHANGE IN CHILD ENROLLEE TO PHYSICIAN RATIOS 1989 TO 1992
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE

	California	Georgia	Michigan	Tennessee
	% Change	% Change	% Change	% Change
Child Provider Ratios				
All participating	21%	20%	(19%)	61%
Primary care providers	557	18	0	322
Preventive care providers	(2)	16	(2)	40
EPSDT providers	42	(26)	(>1000)	52

As we consider the preventive care ratios and changes, it is apparent that Michigan's physician provider system expanded over time. In Michigan, as well as California, there was a two percent decline in the number of child enrollees per participating physician providing preventive care services over the study period. In contrast, there were increases in these ratios observed in Georgia and Tennessee of 16 and 40 percent, respectively. Michigan exhibited the lowest number of child enrollees per participating preventive care physician in 1992 with a ratio of 233 children per provider.

With respect to EPSDT providers, the picture is even more dramatic in Michigan. There was over a 1000 percent decline in the ratio of children per EPSDT participating physician in that State; by 1992, this ratio was 377 down from 11,518 in 1989. In contrast, the ratios observed in the other States all exceeded 1,000 children per physician provider of EPSDT services and these increased in California and Tennessee.

iii. Urban/Rural Patterns

We also examined the patterns of enrollee to provider ratios across urban and rural areas in the study States. An earlier study of Cook County Illinois developed child to provider ratios for zip code areas within an inner-city environment (Fossett *et al.*, 1992); the authors excluded from their counts physicians on the staffs of community health centers and other nonprofit clinics[14] and grouped zip codes by central business district, areas containing hospitals that are major centers of pediatric care, and primarily residential areas. They found ratios of AFDC children (the authors did not have actual Medicaid enrollee counts) to participating child health providers in 1986 ranging from approximately 54 in the central business district to over 4,500 in the poorer residential zip codes (those with more than 50 percent AFDC population). The average (across zip codes) ratio of AFDC children to participating child health provider in inner-city areas was almost twice the AAP's standard (2,500 children per child provider) and more than 25 times larger than that in the most prosperous residential areas (Fossett, *et al.*, 1992). In another study, Fossett *et al.* (1990) found fewer than a dozen obstetrician/gynecologists were the only source of private, office-based obstetric care for over 136,000 AFDC recipients in the poorest areas of Chicago while over 250 office-based obstetrician/gynecologists served approximately 33,000 in the more prosperous areas of the city.

In Tables A-20 (1989 and 1992) in Appendix A, we present the 1989 enrollee to provider ratios for primary and preventive care providers for children under age 21 years by urban and rural status of the county. The enrollee to provider ratios were higher for preventive care versus primary care providers in both

[14] To the extent these types of providers have their services billed by these entities and hence, do not bill under their own ID in the Medicaid claims files, they are also omitted from our counts of individual physician providers. This earlier study is similar to ours in that those hospital-based physicians who are fully employed by the hospital and do not bill for their own services are not counted as participating providers.

urban and rural areas in both years. We would expect this overall, given our previous analysis. Yet, there is no discernable pattern across more versus less urbanized areas. There is some tendency for the primary care ratios to be higher in the urban (than suburban or rural) areas in Georgia and California in 1989 although the suburban values were also quite high in these States. In 1992 (see A-20-92), there were higher enrollee per participating provider ratios for the preventive care measure in inner urban areas (than all others) in Tennessee and higher than rural areas in California. The availability of preventive care providers improved in inner urban areas relative to the suburban and rural areas.

When we classify only those physicians paid more than $3,000 (see numbers in parentheses in Tables A-20) as Medicaid participating physicians, the enrollee to provider ratios increased significantly in urban areas in California and approached the values reported by Fossett *et al.* in their study of the Chicago area. By 1992, these values for urban areas in California had declined but were still higher than values for the suburban and rural areas. Again, Georgia's ratios were high in the urban counties, as well as in suburban counties. This pattern remained in 1992. We hope to better identify inner urban areas by using zip code and census poverty level in our multivariate analysis.

Even though participation rates and enrollee to physician ratios are lower in some urban areas, other sites of care (e.g., clinics, outpatient departments) may make up for the lack of access to physicians for the Medicaid population overall. This is why it is important to consider the entire spectrum of providers. There may be additional access issues for rural enrollees. Here, it is more of a distance and transportation issue--that is there are longer distances that enrollees are likely to have to travel to see either a physician or other provider. Hence, providers may admit a child to stabilize a medical condition and/or keep the child in the hospital for longer periods to assure themselves that the child can return home safely. Higher use of hospital services among children in rural areas may therefore be involved in what we are seeing in this particular study and may be indicative of the unique access issues faced in rural areas. This type of analysis will be included in the third year multivariate analysis.

b. Service Concentration

As more knowledge is gained regarding physician participation in Medicaid, it is clear that participation rates alone do not provide sufficient information to gauge the adequacy of physician supply of Medicaid services. If, for example, there are a large number of small practices and relatively few, very large ones, access to health care may be problematic for a large segment of the Medicaid population depending on the geographic distribution of providers and enrollees even when overall participation rates are high. Thus, we need to examine the service volume for participating physicians to better gauge the

nature of access to physician services for Medicaid children. In Table 21, we present our findings on the summary measure of service concentration -- the Herfindahl Index (HI) -- for office-based by type of service and urban/rural location. (These detailed results are shown in Tables A-21 and A-22 in Appendix A.)

i. Overall Patterns

Herfindahl Indices, or measures of the concentration of Medicaid services to children, are provided for office-based physicians in Table 21. We computed Herfindahl Indices for all services to children, preventive care services and EPSDT services, as well as for office-based physicians practicing in urban, suburban and rural counties.

For all services to children, the Herfindahl Indices indicate that services were fairly evenly distributed across physicians in 1989. The HI varied from .13 in California and Michigan to .34 in Georgia. As in 1989, there no evidence of marked concentration in 1992, and the HI for all children's services actually dropped in all States except Tennessee. The HI for all children's services in 1992 ranged from a low of .11 in California to a high of .29 in both Georgia and Tennessee. It is difficult to interpret the magnitude of these indices because this type of measure (to our knowledge) has not been presented in the literature for physicians. Other studies have reported HIs for hospital market areas, ranging from .01 to 1.00 for markets that captured 90 percent of total hospital admissions and from .03 to 1.00 for markets that captured 75 percent of total hospital admissions (Phibbs and Robinson, 1993); the averages across hospital markets (.45 and .66) was higher than what we found for Medicaid children's services.

The HI measure is traditionally used to measure market concentration as it relates to the pricing behavior of firms. We have used it here to provide insight into the concentration of service provision as an indicator of access problems for enrollees. Given that fewer people require hospital services than physician services, that there are a greater number of physicians than hospitals in a given geographic area, and that the geographic areas (counties) used in our study are generally larger than the areas used in the hospital market study, it is not surprising that the measures of concentration reported here are lower. The reason for many of the differences in physician and hospital markets may be the differing nature of the production processes for physician and hospital services. To the extent there are greater economies scale for hospital services, the size of the efficient producer will be larger and, hence, service provision will be more highly concentrated.

Relatively small numbers of large Medicaid office-based providers resulted in low HI values. This most likely reflects the large numbers of small physician practices in which providers may not see enrollees on an ongoing basis. The average county measure was lower in California and Michigan. We saw earlier

TABLE 21

HERFINDAHL INDICES, FOR ALL PARTICIPATING PHYSICIANS BY SERVICE TYPE AND URBAN/RURAL LOCATION, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989 AND 1992

	California		Georgia		Michigan		Tennessee	
	1989	1992	1989	1992	1989	1992	1989	1992
Herfindahl Index-Physicians								
All services	.13	.11	.34	.29	.13	.12	.28	.29
Preventive	.24	.25	.70	.66	.27	.27	.57	.53
EPSDT	.27	.27	.79	.76	.78	.45	.72	.66
Preventive Care								
Urban	.12	.17	.19	.59	.16	.21	.48	.51
Inner Urban	.03	.07	.64	.37	.01	.17	*	.13
Suburban	.30	.33	.71	.62	.22	.21	.58	.75
Rural	.54	.67	.76	.77	.38	.34	.62	.83

* No counties met the definition of "inner urban" in Tennesse in 1989.

that these States have relatively greater supplies of physicians, and in California, more physicians with very small Medicaid volume. The greater supply apparently resulted in a "spreading" of Medicaid enrollees across a larger number of providers and hence, a larger number of small Medicaid practices in these two States.

The concentration measures for office-based physicians shown in Table 21 changed as we examined preventive care and EPSDT services for both 1989 and 1992. In all study States, service provision became much more concentrated with the more narrowly defined services. This was more true in Georgia and Tennessee where the HI increased from .29 for all services to children to .66 for preventive care in Georgia and .76 for EPSDT specifically, in 1992. In Tennessee, these HI values were .53 and .66 respectively. It is important to note that the concentration of these services was either stable or declined in all States over the study period. The most marked change is, again, in Michigan where the HI for EPSDT services (all providers) declined dramatically from .78 to .45.

ii. Urban/Rural Patterns

Table 21 shows the measures of concentration for office-based physicians who provided preventive care services for urban/rural areas within each study State. In Table A-22 (1989 and 1992) in Appendix A, the HIs presented separately for all providers (individual and institutional) and then just for individual physicians.

While the patterns are interesting, they do not confirm our expectations regarding the concentration of Medicaid services in inner urban areas with the one exception of the measures presented for physicians in Georgia in 1989. There, the concentration of preventive care services was .64 for the inner urban counties as opposed to .19 for urban counties overall. In California and Michigan in 1989, the HI was markedly lower in the inner urban county areas. These values were below .10 in 1989, indicating very low concentration. This may reflect the greater per capita supply of physicians in urban areas. It also may indicate there was access to a geographically dispersed provider supply or that there were many practitioners with small practices, who do not necessarily see Medicaid patients on an ongoing basis. We also note, given that we had to define our areas at the county level, that inner urban areas can not really be isolated and that some of the true inner urban areas may be subsumed in the suburban category.

The patterns for 1992 are similar in California, although there was increased concentration of preventive care overall. Still, the inner urban area shows very little concentration; the rural area exhibits the highest concentration of preventive care services with an HI of .67. In Georgia, the concentration of preventive care services decreased overall but increased in some urban areas while decreasing markedly in the inner urban counties. The level of the concentration of these services was quite high in the urban,

suburban and rural counties in this State in 1992. In Michigan there were increases in the concentration of preventive care services among office-based physicians in the inner urban and urban counties but especially in the former. Finally, in Tennessee, there was an increase in the concentration of service provision among office-based physicians in urban counties as well as in the suburban and rural areas of the State.

2. Dentists

To assess changes in service access and concentration for dental providers, we also computed enrollee to dental provider ratios and Herfindahl indices (for dentists), by county type (degree of urbanization). The enrollee to provider ratios were computed for the service categories that we have already defined.

a. Provider Availability

In Tables 22-25, we present changes in the enrollee-dental provider ratios for all States, by type of provider and category of service. In all study States except Michigan, the average county-level enrollee to dentist ratio increased more than 40 percent, across all county types for those dentists providing diagnostic, preventive, or therapeutic services. In Michigan, however, there was a relatively small increase in the overall enrollee-dentist ratio across all counties, for this service category (14.6%; Table 24). Michigan was also the only State in which we observed a decrease in the enrollee-dentist ratio for this service category--in inner urban counties, we found a 34.6 percentage decrease compared with increases ranging from 9.2 percent (suburban) to 25.3 (urban) for the other three county types based on degree of urbanization. Tables C-10 in Appendix C present detailed enrollee-provider information for 1989 and 1992. For individual dentists providing diagnostic, preventive, or therapeutic services, the enrollee-dentist ratio was over 400, and nearly 500 in California and Georgia in 1989 (Table C-10-89). In 1992, these ratios had increased to over 800 in California and nearly 800 in Georgia (Table C-10-92).

While the enrollee-dentist ratios are quite high for these general dentistry services, the ratios are considerably higher for orthodontic services. Because there are so few dentists providing orthodontic services to Medicaid-enrolled children, we found the enrollee-dentist ratios to be as high as 46,367 (Michigan) in 1992. In 1992, Tennessee had the lowest enrollee-dentist ratio for this category of service with 2,568 enrollees per dentist. As we expected, we found relatively high rates of increase for enrollee-dentist ratios for orthodontic services. In Georgia, there was a 393.2 percentage increase in the enrollee-dentist ratio (Table 23) and in Michigan a 93.3 percentage increase (Table 24).

TABLE 22

CHILD ENROLLEES PER PROVIDER OF CHILDREN'S DENTAL SERVICES, BY TYPE OF PROVIDER: PERCENTAGE CHANGE IN INNER URBAN, URBAN, SUBURABAN, AND RURAL COUNTY AREAS, CALIFORNIA

Dental Provider Type	All	Inner Urban	Urban	Suburban	Rural
Children's Dental Care	% Growth	% Growth	% Growth	% Growth	% Growth
All Providers	71.9 %	42.8 %	113.0 %	59.7 %	86.0 %
Providers of Diagnostic, Preventive, or Therapeutic Dental Services	71.5	42.8	113.3	58.4	84.8
Individual Dentists	71.3	42.0	112.6	59.2	83.2
Institutional Providers	0.0	0.0	0.0	0.0	0.0
Other/Unknown*	77.3	33.3	137.0	-33.3	98.6
Providers of Emergency Dental Services	47.1	64.9	64.8	25.6	19.3
Individual Dentists	47.8	65.8	67.2	26.8	14.2
Institutional Providers	0.0	0.0	0.0	0.0	0.0
Other/Unknown*	59.1	27.9	40.8	39.3	113.6
Providers of Orthodontic Services	45.2	17.6	60.9	0.0	23.3
Individual Dentists	31.4	-5.0	60.9	63.7	23.3
Institutional Providers	0.0	0.0	0.0	0.0	0.0
Other/Unknown*	-43.1	-50.2	0.0	0.0	0.0
Providers of Other Services	-86.3	-85.2	-53.9	-59.3	0.0
Individual Dentists	-53.3	142.2	144.1	63.5	0.0
Institutional Providers	0.0	0.0	0.0	0.0	0.0
Other/Unknown*	41.3	112.0	0.0	0.0	0.0

*Identified on claims as individual providers but not identified on provider file.

TABLE 23

CHILD ENROLLEES PER PROVIDER OF CHILDREN'S DENTAL SERVICES, BY TYPE OF PROVIDER: PERCENTAGE CHANGE IN INNER URBAN, URBAN, SUBURABAN, AND RURAL COUNTY AREAS, GEORGIA

Dental Provider Type	All	Inner Urban	Urban	Suburban	Rural
Children's Dental Care	% Growth	% Growth	% Growth	% Growth	% Growth
All Providers	64.9 %	104.2 %	132.2 %	52.1 %	45.1 %
Providers of Diagnostic, Preventive, or Therapeutic Dental Services	64.9	104.2	132.2	52.3	45.1
Individual Dentists	64.9	104.2	132.2	52.3	45.1
Institutional Providers	0.0	0.0	0.0	0.0	0.0
Other/Unknown*	0.0	0.0	0.0	0.0	0.0
Providers of Emergency Dental Services	87.9	97.4	126.9	53.2	87.5
Individual Dentists	87.9	97.4	126.9	53.2	87.5
Institutional Providers	0.0	0.0	0.0	0.0	0.0
Other/Unknown*	0.0	0.0	0.0	0.0	0.0
Providers of Orthodontic Services	393.2	0.0	0.0	0.0	-12.3
Individual Dentists	393.2	0.0	0.0	0.0	-12.3
Institutional Providers	0.0	0.0	0.0	0.0	0.0
Other/Unknown*	0.0	0.0	0.0	0.0	0.0
Providers of Other Services	0.0	0.0	0.0	0.0	0.0
Individual Dentists	0.0	0.0	0.0	0.0	0.0
Institutional Providers	0.0	0.0	0.0	0.0	0.0
Other/Unknown*	0.0	0.0	0.0	0.0	0.0

*Identified on claims as individual providers but not identified on provider file

TABLE 24

CHILD ENROLLEES PER PROVIDER OF CHILDREN'S DENTAL SERVICES, BY TYPE OF PROVIDER: PERCENTAGE CHANGE IN INNER URBAN, URBAN, SUBURABAN, AND RURAL COUNTY AREAS, MICHIGAN

Dental Provider Type	All	Inner Urban	Urban	Suburban	Rural
Children's Dental Care	**% Growth**	**% Growth**	**% Growth**	**% Growth**	**% Growth**
All Providers	14.4 %	-36.2 %	24.5 %	9.2 %	17.8 %
Providers of Diagnostic, Preventive, or Therapeutic Dental Services	13.2	-32.4	22.3	8.6	15.8
Individual Dentists	14.6	-34.6	25.3	9.2	18.1
Institutional Providers	-47.174	64.5	-58.5	0.0	247.2
Other/Unknown*	196.8	256.4	67.3	0.0	7.7
Providers of Emergency Dental Services	18.9	-36.5	16.0	57.7	5.1
Individual Dentists	13.8	-38.3	21.5	53.5	-3.2
Institutional Providers	-92.671	0.0	-64.5	0.0	0.0
Other/Unknown*	356.6	283.9	98.8	0.0	21.1
Providers of Orthodontic Services	93.3	28.0	0.8	0.0	14.9
Individual Dentists	93.3	28.0	0.8	0.0	14.9
Institutional Providers	0.0	0.0	0.0	0.0	0.0
Other/Unknown*	0.0	0.0	0.0	0.0	0.0
Providers of Other Services	-73.6	0.0	-58.4	0.0	0.0
Individual Dentists	-0.6	0.0	35.8	0.0	0.0
Institutional Providers	0.0	0.0	0.0	0.0	0.0
Other/Unknown*	0.0	0.0	0.0	0.0	0.0

*Identified on claims as individual providers but not identified on provider file

TABLE 25

CHILD ENROLLEES PER PROVIDER OF CHILDREN'S DENTAL SERVICES, BY TYPE OF PROVIDER: PERCENTAGE CHANGE IN INNER URBAN, URBAN, SUBURABAN, AND RURAL COUNTY AREAS, TENNESSEE

Dental Provider Type	All	Inner Urban	Urban	Suburban	Rural
Children's Dental Care	% Growth	% Growth	% Growth	% Growth	% Growth
All Providers	49.9 %	0.0 %	88.1 %	46.9 %	30.6 %
Providers of Diagnostic, Preventive, or Therapeutic Dental Services	68.7	0.0	47.4	70.9	75.6
Individual Dentists	52.7	0.0	91.1	47.3	35.2
Institutional Providers	57.5025	0.0	15.1	99.7	53.7
Other/Unknown*	-90.1	0.0	0.0	0.0	0.0
Providers of Emergency Dental Services	39.9	0.0	21.8	74.7	20.4
Individual Dentists	39.4	0.0	31.1	89.0	11.2
Institutional Providers	1.15299	0.0	-35.8	50.4	-7.5
Other/Unknown*	-93.4	0.0	0.0	0.0	0.0
Providers of Orthodontic Services	48.2	0.0	37.2	51.1	29.4
Individual Dentists	48.7	0.0	36.0	51.0	29.4
Institutional Providers	33.7964	0.0	0.0	55.0	0.0
Other/Unknown*	0.0	0.0	0.0	0.0	0.0
Providers of Other Services	45.3	0.0	20.6	22.2	14.1
Individual Dentists	42.1	0.0	20.6	10.3	14.1
Institutional Providers	135.7	0.0	0.0	135.7	0.0
Other/Unknown*	0.0	0.0	0.0	0.0	0.0

*Identified on claims as individual providers but not identified on provider file

With respect to degree of urbanization, service access as measured by the enrollee-dentist ratio was least in urban counties in all States except Michigan. In 1992, the enrollee-dentist ratio was highest in urban counties for California (942), Georgia (945), and Tennessee (753); however, this ratio was highest in suburban counties in Michigan (643). The lowest enrollee-dentist ratios were found in the inner urban counties for all States, except in Tennessee where the ratio was the same for inner urban and rural counties.

b. Service Concentration

Tables 26 and 27 present Herfindahl indices which we computed for all dental providers, and for individual dentists for 1989 and 1992. In 1989, the HI for dentists ranged from .27 in California to .54 in Georgia (Table 26). Service concentration was stable in all States except California, between 1989 and 1992 Tables 26 and 27). In California the HI declined to .19 suggesting that there were more, relatively small practices in 1992 than in 1989. Nevertheless, these HIs indicate that services provided by dentists to Medicaid-enrolled children were more concentrated than office-based physician services.

As expected, services were much more concentrated in rural areas and relatively less concentrated in the urban counties. The HIs in rural areas ranged from .43 to .64 in 1989 (Table 26) and .27 to .66 in 1992 (Table 27). In rural counties, on average, service concentration decreased significantly in rural counties in California, increased slightly in Tennessee, and remained about the same in Georgia and Michigan. On the other hand, in inner urban counties, service concentration increased from .06 to .15 in California and from .10 to .16 in Georgia. There was a small increase in service concentration in Michigan where the HI was .01 in 1989 and .04 in 1992; however, these measures indicated that services were quite dispersed in these areas in Michigan.

TABLE 26

MEASURES OF CONCENTRATION OF CHILDREN'S DENTAL SERVICE PROVISION IN URBAN, INNER URBAN SUBURBAN, AND RURAL COUNTIES, 1989

	All				Urban				Inner Urban				Suburban				Rural			
	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN
Locality-Level Herfindahl Indices (all providers)	0 27	0 54	0 34	0 46	0 16	0 43	0 15	0 34	0 06	0 10	0 01	--	0 37	0 46	0 32	0 46	0 55	0 64	0 45	0 52
Locality-Level Herfindahl Indices (dentists)	0 27	0 54	0 32	0 39	0 16	0 43	0 13	0 30	0 06	0 10	0 01	--	0 37	0 58	0 31	0 37	0 55	0 64	0 43	0 45
Other Concentration Measures:																				
Percent Providing Only Minimum Dollar Volume	62 6%	35 9%	47 7%	55 8%	63 8%	36 4%	51 4%	42 8%	62 1%	42 6%	44 8%	0 0%	56 0%	25 3%	40 3%	34 0%	69 6%	43 9%	68 8%	100 0%^
Average Caseload Per Provider	77 2	115 1	83 7	83 7	77.3	104 7	83 2	87 8	76 1	65 7	91 9	0 0	89 0	139 2	100 2	86 3	55 1	124 0	81 0	65 6

TABLE 27

MEASURES OF CONCENTRATION OF CHILDREN'S DENTAL SERVICE PROVISION IN URBAN, INNER URBAN SUBURBAN, AND RURAL COUNTIES, 1992

	All				Urban				Inner Urban				Suburban				Rural			
	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN
Locality-Level Herfindahl Indices (all providers)	0 28	0 53	0 37	0 48	0 17	0 44	0 17	0 33	0 15	0 16	0 14	0 05	0.38	0 46	0 34	0 48	0 72	0 66	0 50	0 59
Locality-Level Herfindahl Indices (dentists)	0 19	0 53	0 33	0 39	0 15	0 44	0 12	0 26	0 15	0 16	0 04	0 05	0 24	0 46	0 33	0.40	0 27	0 66	0 44	0 50
Other Concentration Measures (all providers)																				
Percent Providing Only Minimum Dollar Volume	42 1%	25 5%	49 2%	44 8%	55 6%	28 5%	49 6%	36 9%	54 9%	32 4%	50 4%	36 5%	55 2%	19 7%	46 1%	27 8%	34 6%	24 6%	56 1%	100 0%*
Average Caseload Per Provider	106 5	185 2	99 8	130 0	113 8	172.7	102 3	135 7	107 2	134 4	80.9	211 8	115 2	226 8	109 9	135 0	105 1	208 1	96 5	128 2

H. SUMMARY AND DISCUSSION

The foregoing analysis of the nature and extent of provider supply for Medicaid children's services overall and preventive care, in particular, has added significantly to our understanding of the role of physicians and other providers in caring for children under 21. While the States each exhibit their own patterns, we identified several major patterns, which are summarized here. Those related to the overall supply of physicians include:

Overall, there was evidence of significant growth in the numbers of non-dental participating providers as well as their average practice volume. State specific-patterns included:

- Participation of all physicians in Medicaid in the study States remained stable or increased 1989-92.
- Of the study States, Tennessee tended to have the highest physician participation rates while California tended to have the lowest across the alternative definitions used in the analysis.

Many of the overall patterns seen in 1989 were repeated in 1992 for non-dental providers:

- The vast majority of all physicians participating in Medicaid provided at least some services to children in each of the study States in 1989 and 1992.
- Less than 25-30 percent of participating physicians also provided some type of preventive care services to children in 1989 and 1992.
- Less than 10 percent of physicians providing services to children in Medicaid provided preventive care services to them through the EPSDT program in either year, with the exception of Michigan in 1992.

Additional findings relating to physician participation and involvement in the provision of preventive care services found in both years include:

- Pediatricians comprise a larger percentage of total providers of *preventive* care services than they did of providers of *all* services to children,
- Pediatricians had larger preventive care practices (all preventive care and EPSDT only), on average, than other primary care providers.
- Non-primary care physicians were important to the provision of preventive care services despite their smaller average preventive care practice due to their relatively large numbers, especially in California.

- There were "shadow" program physician providers in all States (in Georgia it cannot be fully measured) in both years.
- In Michigan, the number of physicians providing services only in the shadow preventive care program declined significantly by 1992.
- A greater percentage of other primary care physicians (versus pediatricians) provided preventive care services to Medicaid children only in the shadow program.

Those findings related to the role of institutional and other providers of children services that applied in each year include:

- Clinic providers of children's services outnumbered the outpatient departments (OPDs) except in California, but served fewer children and received fewer dollars on average.
- Clinics primarily provided preventive care services in Georgia but not in other States.
- OPDs also provided preventive care in all States but it was a smaller percentage of their total services to children.
- Clinics were also important providers in the "shadow" preventive care program in California, Michigan and Tennessee but only in California and Tennessee in 1992.
- There was a sizeable number of OPDs involved in the "shadow" preventive care program in each State, especially California.

Findings related to place of service include:

- Pediatricians were slightly less likely to provide preventive care in office settings in California and Michigan by 1992 but much more likely in Georgia and Tennessee.
- Pediatricians were more likely to provide preventive care in offices than all children's services in 1989 in California and Michigan but not in Georgia or Tennessee; by 1992 this trend held in all States.
- Other primary care physicians were also more likely to serve children in non-office settings even for preventive care in California and Tennessee in both study years, but the percentage of non-primary care physicians whose dominant place was the office for preventive care increased between 1989 and 1992 in California and Georgia.
- Other primary care physicians were also more likely to provide preventive care in office settings and this pattern was strengthened in Georgia and Tennessee as the percentage where the dominant place of service being the office setting increased.

With respect to total dollars paid by place of service:

- Almost half to two-thirds of the Medicaid dollars for all children's services were paid to providers predominantly in the clinic or OPD setting in 1989; this percentage increased by 1992 in all States except Tennessee.

- Almost all dollars paid for basic preventive care services were paid to providers in clinics and OPDs in Georgia and California in 1989 ; this percentage increased in Michigan and decreased in Tennessee by 1992.

- These patterns appear to be driven in part by the tendency of other (non-primary) physicians to practice in clinic/OPD settings when serving Medicaid children.

While the patterns are consistent with much earlier work on the site of care for Medicaid enrollees, it indicates there is potential for improving the efficiency of Medicaid programs. Service provision in the outpatient department and/or emergency room can be more costly.

Those findings related to the overall picture of provider availability and supply within each State include:

- Georgia had a higher percentage of counties with primary care or (all) child provider shortages in 1989 but by 1992 this applied to Michigan.

- While only Georgia and Tennessee had counties that were identified has "shortage" areas for Medicaid children in 1989, all States had counties meeting this definition by 1992.

- While all States had at least one county without a primary care provider serving Medicaid children in 1989 only Georgia and Tennessee did by 1992.

- Measures of service concentration were low for all children services but were greater for preventive care services and even greater for EPSDT services; California's measures were still quite low even for EPSDT services.

These findings indicate that while overall participation rates increased there were still issues of adequacy of supply relative to child enrollees in 1992. There were also issues with the geographic distribution of physicians as some counties still exhibited shortages while others did not.

With respect to dental providers, however, there was a clear pattern of decline over the 1989 to 1992 time period, with the exception of Tennessee. State-specific patterns include:

- In all States except Tennessee, the total number of non-institutional dental providers and the total number of dentists serving Medicaid enrollees declined between 1989 and 1992.

- The number of dentists providing services to Medicaid-enrolled children declined in California and declined slightly in Michigan between 1989 and 1992. During this period there were small increases in Georgia and Tennessee.

- Most dentists providing services to Medicaid-enrolled children provided diagnostic, preventive, or therapeutic services in 1989 and 1992.

- There are very few dentists providing orthodontic services to Medicaid-enrolled children.

- There was an increase in average practice size for dental providers who delivered services to Medicaid-enrolled children in all four States. Because we observed this trend along with increases in the number of dentists in some states and decreases in others, we could not conclude that changes in practice size were primarily driven by changes in dental provider participation.

- In general, overall Medicaid participation rates for dentists were very low, ranging from 36.3 percent in Georgia to 45.6 percent in California in 1989, and in 1992 from 34.0 percent (Michigan) to 45.5 percent (Georgia).

- Participation rates for general dentists serving children increased in California and Georgia but decreased in Michigan. In Tennessee, there was a very small decrease in this participation rate.

- With a minimum dollar volume as a criterion for defining dental participation, we found relatively large increases in dentists' Medicaid participation in Georgia and Tennessee but both increases and decreases in participation in California and Michigan, depending on the method for computing participation.

- For individual dentists providing diagnostic, preventive, or therapeutic services, the enrollee to dentist ratio was over 400 in all states in 1989. In 1992 these ratios had increased over 60 percent, except in Michigan which had an increase of only 14.6 percent.

- Service concentration, as measured by the Herfindahl index for dentists, was relatively stable in all States except California, between 1989 and 1992. In California, the index declined between 1989 and 1992.

These findings suggest that, despite increases in reimbursement, there were some marginal increases in access to dental services for children in the Medicaid program. While we found large increases in Medicaid program participation for general dentists serving children in California and Georgia, participation rates were still quite low in 1992.

Taken together, these findings provide a significant amount of new information regarding the nature and extent of provider supply in Medicaid for children's services. The findings identify several issues for the States in terms of the level of involvement of physicians in preventive care services, the use of inpatient and emergency room settings for a large portion of children services (even including preventive care), geographic areas in which there appear to be marked shortages of providers necessary for the care of Medicaid children, and the relatively low participation of dental providers in the Medicaid program despite efforts to induce greater provider supply by increasing reimbursement for dental services.

Ultimately, we will need to relate the information on provider supply and availability to the receipt of services by children and do so in a multivariate context. Only then will we see the effects we are ultimately interested in--i.e., those related to the receipt of ambulatory, inpatient and preventive care services

by children enrolled in Medicaid in the four States. Finally, we will see how these patterns have changed by 1992 as the provider system changed in response to OBRA89.

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APPENDIX A

Detailed Tables for Non-Dental Providers, 1989/1992

SELECTED DATA ON ALL MEDICAID PARTICIPATING PHYSICIANS AND MEDICAID PHYSICIANS SERVING CHILDREN
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

	California	Georgia	Michigan	Tennessee
All Medicaid Participating Physicians				
Number	47,638	7,391	12,499	7,583
Percent distribution by degree				
Medical doctors (MDs)	99%	99%	82%	99%
Doctors of osteopathy (DOs)	1%	2%	18%	1%
Medicaid Physicians Servicing Children				
Number	31,045	5,716	11,012	6,162
Percent of all Medicaid participating providers	65%	77%	88%	81%
Percent of child physician providers who are:				
Preventive care providers				
excluding providers of prenatal/contraceptive services	21%	9%	30%	21%
including providers of prenatal/contraceptive services	27%	22%	37%	33%
EPSDT physician providers who are:	7%	2%	<1%	3%
Full and partial screen providers	7%	2%	<1%	3%
Partial Screen (only) providers	<1%	<1%	---	<1%

SELECTED DATA ON ALL MEDICAID PARTICIPATING PHYSICIANS AND MEDICAID PHYSICIANS SERVING CHILDREN
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

	California	Georgia	Michigan	Tennessee
All Medicaid Participating Physicians				
Number	55,251	9,495	14,846	8,394
Percent distribution by degree				
Medical doctors (MDs)	99%	98%	82%	98%
Doctors of osteopathy (DOs)	1%	2%	18%	2%
Medicaid Physicians Servicing Children				
Number	36,453	8,161	12,930	7,369
Percent of all Medicaid participating providers	66%	86%	87%	88%
Percent of child providers who are:				
Preventive care providers				
excluding providers of prenatal/contraceptive services	20%	9%	29%	23%
including providers of prenatal/contraceptive services	27%	24%	38%	32%
EPSDT physician providers who are:	6%	3%	20%	4%
Full and partial screen providers	6%	3%	20%	4%
Partial Screens (only) providers	< 1%	< 1%	---	< 1%

INDIVIDUAL PROVIDERS OF ANY SERVICES FOR CHILDREN BY TYPE, PERCENT DISTRIBUTION, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

Individual Providers	California			Georgia			Michigan			Tennessee		
	Percent (n=35,970)	Mean $ Paid	Mean # of Recipients Served	Percent (N=6,274)	Mean $ Paid	Mean # of Recipients Served	Percent (n=13,108)	Mean $ Paid	Mean # of Recipients Served	Percent (n=6,584)	Mean $ Paid	Mean # of Recipients Served
Pediatrician	7%	$23,076	202	8%	$33,225	276	5%	$20,705	329	8%	$28,325	279
Other Primary	25%											
General Practitioner	8%	$ 8,716	79	34%	$11,890	74	44%	$ 5,266	101	28%	$ 9,081	74
Family Practitioner	6%	7,860	105	7%	9,593	108	25%	5,747	132	7%	8,885	105
Internist	5%	7,427	99	9%	9,910	115	4%	6,345	126	7%	8,202	106
Ob/Gyn	5%	1,937	29	11%	1,890	22	10%	1,213	29	8%	1,684	23
Other Physician	54%	17,814	57	7%	32,416	67	5%	10,441	73	6%	19,772	67
Other Individual	14%	$ 4,021	53	48%	$ 5,911	54	34%	$ 3,857	82	58%	$ 5,628	77
		$ 3,406	34	9%	$ 5,743	41	16%	$ 1,790	34	6%	$ 5,886	76

ALL INDIVIDUAL PROVIDERS OF ANY SERVICES FOR CHILDREN BY TYPE,
PERCENT DISTRIBUTION, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

	California			Georgia			Michigan			Tennessee		
dividual Providers	Percent (n = 42,327)	Mean $ Paid	Mean # of Recipients Served	Percent (n = 9,129)	Mean $ Paid	Mean # of Recipients Served	Percent (n = 15,213)	Mean $ Paid	Mean # of Recipients Served	Percent (n = 7,929)	Mean $ Paid	Mean # of Recipients Served
ediatrician	7%	$28,922	239	8%	$67,207	515	6%	29,418	350	8%	$49,256	422
ther Primary	23%	$ 12,739	111	38%	$16,092	140	44%	$ 7,325	119	28%	$ 14,289	109
General Practitioner	7%	12,712	164	11%	13,331	238	24%	8,252	163	6%	14,434	180
Family Practitioner	6%	10,643	137	9%	14,858	182	4%	8,710	133	7%	14,739	161
Internist	5%	3,384	51	10%	2,689	38	10%	1,466	28	8%	2,177	32
Ob/Gyn	5%	23,769	71	7%	40,534	90	5%	13,423	79	6%	29,990	79
ther Physician	56%	$ 6,643	93	44%	$ 8,821	90	35%	$ 4,452	89	57%	$ 8,639	102
ther Individual	14%	$ 4,865	51	11%	$ 13,490	66	15%	$ 2,251	37	7%	$ 9,762	127

INSTITUTIONAL PROVIDERS OF ANY SERVICES FOR CHILDREN BY TYPE, COUNT, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

	California			Georgia			Michigan			Tennessee		
Institutional Providers	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served
Outpatient Department	2,547	$35,140	317	161	$184,786	968	181	$225,354	1,515	138	$197,613	1,101
Clinic	1,445	28,753	154	261	35,218	480	705	23,654	295	754	24,982	200
Other Providers*	5,003**	14,018	88	952	9,345	86	968	11,864	138	584	11,532	81

* Other providers are predominantly labs, home health agencies, etc.

** Includes 43 other/institutional unknown which are most likely school clinics.

INSTITUTIONAL PROVIDERS OF ANY SERVICES FOR CHILDREN BY TYPE, COUNT, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

	California			Georgia			Michigan			Tennessee		
Institutional Providers	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served
Outpatient Department	3,614	$48,599	410	164	$411,960	1,928	192	$379,513	1,907	148	$429,117	1,706
Clinic	2,612*	43,982	233	458	55,479	598	1,060**	43,855	239	925	40,482	296
Other Providers***	6,465	15,721	120	1,130	16,399	114	1,210	21,934	153	756	35,361	114

* Includes 46 school-based clinics. Their mean dollars of services provided to children equaled $8,660.

** Includes 6 school districts (unknown number of schools). Their mean dollar of services provided to children equaled $1.3 million.

*** Other providers are largely labs, home health agencies, etc.

INDIVIDUAL PROVIDERS OF BASIC PREVENTIVE CARE FOR CHILDREN BY TYPE, PERCENT DISTRIBUTION, MEAN DOLLARS PAID FOR ALL SERVICES AND FOR PREVENTIVE CARE SERVICES, CALIFORNIA, GEORGIA, MICHIGAN, AND TENNESSEE, 1989

Individual Providers	California			Georgia			Michigan			Tennessee		
	Percent (n = 7,403)	Mean $ Paid All Services	Mean $ Paid Preventive Care	Percent (n = 522)	Mean $ Paid All Services	Mean $ Paid Preventive Care	Percent (n = 3,354)	Mean $ Paid All Services	Mean $ Paid Preventive Care	Percent (n = 1,381)	Mean $ Paid All Services	Mean $ Paid Preventive Care
Pediatrician	17%	$37,956	$8,937	21%	$52,197	$6,240	16%	$21,540	$4,430	21%	$37,681	$6,377
Other Primary	37%	$19,537	$2,412	62%	$30,683	$646	70%	$8,956	$772	39%	$15,992	$571
General practitioner	16%	17,148	3,210	7%	25,667	1,375	46%	8,998	845	11%	15,236	494
Family practitioner	13%	13,971	2,511	16%	16,734	429	13%	7,817	968	19%	11,481	763
Internist	3%	9,692	889	4%	5,194	78	6%	4,642	307	3%	7,703	130
Ob/Gyn	5%	46,200	539	25%	45,324	658	6%	15,316	240	6%	35,218	327
Other Physician	34%	$13,441	$4,868	25%	$12,065	$1,406	14%	$8,567	$707	32%	$10,477	$ 552
Other Individual	12%	$6,911	$567	2%	$11,693	$934	<1%	$13,081	$22	8%	$ 9,507	$1,923

INDIVIDUAL PROVIDERS OF BASIC PREVENTIVE CARE FOR CHILDREN BY TYPE, PERCENT DISTRIBUTION, MEAN DOLLARS PAID FOR ALL SERVICES AND FOR PREVENTIVE CARE SERVICES, CALIFORNIA, GEORGIA, MICHIGAN, AND TENNESSEE, 1992

Individual Providers	California			Georgia			Michigan			Tennessee		
	Percent n=8,157	Mean $ Paid All Services	Mean $ Paid Preventive Care	Percent n=801	Mean $ Paid All Services	Mean $ Paid Preventive Care	Percent n=3,754	Mean $ Paid All Services	Mean $ Paid Preventive Care	Percent n=1,821	Mean $ Paid All Services	Mean $ Paid Preventive Care
Pediatrician	14%	$51,395	$13,241	27%	$93,252	$21,037	16%	$32,672	$4,852	22%	$62,715	$13,712
Other Primary	34%	$29,879	$3,449	50%	$47,467	$1,744	70%	$13,032	$853	41%	$26,012	$1,416
General practitioner	13%	28,830	4,630	5%	36,152	5,372	46%	13,113	1,009	11%	23,699	1,051
Family practitioner	13%	21,734	3,712	17%	25,296	1,841	14%	10,711	728	18%	20,049	2,259
Internist	3%	22,685	2,660	3%	13,538	2,707	5%	6,210	533	4%	6,434	275
Ob/Gyn	6%	54,097	442	25%	68,057	840	3%	24,286	146	8%	51,116	31
Other Physician	41%	$25,572	$10,961	18%	$21,315	$3,676	13%	$11,578	$541	30%	$16,602	$ 961
Other Individual	11%	$9,498	$577	5%	$5,479	$480	1%	$14,164	$3,103	7%	$ 17,465	$4,198

INSTITUTIONAL PROVIDERS OF BASIC PREVENTIVE CARE FOR CHILDREN BY TYPE, COUNT, MEAN DOLLARS PAID FOR ALL SERVICES AND FOR PREVENTIVE CARE SERVICES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSE, 1989

Institutional Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Paid All Services	Mean $ Paid Preventive Care	Count	Mean $ Paid All Services	Mean $ Paid Preventive Care	Count	Mean $ Paid All Services	Mean $ Paid Preventive Care	Count	Mean $ Paid All Services	Mean $ Paid Preventive Care
Outpatient Department	893	$94,903	$6,840	78	$272,061	$1,127	5	$787,176	$5,707	113	$225,507	$2,943
Clinic	580	23,512	6,622	171	29,992	29,878	200	32,831	28,118	371	18,693	6,120
Other Providers	492*	31,317	7,342	24	12,466	1,495	49	42,190	18,201	55	16,547	13,163

* Includes 43 other/institutional unknowns which are most likely school clinics.

INSTITUTIONAL PROVIDERS OF BASIC PREVENTIVE CARE FOR CHILDREN BY TYPE, COUNT, MEAN DOLLARS PAID FOR ALL SERVICES AND FOR PREVENTIVE CARE SERVICES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSE, 1992

Institutional Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Paid All Services	Mean $ Paid Preventive Care	Count	Mean $ Paid All Services	Mean $ Paid Preventive Care	Count	Mean $ Paid All Services	Mean $ Paid Preventive Care	Count	Mean $ Paid All Services	Mean $ Paid Preventive Care
Outpatient Department	1,168	$137,283	$7,676	75	$689,140	$2,344	132	$481,727	$5,524	125	$501,521	$7,060
Clinic	1,137*	48,636	10,836	225	63,967	57,039	296**	69,222	30,219	521	25,953	8,233
Other Providers***	463	52,499	14,383	22	60,816	6,045	63	173,067	4,867	78	32,456	22,264

* Includes 46 school-based clinics. Their mean dollar of basic preventive services provided to children equaled $6,866.
** Includes 4 school districts (unknown number of schools). Their mean dollar of basic preventive services provided to children equaled $310,423.
*** Other providers are largely labs, home health agencies, etc.

INDIVIDUAL PROVIDERS OF EPSDT SERVICES BY TYPE
PERCENT DISTRIBUTION, MEAN DOLLARS PAID FOR ALL SERVICES AND FOR EPSDT SERVICES,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

	California			Georgia			Michigan			Tennessee		
Individiual Providers	Percent (n=2,067)	Mean $ Paid All Services	Mean $ Paid EPSDT	Percent (n=91)	Mean $ Paid All Services	Mean $ Paid EPSDT	Percent (n=43)	Mean $ Paid All Services	Mean $ Paid EPSDT	Percent (n=215)	Mean $ Paid All Services	Mean $ Paid EPSDT
Pediatrician	32%	$47,800	$15,194	67%	$63,343	$10,188	40%	$53,947	$13,119	67%	$39,424	$11,166
Other Primary	31%	$25,864	$6,451	31%	$18,664	$2,376	56%	$32,089	$ 3,886	32%	$15,108	$2,270
General Practitioner	14%	29,588	7,630	11%	30,270	4,428	26%	27,778	4,763	8%	24,256	1,902
Family Practitioner	15%	21,708	5,736	17%	12,333	1,307	23%	44,458	4,053	22%	12,377	2,532
Internist	1%	19,929	3,373	1%	10,234	22	2%	1,218	71	1%	8,655	828
Ob/Gyn	4%	46,963	4,325	0%	0	0	5%	9,389	135	0%	0%	0%
Other Physician	38%	$25,502	$14,821	2%	$93,113	$66,280	5%	$86,831	$24,509	1%	$19,311	$ 937
Other Individual	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

INDIVIDUAL PROVIDERS OF EPSDT SERVICES BY TYPE
PERCENT DISTRIBUTION, MEAN DOLLARS PAID FOR ALL SERVICES AND FOR EPSDT SERVICES,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

	California			Georgia			Michigan			Tennessee		
Individual Providers	Percent (n = 2,301)	Mean $ Paid All Services	Mean $ Paid EPSDT	Percent (n = 247)	Mean $ Paid All Services	Mean $ Paid EPSDT	Percent (n = 2,502)	Mean $ Paid All Services	Mean $ Paid EPSDT	Percent (n = 278)	Mean $ Paid All Services	Mean $ Paid EPSDT
Pediatrician	23%	$74,937	$26,618	66%	$98,058	$27,114	22%	$31,681	$2,173	63%	$6,946	$22,927
Other Primary	26%	$42,885	$11,356	32%	$31,000	$6,246	72%	$14,892	$225	36%	$29,459	$5,112
General Practitioner	12%	51,302	14,094	6%	46,915	15,246	44%	15,216	77	10%	30,996	1,978
Family Practitioner	12%	35,610	9,526	22%	30,370	4,022	17%	11,904	234	24%	28,522	6,601
Internist	2%	39,969	7,648	4%	13,337	6,172	3%	6,313	116	1%	14,375	3,735
Ob/Gyn	< 1%	32,946	4,037	< 1%	1,239	990	8%	22,686	36	< 1%	92,006	1,792
Other Physician	50%	$49,957	$30,340	2%	$170,381	$92,151	6%	$14,960	$568	1%	$14,237	$ 703
Other Individual	0%	0%	0%	< 1%	$4,435	$1,610	1%	$17,854	$1,879	0%	0%	0%

INSTITUTIONAL PROVIDERS OF EPSDT SERVICES BY TYPE
COUNT, MEAN DOLLARS PAID FOR ALL SERVICES AND FOR EPSDT SERVICES,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

Institutional Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Paid All Services	Mean $ Paid EPSDT	Count	Mean $ Paid All Services	Mean $ Paid EPSDT	Count	Mean $ Paid All Services	Mean $ Paid EPSDT	Count	Mean $ Paid All Services	Mean $ Paid EPSDT
Outpatient Department	74	$349,033	$24,085	0	0	0	0	0	0	0	0	0
Clinic	288	27,601	10,069	170	$30,053	$30,053	83	$65,039	$64,969	151	$14,637	$14,523
Other Providers*	175	20,102	15,824	0	0	0	2	4,513	4,513	0	0	0

* Other providers in California includes 43 providers which are school clinics; their average EPSDT dollars equaled $4,043.

INSTITUTIONAL PROVIDERS OF EPSDT SERVICES BY TYPE
COUNT, MEAN DOLLARS PAID FOR ALL SERVICES AND FOR EPSDT SERVICES,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Institutional Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Paid All Services	Mean $ Paid EPSDT	Count	Mean $ Paid All Services	Mean $ Paid EPSDT	Count	Mean $ Paid All Services	Mean $ Paid EPSDT	Count	Mean $ Paid All Services	Mean $ Paid EPSDT
Outpatient Department	80 466*	$647,456	$51,392	7	$1,628,125	$2,557	3	$1,501,822	$600	0	0	0
Clinic	175	64,465	20,943	194	66,879	65,710	248**	$49,066	$26,524	185	$24,335	$21,058
Other Providers***		45,855	29,212	0	0	0	0	0	0	0	0	0

* Includes 46 school-based clinics. Their mean dollar of EPSDT services provided to children equaled $6,862.
** Includes 4 school districts (unknown number of schools). Their mean dollar of EPSDT services provided to children equaled $4,956.
*** Other providers are largely labs, home health agencies, etc.

PERCENT DISTRIBUTION OF MEDICAID DOLLARS PAID TO PHYSICIANS AND OTHER AMBULATORY CARE PROVIDERS FOR ANY SERVICES TO CHILDREN, BASIC PREVENTIVE CARE FOR CHILDREN AND EPSDT SERVICES, BY PROVIDER TYPE, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

	California	Georgia	Michigan	Tennessee
Any Services to Children				
Office-Based Physicians	59%	59%	51%	52%
Non-Physician Providers	5%	3%	3%	2%
Clinic-Based Providers	36%	38%	46%	46%
Basic Preventive				
Office-Based Physicians	74%	16%	76%	45%
Non-Physician Providers	1%	<1%	<1%	5%
Clinic-Based Providers	25%	83%	22%	50%
EPSDT				
Office-Based Physicians	85%	14%	26%	45%
Non-Physician Providers	-	-	-	-
Clinic-Based Providers	15%	86%	74%	55%

* Excludes payments to hospitals, dentists, pharmacies, independant laboratories, home health agencies and providers of services other than ambulatory visits.

PERCENT DISTRIBUTION OF MEDICAID DOLLARS PAID TO PRACTITIONERS AND OTHER AMBULATORY CARE PROVIDERS FOR ANY SERVICES TO CHILDREN, PREVENTIVE FOR CARE FOR CHILDREN AND EPSDT SERVICES, BY PROVIDER TYPE, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

	California	Georgia	Michigan	Tennessee
Any Services to Children				
Office-Based Physicians	53%	56%	44%	49%
Non-Physician Providers	4%	5%	2%	3%
Clinic-Based Providers*	42%	38%	53%	49%
Basic Preventive				
Office-Based Physicians	85%	31%	64%	59%
Non-Physician Providers	0%	< 1%	1%	5%
Clinic-Based Providers*	15%	69%	35%	37%
EPSDT				
Office-Based Physicians	80%	29%	20%	54%
Non-Physician Providers	0	< 1%	< 1%	-
Clinic-Based Providers*	20%	70%	79%	46%

* Excludes payments to hospitals, dentists, pharmacies, independant laboratories, home health agencies and providers of services other than ambulatory visits.

PERCENT DISTRIBUTION OF MEDICAID DOLLARS PAID TO PHYSICIANS AND OTHER AMBULATORY CARE PROVIDERS* FOR ANY SERVICES TO CHILDREN, BY PROVIDER TYPE AND URBAN/RURAL STATUS, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

Provider Type	Percent of Total Dollars Paid			
	California	Georgia	Michigan	Tennessee
Urban				
Physicians	59%	59%	53%	51%
Pediatrician	14%	18%	13%	15%
Other Primary	23%	23%	24%	12%
Other	22%	18%	16%	24%
Non Physician Providers	4%	3%	3%	2%
Clinic/OPD-Based Providers	37%	38%	43%	47%
All Ambulatory Care Providers	100%	100%	100%	100%
Inner Urban				
Physicians	61%	57%	47%	***
Pediatrician	18%	21%	13%	***
Other Primary	21%	13%	21%	***
Other	21%	23%	13%	***
Non Physician Providers	5%	3%	2%	***
Clinic/OPD-Based Providers	35%	39%	51%	***
All Ambulatory Care Providers	100%	100%	100%	***
Suburban				
Physicians	48%	60%	48%	53%
Pediatrician	10%	16%	6%	14%
Other Primary	20%	28%	31%	23%
Other	18%	16%	11%	16%
Non Physician Providers	4%	3%	3%	4%
Clinic/OPD-Based Providers	47%	37%	48%	43%
All Ambulatory Care Providers	100%	100%	100%	100%
Rural				
Physicians	40%	60%	48%	54%
Pediatrician	2%	10%	5%	10%
Other Primary	22%	38%	32%	33%
Other	16%	13%	11%	11%
Non Physician Providers	5%	3%	4%	4%
Clinic/OPD-Based Providers	55%	37%	48%	42%
All Ambulatory Care Providers	100%	100%	100%	100%

* Excludes payments to hospitals, dentists, pharmacies, independent laboratories, home agencies and providers of service other than ambulatory visits.
** Procedure codes used to define basic preventive and EPSDT services have been discussed in an earlier report (Herz et al, 1994).
*** There were no counties meeting the definition of "inner urban" in Tennessee.

PERCENT DISTRIBUTION OF MEDICAID DOLLARS PAID TO PHYSICIANS AND OTHER AMBULATORY CARE PROVIDERS FOR ANY SERVICES TO CHILDREN, BY PROVIDER TYPE AND URBAN/RURAL STATUS, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Provider Type	Percent of Total Dollars Paid			
	California	Georgia	Michigan	Tennessee
Urban				
Physicians	48%	57%	44%	49%
Pediatrician	18%	19%	11%	15%
Other Primary	17%	22%	22%	13%
Other	23%	15%	11%	21%
Non Physician Providers	4%	6%	3%	2%
Clinic/OPD-Based Providers	48%	37%	53%	49%
All Ambulatory Care Providers	100%	100%	100%	100%
Inner Urban				
Physicians	56%	55%	44%	45%
Pediatrician	13%	23%	14%	16%
Other Primary	19%	14%	19%	10%
Other	24%	17%	11%	19%
Non Physician Providers	4%	5%	2%	5%
Clinic/OPD-Based Providers	40%	39%	56%	51%
All Ambulatory Care Providers	100%	100%	100%	100%
Suburban				
Physicians	37%	57%	42%	51%
Pediatrician	8%	16%	3%	14%
Other Primary	13%	28%	29%	23%
Other	15%	13%	9%	14%
Non Physician Providers	4%	7%	2%	4%
Clinic/OPD-Based Providers	60%	36%	56%	46%
All Ambulatory Care Providers	100%	100%	100%	100%
Rural				
Physicians	25%	56%	46%	53%
Pediatrician	2%	12%	7%	14%
Other Primary	12%	35%	31%	26%
Other	11%	9%	8%	13%
Non Physician Providers	5%	2%	3%	3%
Clinic/OPD-Based Providers	70%	42%	51%	44%
All Ambulatory Care Providers	100%	100%	100%	100%

* Excludes payments to hospitals, dentists, pharmacies, independent laboratories, home agencies and providers of service other than ambulatory visits.

PERCENT DISTRIBUTION OF MEDICAID DOLLARS PAID TO PHYSICIANS AND OTHER AMBULATORY CARE PROVIDERS* FOR BASIC PREVENTIVE SERVICES TO CHILDREN, BY PROVIDER TYPE AND URBAN/RURAL STATUS, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

Provider Type	Percent of Total Dollars Paid			
	California	Georgia	Michigan	Tennessee
Urban				
Physicians	75%	15%	38%	51%
Pediatrician	28%	11%	22%	41%
Other Primary	14%	3%	14%	5%
Other	33%	1%	2%	6%
Non Physician Providers	1%	<1%	<1%	5%
Clinic/OPD-Based Providers	24%	84%	62%	44%
All Ambulatory Care Providers	100%	100%	100%	100%
Inner Urban				
Physicians	74%	34%	87%	***
Pediatrician	27%	17%	46%	***
Other Primary	17%	4%	33%	***
Other	29%	13%	8%	***
Non Physician Providers	1%	1%	<1%	***
Clinic/OPD-Based Providers	25%	65%	13%	***
All Ambulatory Care Providers	100%	100%	100%	***
Suburban				
Physicians	72%	17%	29%	48%
Pediatrician	21%	14%	9%	35%
Other Primary	18%	2%	18%	8%
Other	33%	1%	2%	4%
Non Physician Providers	1%	<1%	-	2%
Clinic/OPD-Based Providers	26%	83%	71%	50%
All Ambulatory Care Providers	100%	100%	100%	100%
Rural				
Physicians	52%	7%	25%	24%
Pediatrician	<1%	4%	5%	15%
Other Primary	18%	2%	18%	8%
Other	34%	1%	2%	1%
Non Physician Providers	3%	-	-	2%
Clinic/OPD-Based Providers	45%	93%	75%	73%
All Ambulatory Care Providers	100%	100%	100%	100%

* Excludes payments to hospitals, dentists, pharmacies, independent laboratories, home health agencies and providers of services other than ambulatory visits.

** Procedure codes used to define basic preventive and EPSDT services have been discussed in an earlier report (Herz et al, 1994).

*** There were no counties meeting the definition of "inner urban" in Tennessee.

PERCENT DISTRIBUTION OF MEDICAID DOLLARS PAID TO PHYSICIANS AND OTHER AMBULATORY CARE PROVIDERS FOR BASIC PREVENTIVE SERVICES** TO CHILDREN, BY PROVIDER TYPE AND URBAN/RURAL STATUS, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Provider Type	Percent of Total Dollars Paid			
	California	Georgia	Michigan	Tennessee
Urban				
Physicians	84%	30%	77%	59%
Pediatrician	21%	26%	5%	46%
Other Primary	13%	3%	71%	8%
Other	51%	<1%	<1%	5%
Non Physician Providers	1%	<1%	<1%	3%
Clinic/OPD-Based Providers	15%	69%	23%	38%
All Ambulatory Care Providers	100%	100%	100%	100%
Inner Urban				
Physicians	75%	46%	53%	45%
Pediatrician	18%	32%	31%	38%
Other Primary	12%	5%	21%	4%
Other	45%	9%	2%	3%
Non Physician Providers	<1%	<1%	<1%	15%
Clinic/OPD-Based Providers	24%	53%	46%	40%
All Ambulatory Care Providers	100%	100%	100%	100%
Suburban				
Physicians	64%	30%	23%	56%
Pediatrician	15%	26%	4%	43%
Other Primary	10%	3%	17%	10%
Other	39%	<1%	2%	4%
Non Physician Providers	1%	<1%	<1%	2%
Clinic/OPD-Based Providers	35%	70%	77%	42%
All Ambulatory Care Providers	100%	100%	100%	100%
Rural				
Physicians	35%	11%	19%	45%
Pediatrician	4%	9%	5%	30%
Other Primary	6%	2%	13%	15%
Other	25%	<1%	9%	<1%
Non Physician Providers	2%	<1%	<1%	2%
Clinic/OPD-Based Providers	63%	89%	81%	53%
All Ambulatory Care Providers	100%	100%	100%	100%

* Excludes payments to hospitals, dentists, pharmacies, independent laboratories, home health agencies and providers of services other than ambulatory visits.
** Procedure codes used to define basic preventive and EPSDT services have been discussed in an earlier report (Herz et al, 1994).

PERCENT DISTRIBUTION OF MEDICAID DOLLARS PAID TO PHYSICIANS AND OTHER AMBULATORY CARE PROVIDERS* FOR EPSDT SERVICES TO CHILDREN, BY PROVIDER TYPE AND URBAN/RURAL STATUS CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

Provider Type	Percent of Total Dollars Paid			
	California	Georgia	Michigan	Tennessee
Urban				
Physicians	91%	12%	5%	52%
Pediatrician	62%	11%	3%	49%
Other Primary	7%	1%	2%	3%
Other	22%	<1%	<1%	<1%
Non Physician Providers	0%	0%	0%	0%
Clinic/OPD-Based Providers	9%	88%	95%	48%
All Ambulatory Care Providers	100%	100%	100%	100%
Inner Urban				
Physicians	85%	34%	59%	***
Pediatrician	34%	17%	31%	***
Other Primary	14%	3%	7%	***
Other	3%	13%	20%	***
Non Physician Providers	0%	0%	0%	***
Clinic/OPD-Based Providers	15%	66%	42%	***
All Ambulatory Care Providers	100%	100%	100%	***
Suburban				
Physicians	81%	14%	1%	44%
Pediatrician	26%	14%	<1%	37%
Other Primary	15%	<1%	<1%	6%
Other	40%	0%	0%	0%
Non Physician Providers	0%	0%	0%	0%
Clinic/OPD-Based Providers	19%	86%	99%	56%
All Ambulatory Care Providers	100%	100%	100%	100%
Rural				
Physicians	60%	4%	<1%	21%
Pediatrician	0%	4%	0%	17%
Other Primary	19%	<1%	<1%	4%
Other	41%	0%	0%	0%
Non Physician Providers	0%	0%	0%	0%
Clinic/OPD-Based Providers	40%	96%	99%	79%
All Ambulatory Care Providers	100%	100%	100%	100%

* Excludes payments to hospitals, dentists, pharmacies, independent laboratories, home health agencies and providers of services other than ambulatory visits.
** Procedure codes used to define basic preventive and EPSDT services have been discussed in an earlier report (Herz et al, 1994).
*** There were no counties meeting the definition of "inner urban" in Tennessee.

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PERCENT DISTRIBUTION OF MEDICAID DOLLARS PAID TO PRACTITIONERS AND OTHER AMBULATORY CARE PROVIDERS FOR EPSDT SERVICES TO CHILDREN, BY PROVIDER TYPE AND URBAN/RURAL STATUS
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Provider Type	Percent of Total Dollars Paid			
	California	Georgia	Michigan	Tennessee
Urban				
Physicians	77%	29%	19%	61%
Pediatrician	20%	27%	13%	56%
Other Primary	8%	2%	5%	5%
Other	49%	0%	<1%	<1%
Non Physician Providers	0%	<1%	1%	0%
Clinic/OPD-Based Providers	23%	71%	80%	39%
All Ambulatory Care Providers	100%	100%	100%	100%
Inner Urban				
Physicians	81%	46%	38%	42%
Pediatrician	20%	32%	31%	36%
Other Primary	10%	5%	6%	6%
Other	51%	9%	<1%	0%
Non Physician Providers	0%	0%	<1%	0%
Clinic/OPD-Based Providers	18%	54%	62%	58%
All Ambulatory Care Providers	100%	100%	100%	100%
Suburban				
Physicians	75%	28%	6%	50%
Pediatrician	18%	26%	2%	44%
Other Primary	10%	2%	4%	7%
Other	47%	<1%	<1%	0%
Non Physician Providers	0%	<1%	<1%	0%
Clinic/OPD-Based Providers	25%	72%	94%	50%
All Ambulatory Care Providers	100%	100%	100%	100%
Rural				
Physicians	41%	10%	5%	41%
Pediatrician	5%	8%	2%	30%
Other Primary	5%	2%	3%	11%
Other	31%	0%	<1%	<1%
Non Physician Providers	0%	0%	0%	0%
Clinic/OPD-Based Providers	59%	90%	95%	59%
All Ambulatory Care Providers	100%	100%	100%	100%

* Excludes payments to hospitals, dentists, pharmacies, independent laboratories, home health agencies and providers of services other than ambulatory visits.

COUNTS AND PERCENT DISTRIBUTION OF PROVIDERS OF SERVICES TO CHILDREN BY TYPE AND PROVIDER'S DOMINANT PLACE OF SERVICE, INDIVIDUAL AND INSTITUTIONAL PROVIDERS, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Provider Type and Setting	California	Georgia	Michigan	Tennessee
Individual Providers				
All Individual	42,327	9,129	15,213	7,929
Inpatient	23%	19%	15%	19%
Outpatient - Office	59%	54%	51%	55%
Outpatient - Other	17%	27%	33%	25%
Clinic	0%	3%	<1%	<1%
OPD/ER	13%	21%	29%	24%
Other Amb	4%	3%	4%	1%
Unknown setting	0%	<1%	1%	1%
Pediatrician	2,811	695	865	624
Inpatient	34%	23%	23%	20%
Outpatient - Office	61%	59%	61%	65%
Outpatient - Other	5%	18%	17%	14%
Clinic	0%	0%	0%	0%
OPD/ER	5%	14%	17%	1%
Other Amb	<1%	4%	0%	13%
Unknown setting	<1%	0%	0%	<1%
Other Primary	9,841	3,439	6,696	2,194
Inpatient	20%	13%	14%	15%
Outpatient - Office	75%	57%	59%	71%
Outpatient - Other	4%	30%	26%	13%
Clinic	0%	<1%	<1%	0%
OPD/ER	4%	29%	26%	12%
Other Amb	<1%	1%	<1%	1%
Unknown setting	1%	<1%	2%	<1%
Other Physician	23,801	4,027	5,369	4,551
Inpatient	28%	26%	19%	23%
Outpatient - Office	44%	48%	45%	40%
Outpatient - Other	27%	25%	37%	35%
Clinic	0%	0%	<1%	0%
OPD/ER	22%	6%	37%	35%
Other Amb	5%	19%	<1%	<1%
Unknown setting	2%	0%	1%	2%
Other Individual	5,874	968	2,283	560
Inpatient	1%	6%	13%	0%
Outpatient - Office	93%	71%	40%	99%
Outpatient - Other	6%	23%	48%	1%
Clinic	0%	1%	<1%	0%
OPD/ER	1%	4%	21%	<1%
Other Amb	5%	18%	27%	<1%
Unknown setting	<1%	<1%	<1%	<1%
Institutional Providers				
All	6,226*	622	1,252	1,073
OPD/ER	3,614	164	192	148
Clinic	2,612*	458	1,060**	925
Rural Health	388	17	40	13
FQHC	506	13	206	58
Public Health	-***	279	96	128
Other Clinic	1,718*,***	149	718**	727

* Includes 46 school-based clinics.
** Includes 6 school districts (unknown number of schools).
*** Public health departments could not be separately identified in California.

COUNTS AND PERCENT DISTRIBUTION OF PROVIDERS OF BASIC PREVENTIVE CARE SERVICES TO CHILDREN BY TYPE AND PROVIDER'S DOMINANT PLACE OF SERVICE, INDIVIDUAL AND INSTITUTIONAL PROVIDERS, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE 1992

Provider Type and Setting	California	Georgia	Michigan	Tennessee
Individual Providers				
All Individual	8,157	801	3,754	1,821
Inpatient	6%	3%	3%	6%
Outpatient - Office	72%	83%	81%	71%
Outpatient - Other	21%	13%	16%	24%
Clinic	0%	< 1%	0%	< 1%
OPD/ER	7%	8%	16%	16%
Other Amb	14%	5%	< 1%	6%
Unknown setting	< 1%	< 1%	< 1%	< 1%
Pediatrician	1,126	217	601	392
Inpatient	14%	3%	7%	6%
Outpatient - Office	83%	83%	77%	73%
Outpatient - Other	2%	14%	15%	21%
Clinic	0%	0%	0%	0%
OPD/ER	2%	3%	15%	1%
Other Amb	< 1%	11%	0%	20%
Unknown setting	< 1%	0%	0%	0%
Other Primary	2,757	398	2,635	748
Inpatient	3%	2%	1%	3%
Outpatient - Office	95%	90%	85%	89%
Outpatient - Other	2%	9%	14%	8%
Clinic	0%	0%	0%	0%
OPD/ER	2%	6%	14%	5%
Other Amb	< 1%	3%	< 1%	3%
Unknown setting	0%	0%	0%	< 1%
Other Physician	3,336	143	494	545
Inpatient	9%	12%	4%	14%
Outpatient - Office	42%	65%	66%	37%
Outpatient - Other	49%	23%	29%	48%
Clinic	0%	0%	0%	0%
OPD/ER	16%	21%	29%	47%
Other Amb	33%	2%	< 1%	1%
Unknown setting	< 1%	< 1%	< 1%	1%
Other Individual	938	43	24	136
Inpatient	< 1%	0%	0%	0%
Outpatient - Office	99%	79%	87%	100%
Outpatient - Other	< 1%	20%	13%	0%
Clinic	0%	2%	0%	0%
OPD/ER	< 1%	16%	9%	0%
Other Amb	< 1%	2%	4%	0%
Unknown setting	< 1%	0%	0%	0%
Institutional Providers				
All	2,305	300	428	646
OPD/ER	1,168	75	132**	125
Clinic	1,137*	225	296**	521
Rural Health	239	8	23	9
FQHC	275	6	142	53
Public Health	-	193	-	126
Other Clinic	623***	18	127***	333

* Includes 46 school-based clinics.
** Includes 4 school districts (unknown number of schools).
*** Includes public health departments.

PERCENT DISTRIBUTION OF DOLLARS PAID FOR ANY SERVICES AND FOR BASIC PREVENTIVE CARE** PROVIDED TO CHILDREN BY PROVIDERS' DOMINANT PLACE OF SERVICE FOR EACH SERVICE CATEGORY, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

Usual Provider Setting	California		Georgia		Michigan		Tennessee	
	Percent Providers	Percent Dollars	Percent Providers	Percent Dollars	Percent Providers	Percent Dollars	Percent Providers	Percent Dollars
All services to Children								
Office	57%	43%	52%	40%	51%	35%	46%	27%
Clinic/Outpatient	23%	45%	24%	46%	34%	59%	36%	60%
Inpatient	19%	12%	24%	14%	15%	6%	18%	13%
Basic Preventive Care								
Office	54%	11%	45%	3%	81%	90%	46%	12%
Clinic/Outpatient	44%	88%	52%	96%	17%	10%	48%	87%
Inpatient	3%	1%	3%	1%	1%	1%	5%	1%

* Each individual provider was assigned a setting based on the majority of claims submitted. Dollars paid to providers in clinic and outpatient settings were combined for individual and institutional providers.

** Procedure codes used to define basic preventive and EPSDT services have been discussed in an earlier report (Herz et al, 1994).

PERCENT DISTRIBUTION OF PROVIDERS AND DOLLARS PAID FOR ANY SERVICES AND FOR PREVENTIVE CARE PROVIDED TO CHILDREN BY DOMINANT PLACE OF SERVICE*, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Usual Provider Setting	California		Georgia		Michigan		Tennessee	
	Percent Providers	Percent Dollars	Percent Providers	Percent Dollars	Percent Providers	Percent Dollars	Percent Providers	Percent Dollars
All services to Children								
Ambulatory								
Office	52%	40%	51%	39%	48%	31%	49%	31%
OPD/ER	19%	18%	21%	37%	28%	43%	23%	39%
Clinic	6%	21%	8%	11%	7%	21%	10%	18%
Rural Health	<1%	2%	<1%	<1%	<1%	<1%	<1%	<1%
FQHC	1%	3%	<1%	<1%	1%	2%	1%	10%
Public Health	**	**	3%	6%	1%***	<1%***	<1%	1%
Other Clinic	4%	16%	2%	4%	4%	19%	8%	16%
Other Ambulatory	3%	10%	2%	3%	4%	1%	1%	3%
Inpatient	20%	10%	18%	10%	14%	4%	18%	9%
Basic Preventive Care								
Ambulatory								
Office	46%	5%****	44%	2%	76%	35%	49%	18%
OPD/ER	17%	10%	12%	1%	15%	6%	16%	8%
Clinic	11%	15%	21%	68%	7%	59%	21%	34%
Rural Health	2%	2%	<1%	<1%	1%	<1%	<1%	<1%
FQHC	3%	4%	<1%	<1%	3%	3%	2%	4%
Public Health	**	**	18%	67%	***	***	5%	21%
Other Clinic	6%	9%	3%	1%	3%	56%	13%	9%
Other Ambulatory	22%	69%****	22%	29%	<1%	<1%	11%	38%
Inpatient	4%	<1%	1%	<1%	2%	<1%	3%	2%

* Each individual provider was assigned a setting based on the majority of claims submitted. Clinics and outpatient settings were combined for individual and institutional providers.
** Public Health departments could not be separately identified in California. Provider counts and dollars for public health departments fall into "other clinic".
*** Public health department claims for EPSDT services could not be separately identified in Michigan. They, as well as the school based clinics, fall into "other clinic".
**** These data likely reflect a change in the way place of service was coded on California claims in 1992; more were assigned an unknown place of service and this applied disproportionally to preventive and EPSDT claims.

PHYSICIAN PARTICIPATION RATES UNDER ALTERNATIVE DEFINITIONS,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE,
1988 and 1989

Definitions	California	Georgia	Michigan	Tennessee
All participating physicians as percent of office plus hospital-based physicians				
1988	na	73%	78%	79%
1989	76%	73%	67%	86%
Participating physicians with > $3000 in Medicaid payments as percent of office plus hospital-based physicians				
1989	35%	51%	42%	58%
Participating physicians with > $3000 in Medicaid payments as percent of office plus hospital-based physicians (minus residents and clinical fellows)				
1989	40%	61%	51%	72%

Data source: Data on practicing physicians came from the American Medical Associations Physician Masterfile as recorded in the Area Resource File; data on participating physicians came from the Tape-to-Tape data files.

PHYSICIAN PARTICIPATION RATES UNDER ALTERNATIVE DEFINITIONS,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE,
1992

Definitions	California	Georgia	Michigan	Tennessee
All participating physicians as percent of office plus hospital-based physicians				
1992	82%	84%	74%	86%
Participating physicians with > $3000 in Medicaid payments as percent of office-plus hospital-based physicians				
1992	51%	66%	52%	64%
Participating physicians with > $3000 in Medicaid payments as percent of office and hospital-based physicians (minus residents and clinical fellows)				
1992	58%	77%	63%	78%

Data source: Data on practicing physicians came from the American Medical Associations Physician Masterfile as recorded in the Area Resource File; data on participating physicians came from the Tape-to-Tape data files.

NUMBER AND PERCENT OF COUNTIES WITH EVIDENCE OF A SHORTAGE OF PRIMARY CARE AND PEDIATRIC PROVIDERS, BASED ON ALL CHILDREN, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE 1989

	California	Georgia	Michigan	Tennessee
Shortage Counties				
Primary Care Providers*	1 (1.7%)	35 (22.0%)	14 (16.9%)	16 (16.8%)
Child Providers**	12 (20.7%)	97 (61.0%)	50 (60%)	49 (51.6%)
Type of Shortage County				
Primary Care				
Urban	0	10	3	4
Inner	-	-	***	-
Suburban	1	5	3	3
Rural	0	20	8	9
Child Provider				
Urban	2	24	10	11
Inner	1	1	***	-
Suburban	7	27	14	10
Rural	8	46	26	28

* Shortage of primary care physicians is defined as those counties with 4,000 or more persons per primary care (PED's, GP's, FP's, Internists, OB/GYN's) provider based on ARF data.

** Shortage of child providers is defined as those counties where the Child Ratio (as defined in text) is equal to or greater than 2,500 (for children age 19 and under), based on ARF data.

*** Using the alternative inner-urban definition, four inner-urban counties in this state were defined as shortage areas.

NUMBER AND PERCENT OF COUNTIES WITH EVIDENCE OF A SHORTAGE OF PRIMARY CARE AND PEDIATRIC PROVIDERS, BASED ON ALL CHILDREN, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE 1992

	California	Georgia	Michigan	Tennessee
Shortage Counties				
Primary Care Providers*	2 (3%)	28 (18%)	16 (19%)	12 (12.6%)
Child Providers**	13 (22%)	94 (59%)	53 (64%)	52 (54.7%)
Type of Shortage County				
Primary Care				
Urban	-	9	3	3
Inner	-	-	-	-
Suburban	1	5	4	5
Rural	1	14	9	4
Child Provider				
Urban	2	23	12	12
Inner	-	-	1	-
Suburban	8	31	13	19
Rural	3	40	27	21

* Shortage of primary care physicians is defined as those counties with 4,000 or more persons per primary care (PED's, GP's, FP's, Internists, OB/GYN's) provider based on ARF data.

** Shortage of child providers is defined as those counties where the Child Ratio (as defined in text) is equal to or greater than 2,500 (for children age 19 and under), based on ARF data.

Note: There were an additional 12 counties in Georgia with no MDs reported on the ARF files; 3 in Michigan; and 1 in Tennessee.

NUMBER OF COUNTIES WITH EVIDENCE OF A SHORTAGE OF MEDICAID CHILD PROVIDERS, AND URBAN/RURAL BREAKDOWN OF SHORTAGE COUNTIES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

	California	Georgia	Michigan	Tennessee
Counties with:				
Medicaid Child Provider Shortage	0	23	0	6
No participating physicians	2	11	2	0
Of those counties with participating physicians, those with:				
No primary care physicians serving children	1	5	2	1
No pediatricians serving children	9	90	34	40
No preventive care physicians serving children	1	46	2	6
Type of "Shortage" County*				
Urban	-	3	-	1
Inner Urban	-	-	-	na
Suburban	-	5	-	-
Rural	-	15	-	5

NOTE: California has 58 counties; Georgia, 159; Michigan, 83; and Tennessee, 95.
Shortage of Medicaid child providers is defined as those counties where the Child Ratio is equal to or greater than 1,500 using counts of Medicaid enrollees under 21 years of age and counts of Medicaid participating pediatricians, plus one-fourth of Medicaid participating general and family practitioners who submit at least one claim.

NUMBER OF COUNTIES WITH EVIDENCE OF A SHORTAGE OF MEDICAID CHILD PROVIDERS, AND URBAN/RURAL BREAKDOWN OF SHORTAGE COUNTIES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

	California	Georgia	Michigan	Tennessee
Counties with:				
Medicaid Child Provider Shortage	4	30	5	16
No participating physicians	0	10	3	1
Of those counties with participating physicians, those with:				
No primary care physicians serving children	0	2	0	3
No pediatricians serving children	11	81	27	42
No preventive care physicians serving children	0	47	0	3
Type of "Shortage" County*				
Urban	3	8	-	4
Inner Urban	-	-	-	0
Suburban	-	5	-	9
Rural	1	17	5	9

NOTE: California has 58 counties; Georgia, 159; Michigan, 83; and Tennessee, 95.
Shortage of Medicaid child providers is defined as those counties where the Child Ratio is equal to or greater than 1,500 using counts of Medicaid enrollees under 21 years of age and counts of Medicaid participating pediatricians, plus one-fourth of Medicaid participating general and family practitioners who submit at least one claim.

NUMBER OF COUNTIES IDENTIFIED AS
SHORTAGE COUNTIES FOR BOTH CHILDREN OVERALL AND MEDICAID CHILDREN,
AND MEAN MEDICAID CHILD/PROVIDER RATIO FOR COUNTIES BY SHORTAGE STATUS,
CALIFORNIA, GEORGIA, MICHIGAN, TENNESSEE, 1989

	California	Georgia	Michigan	Tennessee
Counties with shortage for both children overall and for Medicaid children	0	20	1	4
Medicaid Child/Provider Ratio:				
All participating child providers				
Shortage counties	699	970	546	816
Non shortage counties	595	563	643	379
Participating child providers with $3,000 in Medicaid payments				
Shortage counties	1,258	1,082	750	1,098
Non shortage counties	595	663	759	463

NOTE: All ratios measure the number of children relative to one provider, i.e. 699:1. Medicaid children are defined as all enrollees under 21 years of age. Participating child providers are defined as all Medicaid participating pediatricians and one-fourth of all Medicaid participating general and family practitioners.

NUMBER OF COUNTIES IDENTIFIED AS
SHORTAGE COUNTIES FOR BOTH CHILDREN OVERALL AND MEDICAID CHILDREN,
AND MEAN MEDICAID CHILD/PROVIDER RATIO FOR COUNTIES BY SHORTAGE STATUS,
CALIFORNIA, GEORGIA, MICHIGAN, TENNESSEE, 1992

	California	Georgia	Michigan	Tennessee
Counties with shortage for both children overall and for Medicaid children	1	21	0	13
Medicaid Child/Provider Ratio:				
All participating child providers				
Shortage counties	904	1,136	612	1,241
Non shortage counties	400	742	486	591
Participating child providers with $3,000 in Medicaid payments				
Shortage counties	1,191	1,297	799	1,478
Non shortage counties	541	800	560	615

NOTE: All ratios measure the number of children relative to one provider, i.e. 699:1. Medicaid children are defined as all enrollees under 21 years of age. Participating child providers are defined as all Medicaid participating pediatricians and one-fourth of all Medicaid participating general and family practitioners.

Shortage counties are those meeting the 2500 cut-off for an overall shortage of child providers.

ENROLLEE TO PARTICIPATING PROVIDER RATIOS (COUNTY LEVEL),
AND MEDICAID CHILD/PROVIDER RATIOS,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

	California	Georgia	Michigan	Tennessee
Participating Provider Ratios for all Medicaid Enrollees				
All participating providers	139	309	216	248
Providers billing > $3,000	249	356	278	314
Child Provider Ratios for Medicaid Children				
All participating child providers	424	830	678	645
Child providers with > $3,000 in Medicaid payments	735	935	1,142	988
Primary care physicians serving Medicaid children	52	215	159	226
Preventive care physicians serving Medicaid children	382	839	237	325
EPSDT physician providers	1,015	2,665	11,518	1,386

NOTE: All ratios measure the number of children relative to one provider, i.e. 139:1. Medicaid children are defined as all enrollees under 21 years of age. Participating child providers are defined as all Medicaid particiapting pediatricians and one-fourth of all Medicaid participating general and family pratitioners.

ENROLLEE TO PARTICIPATING PROVIDER RATIOS (COUNTY LEVEL),
AND MEDICAID CHILD/PROVIDER RATIOS,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

	California	Georgia	Michigan	Tennessee
Participating Provider Ratios for all Medicaid Enrollees				
All participating providers	160	371	186	400
Providers billing > $3,000	229	414	230	485
Child Provider Ratios for Medicaid Children				
All participating child providers	513	994	569	954
Child providers with > $3,000 in Medicaid payments	686	1,118	718	1,103
Primary care physicians serving Medicaid children	342	254	159	352
Preventive care physicians serving Medicaid children	373	976	233	455
EPSDT physician provider	1,441	2,123	377	2,101

NOTE: All ratios measure the number of children relative to one provider, i.e. 160:1. Medicaid children are defined as all enrollees under 21 years of age. Participating child providers are defined as all Medicaid particiapting pediatricians and one-fourth of all Medicaid participating general and family pratitioners.

ENROLLEE TO PROVIDER RATIOS FOR PRIMARY AND BASIC PREVENTIVE CARE PHYSICIANS SERVING CHILDREN
BY URBAN/RURAL STATUS,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

	California	Georgia	Michigan	Tennessee
Urban				
Primary Care Physician	289 (2,477)	181 (326)	97 (231)	214 (391)
Basic Preventive Care Physician	417 (2,186)	1,007 (965)	184 (287)	316 (424)
Inner Urban				
Primary Care Physician	201 (781)	94 (240)	151 (412)	**
Basic Preventive Care Physician	361 (833)	621 (875)	319 (588)	**
Suburban				
Primary Care Physician	285 (1,308)	199 (301)	158 (266)	167 (294)
Basic Preventive Care Physician	411 (1,222)	975 (1,114)	234 (306)	287 (405)
Rural				
Primary Care Physician	166 (875)	242 (315)	190 (297)	265 (335)
Basic Preventive Care Physician	283 (870)	262 (419)	262 (357)	353 (386)

NOTE: All ratios measure the number of children relative to one physician, i.e. 289:1. Children are defined as enrollees under 21 years of age.

* Numbers in parantheses reflect the enrollee to provider ratios based on only those physicians paid more than $3,000 in a year.
** There were no counties meeting the definition of "inner urban" in Tennessee.

ENROLLEE TO PROVIDER RATIOS FOR PRIMARY AND BASIC PREVENTIVE CARE PHYSICIANS SERVING CHILDREN
BY URBAN/RURAL STATUS,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

	California	Georgia	Michigan	Tennessee
Urban				
Primary Care Physician	415 (1,727)	274 (395)	122 (219)	357 (535)
Basic Preventive Care Physician	439 (630)	996 (1060)	198 (266)	370 (394)
Inner Urban				
Primary Care Physician	237 (708)	123 (251)	76 (191)	243 (507)
Basic Preventive Care Physician	330 (535)	734 (889)	189 (294)	577 (870)
Suburban				
Primary Care Physician	453 (981)	199 (308)	150 (239)	346 (517)
Basic Preventive Care Physician	392 (504)	1,117 (1,156)	238 (292)	469 (576)
Rural				
Primary Care Physician	210 (559)	290 (386)	190 (306)	357 (416)
Basic Preventive Care Physician	301 (408)	864 (918)	254 (356)	502 (516)

NOTE: All ratios measure the number of children relative to one physician, i.e. 415:1. Children are defined as enrollees under 21 years of age.

* Numbers in parantheses reflect the enrollee to physician ratios based on only those physicians paid more than $3,000 in a year.

HERFINDAHL INDICES FOR ANY PARTICIPATING
PROVIDERS AND INDIVIDUAL PHYSICIANS BY SERVICE TYPE
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

	California	Georgia	Michigan	Tennessee
Herfindahl Index-All Providers*				
All Services to Children	.11	.17	.12	.16
Basic Preventive Care	.16	.69	.26	.62
EPSDT	.21	.75	.73	.78
Herfindahl Index-Physicians				
All Services to Children	.13	.34	.13	.28
Basic Preventive Care	.24	.70	.27	.57
EPSDT	.27	.79	.78	.72

* Omits other provider category

HERFINDAHL INDICES FOR ANY PARTICIPATING
PROVIDERS AND INDIVIDUAL PHYSICIANS BY SERVICE TYPE
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

	California	Georgia	Michigan	Tennessee
Herfindahl Index-All Providers*				
All Services to Children	.11	.17	.13	.17
Basic Preventive Care	.17	.68	.32	.57
EPSDT	.22	.71	.56	.67
Herfindahl Index-Physicians				
All Services to Children	.11	.29	.12	.29
Basic Preventive Care	.25	.66	.27	.53
EPSDT	.27	.76	.45	.66

* Omits other provider category

HERFINDAHL INDICES FOR ALL PARTICIPATING PROVIDERS AND INDIVIDUAL PHYSICIANS BY SERVICE TYPE AND URBAN/RURAL STATUS, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

Individual and Institutional Providers*	California	Georgia	Michigan	Tennessee
All Services				
Urban	.06	.17	.06	.14
Inner Urban	.03	.07	.01	***
Suburban	.10	.20	.10	.14
Rural	.27	.16	.16	.19
Basic Preventive Care **				
Urban	.09	.69	.16	.45
Inner Urban	.03	.50	.01	***
Suburban	.17	.84	.23	.61
Rural	.36	.64	.32	.73
EPSDT **				
Urban	.12	.77	.86	.51
Inner Urban	.03	.62	.29	***
Suburban	.21	.92	.81	.70
Rural	.50	.68	.55	.78
Physicians				
All Services				
Urban	.05	.02	.03	.20
Inner Urban	.01	.24	.00	***
Suburban	.15	.25	.08	.20
Rural	.32	.44	.21	.36
Basic Preventive Care **				
Urban	.12	.19	.16	.48
Inner Urban	.03	.64	.01	***
Suburban	.30	.71	.22	.58
Rural	.54	.76	.38	.62
EPSDT **				
Urban	.15	.60	.87	.55
Inner Urban	.03	.78	.31	***
Suburban	.34	.63	.86	.81
Rural	.62	.90	.25	.84

* Omits unknown category of provider.
** Procedure codes used to define basic preventive and EPSDT services have been discussed in an earlier report (Herz et al, 1994).
*** There were no counties meeting the definition of "inner urban" in Tennessee.

NOTE: Medicaid children are defined as enrollees under 21 years of age.

HERFINDAHL INDICES FOR ALL PARTICIPATING PROVIDERS AND INDIVIDUAL PHYSICIANS BY SERVICE TYPE AND URBAN/RURAL STATUS, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Individual and Institutional Providers*	California	Georgia	Michigan	Tennessee
All Services				
Urban	.06	.15	.07	.12
Inner Urban	.04	.06	.04	.03
Suburban	.16	.16	.12	.15
Rural	.26	.19	.18	.22
Basic Preventive Care				
Urban	.13	.66	.31	.41
Inner Urban	.07	.45	.15	.04
Suburban	.19	.77	.30	.57
Rural	.44	.66	.34	.71
EPSDT				
Urban	.16	.70	.61	.48
Inner Urban	.07	.48	.54	.06
Suburban	.24	.82	.50	.71
Rural	.63	.68	.57	.79
Physicians				
All Services				
Urban	.05	.33	.04	.18
Inner Urban	.02	.04	.02	.01
Suburban	.18	.18	.07	.25
Rural	.31	.39	.19	.41
Basic Preventive Care				
Urban	.17	.59	.21	.31
Inner Urban	.07	.37	.17	.06
Suburban	.33	.62	.21	.54
Rural	.67	.77	.34	.69
EPSDT				
Urban	.22	.65	.42	.51
Inner Urban	.08	.44	.31	.13
Suburban	.38	.76	.38	.75
Rural	.67	.91	.53	.83

* Omits unknown category of provider.
** Procedure codes used to define basic preventive and EPSDT services have been discussed in an earlier report (Herz et al, 1994).

NOTE: Medicaid children are defined as enrollees under 21 years of age.

APPENDIX B

Detailed Urban/Rural Tables for Non-Dental Providers, 1989/1992

INDIVIDUAL PROVIDERS OF SERVICES FOR CHILDREN BY TYPE
COUNT, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, INNER URBAN COUNTIES,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE 1992

Individual Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served
Pediatrician	2,509	$26,823	213	367	$50,178	369	529	$23,612	317	155	$37,796	299
Other Primary	7,972	$12,257	106	1,084	$10,497	86	3,211	$5,093	91	284	$13,365	75
General Practitioners	2,431	12,642	158	291	9,813	192	1,585	6,224	134	46	7,841	107
Family Practitioners	1,852	10,639	137	128	12,024	115	264	4,865	92	52	6,746	107
Internists	1,791	3,337	49	414	1,704	20	940	1,291	24	107	1,894	22
Ob/Gyn	1,898	21,759	65	251	25,014	58	422	9,459	75	79	36,476	109
Other Physician	20,104	$6,064	82	1,754	$7,788	68	2,881	$3,484	70	846	$ 8,186	84
Other Individual	4,659	$4,681	47	359	$11,977	44	1,109	$1,619	26	111	$15,525	223

INSTITUTIONAL PROVIDERS OF SERVICES FOR CHILDREN BY TYPE, COUNT, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, INNER URBAN COUNTIES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE 1989

Institutional Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served
Outpatient Department	1,669	$36,373	308	21	$351,315	1,482	41	$389,389	2,257	***	na	na
Clinic	785	34,307	161	20	55,287	797	122	25,768	453	***	na	na
Other Providers	3,195**	16,117	104	111	16,153	130	172	15,588	226	***	na	na

* Other providers are predominantly labs, home health agencies, etc.
** Includes 27 other/institutional unknowns which are most likely school clinics.

na = not applicable in Tennessee; no counties meet the "inner urban" definitions.

INSTITUTIONAL PROVIDERS OF SERVICES FOR CHILDREN BY TYPE, COUNT, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, INNER URBAN COUNTIES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE 1992

Institutional Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served
Outpatient Department	3,614	$48,599	410	30	$821,801	3,193	68	$472,991	2,067	11	$1,247,349	3,612
Clinic	1,847*	41,118	198	100	63,799	722	283**	53,809	206	119	43,522	446
Other Providers***	5,048	17,291	133	270	34,996	221	466	28,047	250	67	48,492	157

* Includes 34 school-based clinics. Their mean dollar of services provided to children equaled $6,103.

** Includes 2 school districts (unknown number of schools). Their mean dollar of services provided to children equaled $1.7 million.

*** Other providers are largely labs, home health agencies, etc.

INDIVIDUAL PROVIDERS OF SERVICES FOR CHILDREN BY TYPE,
COUNT, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, NON-INNER URBAN COUNTIES,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE
1989

Individual Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served
Pediatrician	683	$20,702	196	231	$32,332	275	434	$19,556	287	430	$24,697	239
Other Primary	2,566	7,553	69	825	$11,849	60	3,235	$4,814	87	1,263	$7,148	50
General Practitioner	877	6,609	90	157	6,994	83	1,756	5,272	117	235	5,711	76
Family Practitioner	702	5,498	78	189	7,242	94	321	6,047	113	276	4,105	64
Internist	440	1,972	29	278	1,706	17	770	902	22	421	1,316	18
Ob/Gyn	547	16,192	54	201	34,002	68	388	9,481	63	331	18,123	63
Other Physician	5,776	$3,404	49	1349	$5,550	52	2,702	$3,723	77	3,085	$5,641	74
Other Individual	1,480	$2,716	29	212	$5,393	39	1,176	$1,861	31	255	$5,541	76

INDIVIDUAL PROVIDERS OF SERVICES FOR CHILDREN BY TYPE,
COUNT, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, NON-INNER URBAN COUNTIES,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE
1992

Individual Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served
Pediatrician	256	$46,534	440	220	$75,100	571	270	$40,649	424	386	$45,390	392
Other Primary	1,495	15,916	143	1,112	$17,640	150	2,367	$9,145	137	1,294	$11,492	85
General Practitioner	492	13,571	199	285	14,774	288	1,385	9,624	180	240	12,675	174
Family Practitioner	430	11,116	152	301	12,038	164	285	10,255	139	296	10,601	119
Internist	271	4,201	68	278	2,781	40	436	1,620	32	430	1,775	29
Ob/Gyn	302	37,083	105	248	44,390	96	261	17,964	83	330	24,090	64
Other Physician	3,124	$10,214	157	1,437	$ 8,961	98	1,866	$5,737	115	2,970	$8,548	98
Other Individual	944	$5,989	73	336	$14,658	73	788	$3,067	48	273	$7,213	91

INSTITUTIONAL PROVIDERS OF SERVICES FOR CHILDREN BY TYPE,
COUNT, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, NON-INNER URBAN COUNTIES,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE
1989

Institutional Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served
Outpatient Department	710	$32,018	319	45	$275,977	1,446	70	$264,803	1,822	65	$315,196	1,580
Clinic	473	22,552	136	68	477,145	640	270	33,464	394	402	33,038	235
Other Providers*	11**	4,703	110	307	10,184	96	532	14,812	161	346	16,439	123

* Other providers are largely labs, home health agencies, etc.

** Includes 11 other/insitutional unknowns which are most likely school clinics.

INSTITUTIONAL PROVIDERS OF SERVICES FOR CHILDREN BY TYPE,
COUNT, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, NON-INNER URBAN COUNTIES,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE
1992

Institutional Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served
Outpatient Department	647	$58,896	596	43	$553,893	2,611	61	$494,818	2,560	62	$574,087	2,180
Clinic	541*	54,882	339	124	65,079	679	412**	54,042	318	506	45,365	271
Other Providers***	1,112	11,784	75	310	13,905	90	438	36,318	144	398	53,401	161

* Includes 9 school-based clinics. Their mean dollar of services provided to children equaled $8,794.

** Includes 3 school districts (unknown number of schools). Their mean dollar of services provided to children equaled $1.5 million.

*** Other providers are largely labs, home health agencies, etc.

INDIVIDUAL PROVIDERS OF SERVICES FOR CHILDREN BY TYPE,
COUNT, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, SUBURBAN COUNTIES,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

Individual Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served
Pediatrician	63	$32,292	375	70	$44,051	389	23	$28,630	457	42	$53,346	596
Other Primary	414	$ 8,747	96	390	$13,687	84	488	$ 6,750	130	323	$11,419	102
General Practitioner	126	9,460	158	67	11,960	132	347	6,717	148	109	12,036	118
Family Practitioner	136	6,320	98	126	10,369	111	41	6,721	122	117	10,467	132
Internist	84	1,421	23	107	2,944	39	67	2,340	67	52	1,719	28
Ob/Gyn	68	21,328	66	90	32,389	64	33	16,084	78	45	23,634	67
Other Physician	586	$ 5,706	85	455	$6,549	65	242	$4,800	111	446	$ 5,836	90
Other Individual	273	$ 2,927	37	118	$5,604	41	180	$1,852	41	84	$ 7,175	82

INDIVIDUAL PROVIDERS OF SERVICES FOR CHILDREN BY TYPE,
COUNT, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, SUBURBAN COUNTIES,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Individual Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served
Pediatrician	37	$54,329	633	82	$99,752	868	27	$19,842	244	56	$81,893	870
Other Primary	309	$11,228	92	742	$18,878	160	417	$10,873	179	382	$19,793	163
General Practitioners	92	11,612	153	219	14,912	237	305	11,360	212	129	18,646	201
Family Practitioners	81	8,197	79	225	15,439	190	35	13,215	159	132	22,028	222
Internists	68	1,945	36	170	3,864	60	56	2,614	47	73	2,957	34
Ob/Gyn	68	23,603	81	128	51,651	115	21	21,934	89	48	42,335	98
Other Physician	493	$ 7,997	129	632	$10,145	112	241	$5,901	118	452	$10,109	137
Other Individual	229	$ 4,189	55	206	$16,112	80	151	$2,060	47	120	$10,123	124

INSTITUTIONAL PROVIDERS OF SERVICES FOR CHILDREN BY TYPE,
COUNT, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, SUBURBAN COUNTIES,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE 1989

Institutional Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served
Outpatient Department	120	$43,508	474	39	$123,338	746	28	$108,496	911	36	$105,609	765
Clinic	140	25,106	199	64	34,378	447	102	19,549	203	173	18,379	160
Other Providers*	276**	368	30	221	8,945	98	101	2,003	19	124	6,406	30

* Other providers are predominantly labs, home health agencies, etc.

** Includes 4 other/institutional unknowns which are most likely school clinics.

INSTITUTIONAL PROVIDERS OF SERVICES FOR CHILDREN BY TYPE, COUNT, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, SUBURBAN COUNTIES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE 1992

Institutional Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served
Outpatient Department	81	$91,096	781	44	$271,734	1,490	20	$245,709	1,491	41	$222,592	1221
Clinic	180*	44,457	267	109	53,190	518	103**	37,787	236	160	36,875	306
Other Providers***	248	3,289	24	264	10,347	104	93	5,716	23	186	9,300	49

* Includes 3 school-based clinics. Their mean dollars of services provided to children equaled $489.

** Includes 1 school district (unknown number of school). Their mean dollars of services provided to children equaled $2119.

*** Other providers are largely labs, home health agencies, etc.

INDIVIDUAL PROVIDERS OF SERVICES FOR CHILDREN BY TYPE,
COUNT, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, RURAL COUNTIES,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

Individual Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served
Pediatrician	14	$3,165	64	31	$67,083	549	25	$23,905	310	28	$46,511	414
Other Primary	114	$4,474	41	474	$16,333	126	590	$6,395	127	272	$15,225	151
General Practitioner	48	3,276	43	117	17,418	177	369	6,479	148	120	12,236	150
Family Practitioner	39	3,621	42	197	13,449	148	80	8,116	163	77	19,443	219
Internists	14	494	7	100	3,024	40	95	1,551	42	46	5,011	63
Ob/Gyn	13	15,745	63	60	45,862	95	46	12,737	72	29	32,594	114
Other Physician	118	$3,139	51	282	$9,149	95	332	$3,969	93	273	$5,142	91
Other Individual	55	$2,264	31	93	$6,075	55	180	1,852	41	83	$5,639	72

INDIVIDUAL PROVIDERS OF SERVICES FOR CHILDREN BY TYPE,
COUNT, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, RURAL COUNTIES,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Individual Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served	Count	Mean $ Paid	Mean # of Recipients Served
Pediatrician	9	$8,727	122	26	$138,144	1001	39	$36,789	443	27	$102,630	628
Other Primary	65	$5,962	55	501	$20,632	206	701	$9,296	153	234	$21,894	190
General Practitioners	22	5,894	76	170	14,896	237	447	9,077	177	93	16,392	205
Family Practitioners	22	10,724	82	206	20,107	241	99	12,927	216	68	24,594	261
Internists	68	1,945	36	82	4,914	75	104	1,787	26	45	2,957	34
Ob/Gyn	9	2,207	9	43	75,792	169	51	19,479	84	28	60,061	138
Other Physician	80	$4,385	94	204	$12,628	159	381	$4,570	92	283	$8,598	145
Other Individual	42	$3,746	45	67	$7,675	111	235	$2,619	51	56	$9,995	123

INSTITUTIONAL PROVIDERS OF SERVICES TO CHILDREN BY TYPE, COUNT, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, RURAL COUNTIES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

Institutional Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Billed	Mean # of Recipients Served	Count	Mean $ Billed	Mean # of Recipients Served	Count	Mean $ Billed	Mean # of Recipients Served	Count	Mean $ Billed	Mean # of Recipients Served
Outpatient Department	48	$17,564	193	56	$91,854	547	42	$77,382	684	37	$80,568	586
Clinic	47	9,264	76	109	22,504	341	211	11,863	121	179	13,272	159
Other Providers*	65**	1,404	5	313	6,393	53	163	4,431	41	114	2,216	10

* Other providers are predominantly labs, home health agencies, etc.

** Includes 13 other/institutional unknown which are most likely school clinics.

INSTITUTIONAL PROVIDERS OF SERVICES TO CHILDREN BY TYPE,
COUNT, MEAN DOLLARS PAID AND MEAN RECIPIENTS SERVED, RURAL COUNTIES,
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Institutional Providers	California			Georgia			Michigan			Tennessee		
	Count	Mean $ Billed	Mean # of Recipients Served	Count	Mean $ Billed	Mean # of Recipients Served	Count	Mean $ Billed	Mean # of Recipients Served	Count	Mean $ Billed	Mean # of Recipients Served
Outpatient Department	43	$24,878	241	47	$152,085	911	43	$130,351	920	34	$149,082	810
Clinic	44	28,124	229	125	41,299	487	262	38,136	239	140	24,370	245
Other Providers***	57	7,594	326	286	34,996	221	216	7,084	42	105	4,763	21

*** Other providers are largely labs, home health agencies, etc.

COUNTS AND PERCENT DISTRIBUTION OF PROVIDERS OF SERVICES FOR CHILDREN BY PROVIDER TYPE AND PROVIDERS' DOMINANT PLACE OF SERVICE, INNER URBAN COUNTIES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

Provider Type and Setting	California	Georgia	Michigan	Tennessee
Individual Providers				
All Individual Providers	23,829	1,744	3,445	na
Inpatient	23%	33%	22%	na
Outpatient - Office	63%	47%	46%	na
Outpatient - Other	12%	19%	32%	na
Unknown Setting	1%	1%	1%	na
Pediatrician	1,877	186	232	na
Inpatient	33%	33%	20%	na
Outpatient - Office	63%	52%	53%	na
Outpatient - Other	4%	15%	27%	na
Unknown Setting	<1%	-	<1%	na
Other Primary	5,948	470	1,473	na
Inpatient	18%	19%	20%	na
Outpatient - Office	78%	58%	53%	na
Outpatient - Other	3%	22%	27%	na
Unknown Setting	<1%	1%	<1%	na
Other Physician	12,887	953	1,236	na
Inpatient	29%	44%	24%	na
Outpatient - Office	49%	37%	39%	na
Outpatient - Other	20%	17%	35%	na
Unknown setting	2%	2%	2%	na
Other Individual	3,117	135	504	na
Inpatient	<1%	4%	25%	na
Outpatient - Office	94%	70%	43%	na
Outpatient - Other	5%	25%	31%	na
Unknown setting	<1%	-	<1%	
Institutional Providers				
All Institutional	2,454	41	163	na
Outpatient Department	1,669	21	41	na
Clinic	785	20	122	na

* Each individual provider was assigned one place of service category based on the place of service for the majority of claims submitted.

** California's unknown count includes 27 other/unknown institutions which are most likely school clinics.

na = not applicable in Tennessee; no counties meet the "inner urban" definitions.

COUNT AND PERCENT DISTRIBUTION OF PROVIDERS OF SERVICES TO CHILDREN BY PROVIDER TYPE AND USUAL PLACE OF SERVICE, INNER URBAN
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Provider Type and Setting	California	Georgia	Michigan	Tennessee
Individual Provider				
All Individual Providers	35,244	3,564	7,730	1,396
Inpatient	24%	26%	20%	26%
Outpatient - Office	58%	47%	44%	48%
Outpatient - Other	17%	26%	35%	25%
Clinic	0%	3%	<1%	0%
OPD/ER	13%	19%	32%	23%
Other Amb	4%	4%	3%	2%
Unknown setting	1%	<1%	<1%	1%
Pediatrician	2,509	367	529	155
Inpatient	35%	26%	25%	35%
Outpatient - Office	60%	53%	52%	57%
Outpatient - Other	5%	21%	23%	8%
Clinic	0%	0%	0%	0%
OPD/ER	5%	16%	23%	<1%
Other Amb	<1%	5%	0%	7%
Unknown setting	<1%	0%	0%	0%
Other Primary	7,972	1,084	3,211	284
Inpatient	21%	20%	19%	30%
Outpatient - Office	75%	51%	51%	54%
Outpatient - Other	3%	28%	29%	15%
Clinic	0%	<1%	<1%	0%
OPD/ER	3%	27%	29%	14%
Other Amb	<1%	1%	0%	1%
Unknown setting	1%	<1%	<1%	<1%
Other Physician	20,104	1,754	2,881	846
Inpatient	29%	34%	21%	26%
Outpatient - Office	44%	41%	38%	38%
Outpatient - Other	26%	22%	39%	35%
Clinic	0%	6%	0%	0%
OPD/ER	21%	16%	39%	34%
Other Amb	5%	<1%	<1%	1%
Unknown setting	2%	1%	2%	2%
Other Individual	4,659	359	1,109	111
Inpatient	1%	8%	21%	0%
Outpatient - Office	93%	58%	37%	98%
Outpatient - Other	5%	33%	42%	2%
Clinic	0%	<1%	<1%	0%
OPD/ER	<1%	8%	24%	0%
Other Amb	5%	25%	18%	2%
Unknown setting	<1%	<1%	<1%	0%

COUNT AND PERCENT DISTRIBUTION OF PROVIDERS OF SERVICES TO CHILDREN BY PROVIDER TYPE AND USUAL PLACE OF SERVICE, INNER URBAN
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Provider Type and Setting	California	Georgia	Michigan	Tennessee
Individual Provider				
Institutional Provider				
All	4,690	130	351	130
OPD/ER	2,843	30	68	11
Clinic	1,847*	100	283**	119
Rural Health	166	1	-	-
FQHC	370	5	23	4
Public Health	-	50	37	24
Other Clinic	1,311*	44	223**	91

* Includes 34 school-based clinics. Their mean dollar of services provided to children equaled $6,103.
** Includes 2 school districts (unknown number of schools). Their mean dollar of services provided to children equaled $1.7 million.

COUNTS AND PERCENT DISTRIBUTION OF PROVIDERS OF SERVICES FOR CHILDREN BY PROVIDER TYPE AND PROVIDERS' DOMINANT PLACE OF SERVICE, NON-INNER URBAN COUNTIES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

Provider Type and Setting	California	Georgia	Michigan	Tennessee
Individual Providers				
All Individual Providers	10,505	2,617	7,547	5,033
Inpatient	21%	24%	16%	25%
Outpatient - Office	63%	51%	56%	51%
Outpatient - Other	15%	17%	27%	23%
Unknown setting	2%	4%	1%	1%
Pediatrician	656	231	434	430
Inpatient	23%	21%	21%	23%
Outpatient - Office	75%	67%	67%	64%
Outpatient - Other	2%	12%	12%	13%
Unknown setting	<1%	-	<1%	<1%
Other Primary	2,593	825	3,235	1,263
Inpatient	19%	24%	15%	25%
Outpatient - Office	77%	61%	62%	66%
Outpatient - Other	37%	15%	22%	8%
Unknown setting	1%	<1%	1%	<1%
Other Physician	5,776	1,349	2,702	3,085
Inpatient	26%	32%	18%	28%
Outpatient - Office	48%	45%	48%	39%
Outpatient - Other	24%	22%	31%	31%
Unknown setting	2%	1%	3%	2%
Other Individual	1,480	212	1,176	255
Inpatient	1%	5%	13%	<1%
Outpatient - Office	93%	76%	50%	96%
Outpatient - Other	5%	19%	37%	<1%
Unknown setting	-	-	<1%	-
Institutional Providers				
All Institutional	1,183	113	340	467
Outpatient Department	710	45	70	65
Clinic	473	68	270	402

* Each individual provider was assigned one place of service category based on the place of service for the majority of claims submitted.
** California's unknown count includes 11 other/unknown institutions which are most likely school clinics.

COUNTS AND PERCENT DISTRIBUTION OF PROVIDERS OF SERVICES FOR CHILDREN BY PROVIDER TYPE AND USUAL PLACE OF SERVICE, NON-INNER URBAN COUNTIES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Provider Type and Setting	California	Georgia	Michigan	Tennessee
Individual Providers				
All Individual Providers	5,819	3,105	5,291	4,923
Inpatient	18%	19%	12%	21%
Outpatient - Office	62%	54%	58%	54%
Outpatient - Other	18%	26%	29%	23%
Clinic	0%	3%	0%	0%
OPD/ER	15%	21%	24%	22%
Other Amb	3%	2%	5%	1%
Unknown setting	1%	< 1%	1%	1%
Pediatrician	256	220	270	386
Inpatient	27%	26%	23%	18%
Outpatient - Office	70%	55%	70%	64%
Outpatient - Other	4%	19%	7%	17%
Clinic	0%	0%	0%	0%
OPD/ER	4%	17%	7%	2%
Other Amb	0%	2%	0%	15%
Unknown setting	0%	0%	0%	< 1%
Other Primary	1,495	1,112	2,367	1,294
Inpatient	20%	15%	12%	16%
Outpatient - Office	75%	56%	66%	70%
Outpatient - Other	5%	28%	21%	14%
Clinic	0%	28%	0%	0%
OPD/ER	5%	< 1%	21%	13%
Other Amb	< 1%	< 1%	0%	1%
Unknown setting	0%	0%	0%	< 1%
Other Physician	3,124	1,437	1,866	2,970
Inpatient	22%	23%	13%	25%
Outpatient - Office	46%	48%	51%	42%
Outpatient - Other	32%	27%	34%	31%
Clinic	0%	6%	0%	0%
OPD/ER	26%	21%	34%	31%
Other Amb	6%	< 1%	0%	< 1%
Unknown setting	1%	1%	1%	2%
Other Individual	944	336	788	273
Inpatient	1%	3%	4%	0%
Outpatient - Office	95%	75%	43%	99%
Outpatient - Other	3%	22%	51%	1%
Clinic	0%	1%	0%	0%
OPD/ER	1%	4%	17%	1%
Other Amb	2%	17%	34%	0%
Unknown setting	< 1%	0%	1%	< 1%

B-10-92 (CONTINUED)

COUNTS AND PERCENT DISTRIBUTION OF PROVIDERS OF SERVICES FOR CHILDREN BY PROVIDER TYPE AND USUAL PLACE OF SERVICE, NON-INNER URBAN COUNTIES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Provider Type and Setting	California	Georgia	Michigan	Tennessee
Individual Providers				
Institutional Providers				
All	1,188	167	473	568
OPD/ER	647	43	61	62
Clinic	541*	124	412**	506
Rural Health	119	6	4	2
FQHC	117	3	112	15
Public Health	-	63	19	37
Other Clinic	305	52	274**	452

* Includes 9 school-based clinics. Their mean dollar of service provided to children equaled $8,794.
** Includes 3 school districts (unknown number of schools). Their mean dollar of services provided to children equaled $1.5 million.

COUNT AND PERCENT DISTRIBUTION OF PROVIDERS OF SERVICES TO CHILDREN BY PROVIDER TYPE AND PROVIDERS' DOMINANT PLACE OF SERVICE, SUBURBAN COUNTIES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

Provider Type and Setting	California	Georgia	Michigan	Tennessee
Individual Providers				
All Individual	1,335	1,033	933	895
Inpatient	12%	13%	6%	12%
Outpatient - Office	72%	73%	60%	62%
Outpatient - Other	15%	13%	33%	26%
Unknown setting	<1%	<1%	1%	<1%
Pediatrician	57	70	23	41
Inpatient	14%	3%	-	-
Outpatient - Office	84%	96%	100%	78%
Outpatient - Other	2%	1%	7%	22%
Unknown setting	-	-	-	-
Other Primary	419	390	488	324
Inpatient	13%	13%	5%	8%
Outpatient - Office	82%	83%	65%	87%
Outpatient - Other	4%	4%	30%	5%
Unknown setting	<1%	<1%	<1%	<1%
Other Physician	586	455	242	446
Inpatient	15%	17%	8%	17%
Outpatient - Office	55%	59%	56%	36%
Outpatient - Other	28%	22%	34%	46%
Unknown setting	-	1%	2%	1%
Other Individual	273	118	180	84
Inpatient	2%	4%	9%	1%
Outpatient - Office	92%	81%	46%	98%
Outpatient - Other	6%	14%	44%	1%
Unknown setting	-	<1%	<1%	-
Institutional Providers				
All Institutional	260	103	130	209
Outpatient Department	120	39	28	36
Clinic	140	64	102	173

* Each individual provider was assigned one usual place of service category based on the place of service for the majority of claims submitted.

** California's unknown count includes 43 other unknown institutions which are most likely school clinics.

COUNT AND PERCENT DISTRIBUTION OF PROVIDERS OF SERVICES TO CHILDREN BY PROVIDER TYPE AND USUAL PLACE OF SERVICE, SUBURBAN COUNTIES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Provider Type and Setting	California	Georgia	Michigan	Tennessee
Individual Providers				
All Individual	1,068	1,662	836	1,010
Inpatient	11%	9%	5%	7%
Outpatient - Office	68%	64%	60%	67%
Outpatient - Other	20%	27%	34%	26%
Clinic	0%	3%	0%	0%
OPD/ER	13%	22%	28%	24%
Other Amb	7%	2%	6%	2%
Unknown setting	1%	<1%	1%	<1%
Pediatrician	37	82	27	56
Inpatient	14%	4%	0%	0%
Outpatient - Office	86%	89%	100%	85%
Outpatient - Other	0%	7%	0%	16%
Clinic	0%	0%	0%	0%
OPD/ER	0%	5%	0%	0%
Other Amb	0%	2%	0%	16%
Unknown setting	0%	0%	0%	0%
Other Primary	309	742	417	382
Inpatient	13%	7%	4%	8%
Outpatient - Office	81%	61%	66%	84%
Outpatient - Other	5%	32%	30%	8%
Clinic	0%	<1%	0%	0%
OPD/ER	5%	32%	30%	6%
Other Amb	0%	0%	0%	2%
Unknown setting	1%	0%	0%	<1%
Other Physician	493	632	241	452
Inpatient	14%	12%	8%	9%
Outpatient - Office	48%	60%	58%	41%
Outpatient - Other	37%	27%	32%	50%
Clinic	0%	8%	0%	0%
OPD/ER	24%	19%	32%	50%
Other Amb	13%	0%	0%	0%
Unknown setting	1%	<1%	2%	1%
Other Individual	229	206	151	120
Inpatient	1%	8%	5%	0%
Outpatient - Office	91%	77%	39%	100%
Outpatient - Other	7%	15%	54%	0%
Clinic	0%	<1%	0%	0%
OPD/ER	3%	<1%	21%	0%
Other Amb	4%	14%	33%	0%
Unknown setting	0%	0%	1%	0%

B-11-92 (CONTINUED)

COUNT AND PERCENT DISTRIBUTION OF PROVIDERS OF SERVICES TO CHILDREN BY PROVIDER TYPE AND USUAL PLACE OF SERVICE, SUBURBAN COUNTIES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Provider Type and Setting	California	Georgia	Michigan	Tennessee
Individual Providers				
Institutional Providers				
All	267	172	123	201
OPD/ER	87	47	20	41
Clinic	180*	125	103**	160
Rural Health	88	7	16	5
FQHC	17	4	7	14
Public Health	-	98	12	40
Other Clinic	75***	16	68***	101

* Includes 3 school-based clinics. Their mean dollar of services provided to children equaled $489.
** Includes 1 school district (unknown number of school). Their mean dollars of services provided to children equaled $2,119.
*** Other provided are largely labs, home health agencies, etc.

COUNT AND PERCENT DISTRIBUTION OF PROVIDERS OF SERVICES TO CHILDREN BY PROVIDER TYPE AND PROVIDERS' DOMINANT PLACE OF SERVICE, RURAL COUNTIES
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989

Provider Type and Setting	California	Georgia	Michigan (Recipient)	Tennessee
Individual Provider				
All Individual Providers	301	858	1,183	656
Inpatient	14%	12%	7%	9%
Outpatient - Office	70%	80%	61%	69%
Outpatient - Other	16%	9%	31%	22%
Unknown setting	<1%	-	1%	<1%
Pediatrician	14	31	25	26
Inpatient	14%	10%	-	4%
Outpatient - Office	86%	90%	96%	92%
Outpatient - Other	-	-	4%	4%
Unknown setting	-	-	-	-
Other Primary	114	454	590	274
Inpatient	13%	8%	5%	5%
Outpatient - Office	83%	92%	68%	93%
Outpatient - Other	3%	-	26%	2%
Unknown setting	<1%	-	-	-
Other Physician	118	280	332	273
Inpatient	17%	20%	38%	16%
Outpatient - Office	48%	57%	57%	33%
Outpatient - Other	35%	23%	34%	50%
Unknown setting	-	-	<1%	<1%
Other Individual	58	93	236	83
Inpatient	7%	5%	8%	-
Outpatient - Office	81%	85%	46%	100%
Outpatient - Other	7%	10%	44%	-
Unknown setting	-	-	2%	-
Institutional Provider				
All Institutional	95	165	253	216
Outpatient Department	48	56	42	37
Clinic	47	109	211	179

* Each individual provider was assigned a place of service category based on the place of service for the majority of claims submitted.
** California's unknown count includes one other/unknown institution which is most likely a school clinic.

COUNT AND PERCENT DISTRIBUTION OF PROVIDERS OF SERVICES TO CHILDREN BY PROVIDER TYPE AND USUAL PLACE OF SERVICE, RURAL COUNTIES
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Provider Type and Setting	California	Georgia	Michigan (Recipient)	Tennessee
Individual Provider				
All Individual Providers	196	798	1,356	600
Inpatient	14%	4%	7%	7%
Outpatient - Office	61%	69%	59%	59%
Outpatient - Other	23%	27%	33%	34%
Clinic	0%	2%	0%	0%
OPD/ER	17%	24%	27%	33%
Other Amb	6%	1%	6%	1%
Unknown setting	2%	< 1%	< 1%	< 1%
Pediatrician	9	26	39	27
Inpatient	44%	0%	8%	0%
Outpatient - Office	56%	100%	87%	89%
Outpatient - Other	0%	0%	5%	11%
Clinic	0%	0%	0%	0%
OPD/ER	0%	0%	5%	4%
Other Amb	0%	0%	0%	7%
Unknown setting	0%	0%	0%	0%
Other Primary	65	501	701	234
Inpatient	17%	3%	6%	4%
Outpatient - Office	75%	66%	66%	80%
Outpatient - Other	5%	31%	28%	15%
Clinic	0%	< 1%	0%	0%
OPD/ER	5%	30%	28%	14%
Other Amb	0%	< 1%	0%	1%
Unknown setting	3%	< 1%	< 1%	< 1%
Other Physician	80	204	381	283
Inpatient	13%	7%	11%	12%
Outpatient - Office	43%	63%	54%	30%
Outpatient - Other	45%	60%	35%	58%
Clinic	0%	11%	0%	0%
OPD/ER	31%	47%	35%	58%
Other Amb	14%	2	0%	0%
Unknown setting	0%	0%	1%	0%
Other Individual	42	67	235	56
Inpatient	5%	0%	5%	0%
Outpatient - Office	76%	96%	43%	100%
Outpatient - Other	16%	4%	51%	0%
Clinic	0%	1%	0%	0%
OPD/ER	14%	0%	14%	0%
Other Amb	2%	3%	37%	0%
Unknown setting	2%	0%	0%	0%

B-12-92 (CONTINUED)

COUNT AND PERCENT DISTRIBUTION OF PROVIDERS OF SERVICES TO CHILDREN BY PROVIDER TYPE AND USUAL PLACE OF SERVICE, RURAL COUNTIES
CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992

Provider Type and Setting	California	Georgia	Michigan (Recipient)	Tennessee
Individual Provider				
Institutional Provider				
All	87	172	305	174
OPD/ER	43	47	43	34
Clinic	44	125	262	140
Rural Health	15	7	20	6
FQHC	2	4	64	25
Public Health	-	98	28	26
Other Clinic	27	16	150	83

APPENDIX C

Detailed Tables for Dental Providers, 1989/1992

TABLE C-1-89

NUMBER OF DENTAL PROVIDERS BY TYPE, BASED ON SERVICE CATEGORY

1989

Dental Provider Type	California	Georgia	Michigan	Tennessee
Total Non-institutional dental providers*	7,888	1,003	2,271	1,099
Dentists Providing Services to Medicaid Enrollees	7,698	1,003	1,994	1,096
Dentists Providing Services to Medicaid-Enrolled Children	5,584	933	1,841	1,083
Dentists Providing Diagnostic Services to Medicaid-Enrolled Children	5,179	914	1,800	1,012
Dentists Providing Preventive Services to Medicaid-Enrolled Children	4,794	832	1,667	922
Dentists Providing Therapeutic Services to Medicaid-Enrolled Children	4,612	880	1,682	959

*Includes individual and other/unknown dental providers. These providers were identified on claims but were not found in the provider file.

TABLE C-1-92

NUMBER OF DENTAL PROVIDERS BY TYPE, BASED ON SERVICE CATEGORY

1992

Dental Provider Type	California	Georgia	Michigan	Tennessee
Total Non-institutional dental providers*	7,620	981	2,009	1,132
Dentists Providing Services to Medicaid Enrollees	6,029	981	1,965	1,131
Dentists Providing Services to Medicaid-Enrolled Children	4,603	955	1,823	1,116
Dentists Providing Diagnostic Services to Medicaid-Enrolled Children	4,373	934	1,769	1,028
Dentists Providing Preventive Services to Medicaid-Enrolled Children	3,961	854	1,646	919
Dentists Providing Therapeutic Services to Medicaid-Enrolled Children	3,976	908	1,656	966

*Includes individual and other/unknown dental providers. These providers were identified on claims but were not found in the provider file.

TABLE C-2-89

NUMBER OF DENTAL PROVIDERS SERVING MEDICAID-ENROLLED CHILDREN BY TYPE, BASED ON SERVICE CATEGORY

1989

Dental Provider Type	Providing Diagnostic, Preventive, or Therapeutic Services				Providing Emergency Services				Providing Orthodontic Services				Providing Other Services			
	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN
Total Dental Providers	5,717	933	2,100	1,107	2,025	423	1,271	508	78	1	36	166	8	1	2,100	95
Total Individual Dentists	5,529	933	1,834	1,051	1,940	423	1,115	480	74	1	11	164	7	1	1,834	94
General Dentists	5,529	933	1,834	980	1,940	423	1,115	439	74	1	11	164	7	1	1,834	69
Oral Surgeons	0	0	0	71	0	0	0	41	0	0	0	0	0	0	0	25
Total Institutional Dental Providers	0	0	16	53	0	0	6	26	0	0	0	2	0	0	16	1
Dental Clinics	0	0	16	53	0	0	6	26	0	0	0	2	0	0	16	1
Other Clinics	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other/Unknown*	188	0	250	3	85	0	150	2	4	0	25	0	1	0	250	0

* These providers were identified on claims but were not found in the provider file.

TABLE C-2-92

NUMBER OF DENTAL PROVIDERS SERVING MEDICAID-ENROLLED CHILDREN BY TYPE, BASED ON SERVICE CATEGORY

1992

Dental Provider Type	Providing Diagnostic, Preventive, or Therapeutic Services				Providing Emergency Services				Providing Orthodontic Services				Providing Other Services			
	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN
Total Dental Providers	6,130	954	1,869	1,123	2,313	385	1,180	560	298	6	42	166	154	0	38	96
Total Individual Dentists	4,577	954	1,812	1,071	1,707	385	1,148	533	93	6	10	164	33	0	2	95
General Dentists	4,577	954	1,812	981	1,707	385	1,148	487	93	6	10	164	33	0	2	60
Oral Surgeons	0	0	0	90	0	0	0	46	0	0	0	2	0	0	0	35
Total Institutional Dental Providers	0	0	44	51	0	0	24	26	0	0	0	2	108	0	36	1
Dental Clinics	0	0	8	41	0	0	2	25	0	0	0	2	0	0	0	1
Other Clinics	0	0	36	10	0	0	22	1	0	0	0	0	108	0	36	0
Other/Unknown*	1,553	0	13	1	606	0	8	1	205	0	0	0	13	0	0	0

* These providers were identified on claims but were not found in the provider file.

TABLE C-3-89

PROVIDERS OF CHILDREN'S DENTAL SERVICES, BASED ON INDIVIDUAL/INSTITUTIONAL CATEGORIZATION, MEAN AMOUNT PAID AND MEAN RECIPIENTS SERVED ALL SERVICES

1989

Dental Provider Type	Counts				Mean Amount Paid				Mean Recipients Served			
	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN
Individual Dentists												
Total	5,584	933	1,841	1,083	6,636	13,482	5,989	9,887	77	117	86	79
General Dentistry	5,584	933	1,841	1,012	6,636	13,482	5,989	10,199	77	117	86	83
Oral Surgeons	0	0	0	71	--	--	--	5,440	--	--	--	20
Institutional Dental Providers												
Total	0	0	16	53	--	--	7,502	20,957	--	--	129	217
Dental Clinics	0	0	16	53	--	--	7,502	20,957	--	--	129	217
Other Clinics	0	0	0	0	--	--	--	--	--	--	--	--
*Other/Unknown**	190	0	277	3	6,581	--	4,964	1,506	93	--	71	--

* These providers were identified on claims but were not found in the provider file.

TABLE C-3-92

PROVIDERS OF CHILDREN'S DENTAL SERVICES, BASED ON INDIVIDUAL/INSTITUTIONAL CATEGORIZATION, MEAN AMOUNT PAID AND MEAN RECIPIENTS SERVED ALL SERVICES

1992

Dental Provider Type	Counts				Mean Amount Paid				Mean Recipients Served			
	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN
Individual Dentists												
Total	4,603	955	1,823	1,116	17,006	23,467	7,707	15,994	109	189	101	129
General Dentistry	4,603	955	1,823	1,025	17,006	23,467	7,707	16,654	109	189	101	138
Oral Surgeons	0	0	0	91	--	--	--	8,569	--	--	--	30
Institutional Dental Providers												
Total	108	0	44	52	37,189	--	13,823	26,765	249	--	125	255
Dental Clinics	0	0	8	42	--	--	8,492	27,563	--	--	144	256
Other Clinics	108	0	36	10	37,189	--	15,008	23,413	249	--	121	253
*Other/Unknown**	1,593	0	44	3	14,261	--	2,965	16,056	90	--	25	181

* These providers were identified on claims but were not found in the provider file.

TABLE C-4-89

PROVIDERS OF CHILDREN'S DENTAL SERVICES, BASED ON INDIVIDUAL/INSTITUTIONAL CATEGORIZATION, MEAN AMOUNT PAID AND MEAN RECIPIENTS SERVED, DIAGNOSTIC PREVENTIVE, OR THERAPEUTIC SERVICES

1989

Dental Provider Type	Counts				Mean Amount Paid				Mean Recipients Served			
	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN
Individual Dentists												
Total	5,529	933	1,834	1,051	6,696	13,482	6,008	10,014	78	117	86	81
General Dentistry	5,529	933	1,834	980	6,696	13,482	6,008	10,345	78	117	86	85
Oral Surgeons	0	0	0	71	--	--	--	5440	--	--	--	20
Institutional Dental Providers												
Total	0	0	16	53	--	--	7,502	20,957	--	--	129	217
Dental Clinics	0	0	16	53	--	--	7,502	20,957	--	--	129	217
Other Clinics	0	0	0	0	--	--	--	--	--	--	--	--
*Other/Unknown**	188	0	250	3	6,651	--	5,427	1,506	92	--	79	20

* These providers were identified on claims but were not found in the provider file.

TABLE C-4-92

PROVIDERS OF CHILDREN'S DENTAL SERVICES, BASED ON INDIVIDUAL/INSTITUTIONAL CATEGORIZATION, MEAN AMOUNT PAID AND MEAN RECIPIENTS SERVED, DIAGNOSTIC PREVENTIVE, OR THERAPEUTIC SERVICES

1992

Dental Provider Type	Counts				Mean Amount Paid				Mean Recipients Served			
	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN
Individual Dentists												
Total	4,577	954	1,812	1,071	17,099	23,492	7,748	16,036	110	189	102	134
General Dentistry	4,577	954	1,812	981	17,099	23,492	7,748	16,715	110	189	102	143
Oral Surgeons	0	0	0	90	--	--	--	8635	--	--	--	30
Institutional Dental Providers												
Total	0	0	44	51	--	--	13,823	26,658	--	--	125	259
Dental Clinics	0	0	8	41	--	--	8,492	1,293	--	--	144	10
Other Clinics	0	0	36	10	--	--	501	23,413	--	--	4	253
*Other/Unknown**	1,553	0	13	1	14,618	--	6,696	15,056	560	--	80	181

*Includes individual and other/unknown dental providers. These providers were identified on claims but were not found in the provider file.

TABLE C-5-89

PROVIDERS OF CHILDREN'S DENTAL SERVICES, BASED ON INDIVIDUAL/INSTITUTIONAL CATEGORIZATION, MEAN AMOUNT PAID AND MEAN RECIPIENTS SERVED, DIAGNOSTIC SERVICES

1989

Dental Provider Type	Counts				Mean Amount Paid				Mean Recipients Served			
	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN
Individual Dentists												
Total	5,179	914	1,800	1,012	7,141	13,757	6,112	10,321	83	120	88	84
General Dentistry	5,179	914	1,800	945	7,141	13,757	6,112	10,648	83	120	88	88
Oral Surgeons	0	0	0	67	--	--	--	5,710	--	--	--	21
Institutional Dental Providers												
Total	0	0	12	50	--	--	9,836	21,910	--	--	170	230
Dental Clinics	0	0	12	50	--	--	9,836	21,910	--	--	170	230
Other Clinics	0	0	0	0	--	--	--	--	--	--	--	--
*Other/Unknown**	174	0	242	3	7,161	--	5,588	1,506	96	--	81	20

* These providers were identified on claims but were not found in the provider file.

TABLE C-5-92

PROVIDERS OF CHILDREN'S DENTAL SERVICES, BASED ON INDIVIDUAL/INSTITUTIONAL CATEGORIZATION, MEAN AMOUNT PAID AND MEAN RECIPIENTS SERVED, DIAGNOSTIC SERVICES

1992

Dental Provider Type	Counts				Mean Amount Paid				Mean Recipients Served			
	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN
Individual Dentists												
Total	4,373	934	1,769	1,028	17,888	23,980	7,929	16,539	115	193	105	139
General Dentistry	4,373	934	1,769	947	17,888	23,980	7,929	17,141	115	193	105	148
Oral Surgeons	0	0	0	81	--	--	--	9,494	--	--	--	33
Institutional Dental Providers												
Total	0	0	36	48	--	--	16,810	28,160	--	--	152	273
Dental Clinics	0	0	4	38	--	--	16,836	1,450	--	--	286	12
Other Clinics	0	0	32	10	--	--	636	23,413	--	--	5	253
*Other/Unknown**	1,488	0	13	1	15,244	--	6,696	16,056	584	--	80	181

* These providers were identified on claims but were not found in the provider file.

TABLE C-6-89

PROVIDERS OF CHILDREN'S DENTAL SERVICES, BASED ON INDIVIDUAL/INSTITUTIONAL CATEGORIZATION, MEAN AMOUNT PAID AND MEAN RECIPIENTS SERVED, PREVENTIVE SERVICES

1989

Dental Provider Type	Counts				Mean Amount Paid				Mean Recipients Served			
	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN
Individual Dentists												
Total	4,794	832	1,667	922	7,488	14,918	6,454	10,906	88	208	93	152
General Dentistry	4,794	832	1,667	914	7,488	14,918	6,454	10,924	88	208	93	152
Oral Surgeons	0	0	0	8	--	--	--	8,894	--	--	--	27
Institutional Dental Providers												
Total	0	0	9	50	--	--	13,065	22,207	--	--	224	270
Dental Clinics	0	0	9	50	--	--	13,065	22,207	--	--	224	12
Other Clinics	0	0	0	0	--	--	--	--	--	--	--	253
*Other/Unknown**	147	0	220	1	8,095	--	6,054	1,333	117	--	88	181

* These providers were identified on claims but were not found in the provider file.

TABLE C-6-92

PROVIDERS OF CHILDREN'S DENTAL SERVICES, BASED ON INDIVIDUAL/INSTITUTIONAL CATEGORIZATION, MEAN AMOUNT PAID AND MEAN RECIPIENTS SERVED, PREVENTIVE SERVICES

1992

Dental Provider Type	Counts				Mean Amount Paid				Mean Recipients Served			
	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN
Individual Dentists												
Total	3,961	854	1,646	919	19,137	25,734	8,333	17,351	124	208	110	152
General Dentistry	3,961	854	1,646	914	19,137	25,734	8,333	17,400	124	208	110	152
Oral Surgeons	0	0	0	5	--	--	--	8,302	--	--	--	27
Institutional Dental Providers												
Total	0	0	34	49	--	--	17,784	27,741	--	--	161	270
Dental Clinics	0	0	5	39	--	--	13,497	1,398	--	--	230	12
Other Clinics	0	0	29	10	--	--	779	23,413	--	--	6	253
*Other/Unknown**	1,196	0	11	1	17,659	--	7,809	16,056	112	--	94	181

* These providers were identified on claims but were not found in the provider file.

TABLE C-7-89

PROVIDERS OF CHILDREN'S DENTAL SERVICES, BASED ON INDIVIDUAL/INSTITUTIONAL CATEGORIZATION, MEAN AMOUNT PAID AND MEAN RECIPIENTS SERVED, THERAPEUTIC SERVICES

1989

Dental Provider Type	Counts				Mean Amount Paid				Mean Recipients Served			
	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN
Individual Dentists												
Total	4,612	832	1,682	959	8,010	14,918	6,536	10,309	93	130	93	87
General Dentistry	4,612	832	1,682	891	8,010	14,918	6,536	10,663	93	130	93	92
Oral Surgeons	0	0	0	68	--	--	--	5,671	--	--	--	21
Institutional Dental Providers												
Total	0	0	14	49	--	--	8,561	22,357	--	--	147	234
Dental Clinics	0	0	14	49	--	--	8,561	22,357	--	--	147	234
Other Clinics	0	0	0	0	--	--	--	--	--	--	--	--
*Other/Unknown**	166	0	3	3	7,453	--	5,960	1,506	105	--	86	20

* These providers were identified on claims but were not found in the provider file.

TABLE C-7-92

PROVIDERS OF CHILDREN'S DENTAL SERVICES, BASED ON INDIVIDUAL/INSTITUTIONAL CATEGORIZATION, MEAN AMOUNT PAID AND MEAN RECIPIENTS SERVED, THERAPEUTIC SERVICES

1992

Dental Provider Type	Counts				Mean Amount Paid				Mean Recipients Served			
	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN
Individual Dentists												
Total	3,976	854	1,656	966	19,572	25,734	8,456	16,605	126	208	111	146
General Dentistry	3,976	854	1,656	878	19,572	25,734	8,456	17,385	126	208	111	157
Oral Surgeons	0	0	0	88	--	--	--	8,824	--	--	--	31
Institutional Dental Providers												
Total	0	0	44	50	--	--	13,823	27,038	--	--	125	262
Dental Clinics	0	0	8	40	--	--	8,492	1,339	--	--	144	11
Other Clinics	0	0	36	10	--	--	501	23,413	--	--	4	253
*Other/Unknown**	1,269	0	9	1	16,987	--	9,510	16,056	107	--	114	181

*Includes individual and other/unknown dental providers. These providers were identified on claims but were not found in the provider file.

TABLE C-8-89

DENTAL PARTICIPATION RATES, CALIFORNIA, GEORGIA, MICHIGAN, AND TENNESSEE, 1989, BY COUNTY POVERTY LEVEL

Definitions	Percentages			
	California	Georgia	Michigan	Tennessee
All participating dentists as percent of all active dentists in county*				
All Counties	45.6	36.6	39.3	43.3
High Poverty Counties	27.8	100.0^	100.0^	76.7
Medium Poverty Counties	47.9	44.8	42.9	42.9
Low Poverty Counties	41.3	21.0	28.6	41.0
Participating dentists serving Medicaid children as percent of all active dentists in county*				
All Counties	33.4	34.1	36.7	42.7
High Poverty Counties	25.0	100.0^	100.0^	76.7
Medium Poverty Counties	36.9	41.6	39.9	42.3
Low Poverty Counties	27.5	19.2	26.2	41.0
Participating general dentists serving Medicaid children as percent of all active GP and Pedodontists in county*				
All Counties	34.4	35.3	37.7	41.6
High Poverty Counties	27.3	100.0^	100.0^	76.7
Medium Poverty Counties	38.0	43.1	41.0	41.2
Low Poverty Counties	28.4	20.0	27.0	39.0

*Includes individual and other/unknown dental providers
^Capitated at 100.0%

TABLE C-8-92

DENTAL PARTICIPATION RATES, CALIFORNIA, GEORGIA, MICHIGAN, AND TENNESSEE, 1992, BY COUNTY POVERTY LEVEL

Definitions	Percentages			
	California	Georgia	Michigan	Tennessee
All participating dentists as percent of all active dentists in county*				
All Counties	45.5	43.7	34.0	43.8
High Poverty Counties	39.1	100.0^	100.0^	66.7
Medium Poverty Counties	41.2	47.6	41.7	43.8
Low Poverty Counties	30.7	31.5	26.3	39.0
Participating dentists serving Medicaid children as percent of all active dentists in county*				
All Counties	37.0	42.5	31.6	43.2
High Poverty Counties	30.4	100.0^	100.0^	66.7
Medium Poverty Counties	33.2	46.3	38.5	43.3
Low Poverty Counties	21.6	30.7	24.5	38.5
Participating general dentists serving Medicaid children as percent of all active GP and Pedodontists in county*				
All Counties	38.0	44.5	32.5	41.3
High Poverty Counties	33.3	100.0^	100.0^	66.7
Medium Poverty Counties	34.1	48.4	39.4	41.2
Low Poverty Counties	22.2	32.3	25.2	36.7

*Includes individual and other/unknown dental providers
^Capitated at 100.0%

TABLE C-9-89

DENTAL PARTICIPATION RATES BASED ON MINIMUM DOLLAR VOLUMES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1989, BY COUNTY POVERTY LEVEL**

Definitions	Percentages			
	California	Georgia	Michigan	Tennessee
All participating dentists as percent of all active dentists in county*				
All Counties	20.8	27.6	22.5	26.2
High Poverty Counties	19.4	100.0^	100.0^	69.8
Medium Poverty Counties	25.0	34.6	29.3	25.8
Low Poverty Counties	15.0	13.5	15.9	21.9
Participating dentists serving Medicaid children as percent of all active dentists in county*				
All Counties	19.9	27.3	22.1	26.2
High Poverty Counties	16.7	100.0^	100.0^	69.8
Medium Poverty Counties	24.2	34.3	28.7	25.8
Low Poverty Counties	14.1	13.3	15.4	21.9
Participating general dentists serving Medicaid children as percent of all active GP and Pedodontists in county*				
All Counties	12.6	24.3	19.2	24.8
High Poverty Counties	18.2	90.0	100.0^	69.8
Medium Poverty Counties	15.2	30.6	23.6	24.3
Low Poverty Counties	8.6	11.5	11.7	20.9

** Amount paid by Medicaid in 1989 was at least $1,600 and amount paid by Medicaid in 1992 was at least $1,900.
* Includes individual and other/unknown dental providers

TABLE C-9-92

DENTAL PARTICIPATION RATES BASED ON MINIMUM DOLLAR VOLUMES, CALIFORNIA, GEORGIA, MICHIGAN AND TENNESSEE, 1992, BY COUNTY POVERTY LEVEL**

Definitions	Percentages			
	California	Georgia	Michigan	Tennessee
All participating dentists as percent of all active dentists in county*				
All Counties	18.9	33.7	20.6	28.6
High Poverty Counties	30.4	100.0^	100.0^	64.1
Medium Poverty Counties	24.0	37.2	27.1	28.5
Low Poverty Counties	12.5	22.5	14.7	23.1
Participating dentists serving Medicaid children as percent of all active dentists in county*				
All Counties	18.1	33.7	20.3	28.5
High Poverty Counties	26.1	100.0^	100.0^	64.1
Medium Poverty Counties	23.2	37.2	26.8	28.4
Low Poverty Counties	11.7	22.4	14.5	23.1
Participating general dentists serving Medicaid children as percent of all active GP and Pedodontists in county*				
All Counties	17.4	33.3	16.5	26.4
High Poverty Counties	19.0	100.0^	50.0	64.1
Medium Poverty Counties	16.5	36.8	21.9	26.2
Low Poverty Counties	7.8	21.9	11.5	21.8

** Amount paid by Medicaid in 1989 was at least $1,600 and amount paid by Medicaid in 1992 was at least $1,900.

* Includes individual and other/unknown dental providers

TABLE C-10-89

CHILD ENROLLEES PER PROVIDERS OF CHILDREN'S DENTAL SERVICES, BY TYPE OF PROVIDER:
PERCENT GROWTH IN INNER URBAN, URBAN, SUBURBAN, AND RURAL COUNTY AREA
1989

Dental Provider Type	All				Inner Urban				Urban				Suburban				Rural			
Children's Dental Care	**CA**	**GA**	**MI**	**TN**	**CA**	**GA**	**MI**	**TN**	**CA**	**GA**	**MI**	**TN**	**CA**	**GA**	**MI**	**TN**	**CA**	**GA**	**MI**	**TN**
All Providers	487	481	409	427	449	285	618	--	440	407	367	386	601	491	589	418	450	523	359	457
Providers of Diagnostic, Preventive, or Therapeutic Dental Services	473	481	394	386	444	285	596	--	437	407	358	371	591	491	579	405	446	523	349	393
Individual Dentists	491	481	410	431	455	285	619	--	443	407	368	394	603	491	589	423	457	523	359	457
Institutional Providers	--	--	24,009	3,019	--	--	86,064	--	--	--	19,188	5,042	--	--	--	1,819	--	--	428	1,337
Other/Unknown*	21,148	--	6,277	37,150	30,989	--	19,861	--	26,070	--	9,075	55,726	10,016	--	4,646	--	2,893	--	2,169	--
Providers of Emergency Dental Services	1,331	800	582	686	1,179	874	985	--	1,280	676	574	776	1,680	994	645	637	1,159	744	568	657
Individual Dentists	1,394	800	607	700	1,211	874	1,017	--	1,296	676	586	805	1,711	994	666	566	1,267	744	586	707
Institutional Providers	--	--	77,170	9,020	--	--	258,191	--	--	--	25,244	14,315		--	--	2,462	--	--	--	1,877
Other/Unknown*	37,477	--	7,964	55,726	59,777	--	36,884	--	50,877	--	11,131	55,726	6,227	--	4,646	--	2,690	--	1,930	--
Providers of Orthodontic Services	21,872	1,667	21,716	1,694	29,979	--	86,064	--	21,189	--	21,475	1,826	18,719	--	--	1,735	1,510	1,667	1,124	1,381
Individual Dentists	24,398	1,667	24,129	1,727	34,793	--	86,064	--	21,189	--	21,475	1,842	18,719	--	--	1,815	1,510	1,667	1,124	1,381
Institutional Providers	--	--	--	40,525	--	--	--	--	--	--	--	78,466	--	--	--	2,583	--	--	--	--
Other/Unknown*	240,139	--	--	--	320,185	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Providers of Other Services	148,279	5,543	18,304	2,227	315,357	--	--	--	27,153	5,543	18,304	2,640	10,425	--	--	2,330	--	--	--	1,531
Individual Dentists	159,174	5,543	18,304	2,227	35,580	--	--	--	27,153	5,543	18,304	2,640	10,425	--	--	2,341	--	--	--	1,531
Institutional Providers	--	--	--	2,228	--	--	--	--	--	--	--	--	--	--	--	2,228	--	--	--	--
Other/Unknown*	82,911	--	--	--	82,911	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

*Identified on claims as individual providers but not identified on provider file

TABLE C-10-92

CHILD ENROLLEES PER PROVIDERS OF CHILDREN'S DENTAL SERVICES, BY TYPE OF PROVIDER:
PERCENT GROWTH IN INNER URBAN, URBAN, SUBURBAN, AND RURAL COUNTY AREA
1992

Dental Provider Type	All				Inner Urban				Urban				Suburban				Rural			
Children's Dental Care	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN	CA	GA	MI	TN
All Providers	837	793	468	640	641	582	394	600	937	945	457	726	960	747	643	614	837	759	423	597
Providers of Diagnostic, Preventive, or Therapeutic Dental Services	811	793	446	651	634	582	403	604	932	945	438	547	936	748	629	692	824	759	404	690
Individual Dentists	841	793	470	658	646	582	405	618	942	945	461	753	960	748	643	623	837	759	424	618
Institutional Providers	--	--	12,683	4,755	--	--	141,581	26,100	--	--	7,968	5,805	--	--	3,925	3,632	--	--	1,486	2,055
Other/Unknown*	37,499	--	18,631	3,665	41,306	--	70,791	--	61,791	--	15,184	--	6679	--	--	--	5,746	--	2,337	3,665
Providers of Emergency Dental Services	1,958	1,503	692	960	1,944	1,725	625	1,243	2,109	1,534	666	945	2,110	1,523	1,017	1,113	1,383	1,395	597	791
Individual Dentists	2,061	1,503	691	976	2,008	1,725	627	1,274	2,167	1,534	712	1,055	2,170	1,523	1,022	1,070	1,447	1,395	567	786
Institutional Providers	--	--	5,656	9,124	--	--	--	52,219	--	--	8,969	9,193	--	--	3,118	3,702	--	--	1,527	1,737
Other/Unknown*	59,643	--	36,364	3,665	76,448	--	141,581	--	71,641	--	22,126	--	8,675	--	--	--	5,746	--	2,337	3,665
Providers of Orthodontic Services	31,764	8,222	41,974	2,511	35,253	10,196	110,183	6,527	34,093	24,573	21,651	2,505	--	5,821	--	2,622	1,862	1,462	1,292	1,787
Individual Dentists	32,059	8,222	46,637	2,568	33,045	10,196	110,183	6,962	34,093	24,573	21,651	2,505	30,638	5,821	--	2,740	1,862	1,462	1,292	1,787
Institutional Providers	--	--	--	54,221	--	--	--	104,437	--	--	--	--	--	--	--	4,004	--	--	--	--
Other/Unknown*	136,706	--	--	--	159,490	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Providers of Other Services	20,247	--	4,831	3,236	46,605	--	11,521	9,494	12,507	--	7,618	3,183	4,243	--	4,731	2,848	2,102	--	1,501	1,747
Individual Dentists	74,400	--	18,186	3,164	86,175	--	11,521	9,494	66,294	--	24,850	3,183	17,050	--	--	2,582	--	--	--	1,747
Institutional Providers	23,015	--	4,649	5,251	61,627	--	--	--	15,931	--	8,308	--	5,018	--	4,731	5,251	2,102	--	1,501	--
Other/Unknown*	117,161	--	--	--	175,742	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

*Identified on claims as individual providers but not identified on provider file

APPENDIX D

URBAN/RURAL CLASSIFICATION

Urban/Rural Classification

The Human Resource Profile Classification (HRPC) available in the Area Resource File was used to derive an urban rural classification that provides more differentiation among counties in terms of the level of urbanization and its location relative to a county with a major metropolitan area. The HRPC contains the following 10 categories:

Code	Description
	Metropolitan
00	Large Metropolitan, Core County (1,000,000 + population)
01	Fringe County, Non-Core County (1,000,000 + population)
02	Counties of Metropolitan Areas (250,000-999,000 population)
03	Lesser metropolitan Areas (less than 250,000 population)
	Non-Metropolitan
04	Urbanized, Adjacent to Metro Area (20,000 + urban population)
05	Urbanized, non-adjacent to Metro Area (20,000 + urban population)
06	Less Urbanized, adjacent to Metro Area (2,500 to 20,000 urban population)
07	Less Urbanized, not adjacent to Metro Area (2,500 to 20,000 urban population)
08	Thinly Populated, adjacent to Metro Area (less than 2,500 urban population)
09	Thinly Populated, not adjacent to Metro Area (less than 2,500 population)

For the analysis, the above codes were collapsed into the following:

Urban	= 00, 01, 02, 03
Inner Urban	= 00
Suburban	= 04, 05, 06
Rural	= 07, 08, 09

This grouping was based on consideration of the overall level of the urban population and whether the county was adjacent to a metropolitan county. Whether or not a county is considered adjacent is based on being physically adjacent and at least 2 percent of the employed labor force in the nonmetropolitan county commuting to central metropolitan counties. The goal was to separate out the counties that are much more urbanized than others (i.e., having some "inner-urban" characteristics) from counties that may be more suburban in nature. Smaller, non-adjacent counties were classified as rural based on their smaller populations, lack of commuting patterns and relative isolation.

APPENDIX E

State-Specific Dental Procedure Codes and Service Categories

Description/Title	California	Georgia	Michigan	Tennessee
DIAGNOSTIC				
Examination				
Examination paid only for Initial episode of treatment for complete case presentation	*010*			
Initial oral exam		D0110	700110	
Initial oral exam >21 years old			700114	
Periodic oral exam		D0120	700120	D0120
Diagnostic examination; mapped from T3 CA claims data	*015*			
Visit (partial denture maintainence); age 21 and over			700121	
Dental management of difficult children and adults, 30 minutes		Y0001		
Dental management of difficult children and adults, 1 hour		Y0091		
Dental management of difficult children and adults, 2 hours		Y0092		
Dental management of difficult children and adults, 4 hours		Y0093		
Dental management of difficult children and adults, 3 hours		Y0094		
Assessment for dental treatment approval		Y0035		
Office Medical Services				
Office medical service, new patient; brief service				90000
Office medical service, new patient; limited service				90010
Office medical service, new patient; intermediate service				90015
Office medical service, established patient; minimal service				90030
Office medical service, established patient; brief service				90040
Office medical service, established patient; limited service				90050
Office medical service, established patient; intermediate service				90060
Radiographs				
Single film	*110*			
Additional film, up to 12 films, each	*111*			
*Entire denture series consisting of at least 14 films plus bite wing films ***	*112*			
***also lists this code description as: Panographic type film with periapical of anterior teeth plus bite wing films*	*112*			
Intraoral — complete series (including bitewing) [Full mouth series]		D0210	700210	D0210
Intraoral — periapical, first film		D0220		D0220
Intraoral — periapical each additional film				D0230
Intraoral — occlusal, single, first film *(1 film)*		D0240	700240	
Intraoral, occlusal view, maxillary or mandibular, each	*113*			
Intraoral — occlusal, single, 2 films			700241	
Intraoral/Extraoral — full series (panoramic and a minimum of 2 bitewings and 4 anterior periapicals			700211	
Intraoral — edentulous complete series (10 films)			700212	
Intraoral series — 12 to 15 films			700213	
Intraoral series — 8 to 11 films			700214	
Intraoral — 1 film (bitewing or periapical)			700221	
Intraoral — 2 films (bitewing or periapical)			700222	
Intraoral — 3 films (bitewing or periapical)			700223	
Intraoral — 4 films (bitewing or periapical)			700224	
Intraoral — 5 films (bitewing or periapical)			700225	

Description/Title	*California*	Georgia	*Michigan*	Tennessee
Intraoral — 6 films (bitewing or periapical)			700226	
Intraoral — 7films (bitewing or periapical)			700227	
Extraoral — first film			700250	
Extraoral — each additional film			700260	
Superior or inferior maxillary, extraoral head or lateral jaws, 1 film	*114*			
Superior or inferior maxillary, extraoral head or lateral jaws, 2 film	*115*			
Periapical, 1 film				
Periapical, 2 films		YY112		
Periapical, 3 films		YY113		
Periapical, 4 films		YY114		
Periapical, 5 films		YY115		
Periapical, 6 films		YY116		
Bitewing — single, first film		D0270		D0270
Bitewing — 2 films		D0272		
Bitewing — 4 films		D0274		
Bitewing — each additional film		D0275		D0275
Bitewing — 2 films	*116*			
Bitewing — 4 films	*117*			
Panoramic type film, additional film, each	*125*			
Panoramic Film		D0330	700330	D0330
Radiologic examination, mandible; partial, less than four views				70100
Radiologic examination, sinuses, paranasal, complete, minimum of three views				70220
Radiologic examination, teeth; single view				70300
Radiologic examination, teeth; partial examination, less than full mouth				70310
Temporomandibular Joint series X-ray	*955*			
Radiologic examination, temporomandibular joint, open and closed mouth; unilateral				70328
Radiologic examination, temporomandibular joint, open and closed mouth; bilateral				70330
Temporomandibular joint arthrography; supervision and interpretation only				70332
Temporomandibular joint arthrography; complete procedure				70333
Cephalogram film			700340	
Cephalogram, orthodontic				70350
Cephalometric head film, one view	*956*			
Cephalometric head film, each additional view	*957*			
Orthopantogram				70355
Other Radiographs			700390	
Radiolgic exam, complex motion body section, other than with urography; bilateral				76102
Miscellaneous: Consultation on x-ray examination made elsewhere, written report				76140
X-ray;mapped from T3 CA claims data	*118*			
X-ray;mapped from T3 CA claims data	*119*			
X-ray;mapped from T3 CA claims data	*120*			
Other Dx procedures				
Nasal endoscopy, diagnostic (includes examination of the medial meatus, infundibulum and sius ostia)				31250
Laryngoscopy, flexible fiberoptic; diagnostic				31575
Unlisted procedure, accessory sinuses				31299

Description/Title	California	Georgia	Michigan	Tennessee
Cleft Palate Orthordontic Services - Diagnostic				
Malocclusion cases: diagnostic work-up, H.F., photos and study models (FMS extra at State fee schedule)	*550*			
Cleft palate cases: Primary detention, diagnostic work-up, H.F., photos and study models	*560*			
Facial growth management: diagnostic work-up, FMS extra at state fee schedule	*590*			
Maxillofacial Dental Services - Diagnostic				
Clinical examination and consultation, including study models	*950*			
Prosthetic evaluation and treatment plan, including study models	*952*			
Occlusal Analysis, including study models	*990*			
Consultations				
Initial Consultation; limited				90600
Initial Consultation; intermediate				90605
Initial Consultation; complex				90630
Professional consultation, diagnostic services provided by dentist or physician other than practitioner providing treatment; per session			709310	
Special consultation (by specialist for case presentation when treatment is not performed by the specialist)	*040*			
Tests and Laboratory Examinations				
Biopsy of lip				40490
Biopsy, vestibule of mouth				40808
Biopsy of oral tissue	*150*			
Biopsy of oral tissue; soft			700440	
Pulp vitality tests			700460	
Diagnostic cast; single			700469	
Diagnostic casts			700470	
Gross and microscopic pathological report	*160*			
NOTE: Biopsy codes D7286 (GA) and 20205/20220 (TN) are listed under Therapeutic, all other biopsy codes are listed under Diagnostic				

Description/Title	California	Georgia	Michigan	Tennessee
PREVENTIVE				
Prophylaxis — adults		D1110	701110	D1110
Prophylaxis — children		D1120	701120	not in claims
Prophylaxis — children to age 14	*049*			
Prophylaxis — to include scaling and polishing	*050*			
Topical Floride Treatments (Office Procedure)				
Topical applications of fluoride (one treatment including prophylaxis under age of 4)	*061*			
Topical applications of fluoride (including prophylaxis) — child	*062*			
Topical applications of fluoride (excluding prophylaxis) — child		D1203		
Topical applications of fluoride (excluding prophylaxis) — adult				
Topical application of fluoride liquid stannous or other				Y2119
Topical application of stannous fluoride, one treatment, (excluding trophy)		D1220		
Topical application of stannous fluoride, one treatment, (excluding prophylaxis)			701220	
Topical application of acid flouride phosphate; one treatment		D1230		
Topical application of acid flouride phosphate; one treatment (excluding prophylaxis)			701230	
General				
Sealant — per tooth				D1351
Space Maintenance (Passive Appliances)				
Space Maintainer —Fixed-unilateral		D1510	701510	D1510
Space Maintainer —Fixed-unilateral, band type	*800*			
Space Maintainer —Fixed; lingual or palatal arch band type			701511	
Space Maintainer —Fixed; lingual or palatal bar type	*812*			
Space Maintainer —Fixed; stainless steel crown type			701512	
Space Maintainer —Fixed-unilateral, satinless steel crown type	*811*			
Space Maintainer —Fixed-bilateral		D1515	701515	D1515
Space Maintainer —Fixed-bilateral; stainless steel crown type			701516	
Space Maintainer —Removable; bilateral		D1525		
Space Maintainer —Removable, acrylic	*801*		701530	
Recementation of Space Maintainer		D1550		
Remove space maintainer by other than inserting doctor		Y1551		
Adjustment to space maintainer by other than inserting doctor		Y1552		
Repair space maintainer by other than inserting doctor		Y1553		
Additional clasps	*802*			
Fixed or removable inhibiting applicance to correct thumbsucking	*832*			

Description/Title	*California*	Georgia	*Michigan*	Tennessee
THERAPEUTIC				
Office visit for treatment and observations of injuries to teeth and supporting structure, other than for routine operative procedures (regular office hours)	*020*			
Office medical service, new patient; extended service				90017
Office medical service, new patient; comprehensive service				90020
Office medical service, established patient; extended service				90070
Office medical service, established patient; comprehensive service				90080
Hospital Medical Services				
Hospital time facility charge; 30 minutes		Y0075		
Hospital time facility charge; 1 hour		Y0090		
Hospital time facility charge; 2 hours		Y0095		
Hospital time facility charge; 3 hours		Y0088		
Hospital care, hourly fee for time spent in hospital operative suite per hour (fee for service in addition)	*035*			
Initial hospital care; intermediate history and examination, initiation of diagnostic and treatment programs, and preparation of hospital records				90215
Initial hospital care; comprehensive history and examination, initiation of diagnostic and treatment programs, and preparation of hospital records				90220
Subsequent hospital care, each day; brief services				90240
Subsequent hospital care, each day; limited services				90250
Subsequent hospital care, each day; intermediate services				90260
Subsequent hospital care, each day; extended services				90270
Hospital call			709420	
Hospitalizaion			709450	
Hospital discharge day management				90292
Consultations				
Initial Consultation; extended				90610
Initial Consultation; comprehensive				90620
Follow-up consultations; brief				90640
Follow-up consultations; intermediate				90642
Special Services and Reports-Miscellaneous				
Handling, conveyance, and/or any other service in connection with the implementation of an order involving devices when fabricated by outside laboratory/shop, but which items have been designed and are to be fitted and adjusted by the attending physician				99002
Post-op follow-up visit, included in global service				99024
Critical Care, subsequesnt follow-up visit; limited examination, evaluation and/or treatment, same or new illness				99172

Description/Title	California	Georgia	Michigan	Tennessee
Amalgam — one surface (includes polishing), primary	600	D2110	702110	D2110
Amalgam — two surfaces (includes polishing), primary	601	D2120	702120	D2120
Amalgam — three surfaces (includes polishing), primary	602	D2130	702130	D2130
Amalgam — four surfaces (includes polishing), primary		D2131		D2131
Amalgam — cavities involving four or more tooth surfaces; primary	603			
Amalgam — one surface (includes polishing), permanent	611	D2140	702140	D2140
Amalgam — two surfaces (includes polishing), permanent	612	D2150	702150	D2150
Amalgam — three surfaces (includes polishing), permanent	613	D2160	702160	D2160
Amalgam — four or more surfaces (includes polishing), permanent	614	D2161		D2161
Amalgam — pin retained			702170	
Filling				
Acid etch — one restoration, per tooth				Y2101
Acid etch — two restorations, per tooth				Y2102
Acid etch — three restorations, per tooth				Y2103
Composite or acid etching including edg			702333	
Silicate Restoration				
Silicate cement filling, per restoration	640		702210	
Two or more silicate restorations in a single tooth-maximum	641			
Acrylic or Plastic Restorations				
acrylic or plastic restoration (filling)	645		702310	
acrylic or plastic restoration (involving incisal angle)			702320	
Two or more acrylic or plastic fillings in a single tooth - maximum	646			
Silicate, acrylic, plastic restoration: pin retention, per tooth, additional (when necessary and when final restoration is amalgam, plastic or composite)	648			
Not otherwise classified acrylic or plastic restoration			702399	
Filled or Unfilled Resin Restorations				
Resin — one surface		D2330	702330	D2330
Resin — two surfaces		D2331	702331	D2331
Resin — three surfaces		D2332	702332	D2332
Resin — four or more surfaces or involving incisal angle		D2335		

Description/Title	California	Georgia	Michigan	Tennessee
Crowns				
Note: CDS does not pay for facings on crowns, posterior to 2nd bicuspids				
Acrylic	*650*			
Acrylic with metal	*651*			
Porcelain	*652*			
Porcelain with metal	*653*			
Crown: cast (full)	*660*			
Crown: three-quarter cast	*663*			
Stainless steel — primary	*670*			Y2104
Stainless steel — permanent	*671*			Y2105
Gold dowel pin	*672*			
Fixed stainless steel crown type				Y2106
Crowns — Single Restorations Only				
Crown — single restoration only; resin (laboratory)		D2710	702710	D2710
Crown—single restoration only; plastic, prefabricated			702711	
Crown — single restoration only; porcelain fused to noble metal				D2750
Crown—single restoration only; stainless steel			702830	
Crown—single restoration only; stainless steel with window and composite (anterior only)			702831	
Crown—single restoration only; temporary, fractured tooth		*See below*	702840	
Crown—single restoration only; Post and Core, non-precious metal (cast or steel)			702893	
Crown—single restoration only; not otherwise classified			702899	
Other Services				
Crown build-up, including any pins				D2950
Recement Crown		D2920	702920	
Prefabricated stainless steel crown; primary tooth		D2930		
Prefabricated stainless steel crown; permanent tooth		D2931		
Prefabricated resin crown		D2932		
Sedative filling		D2940	702940	
Pin retention — per tooth, in addition to restoration		D2951		
Temporary (fracture tooth)		D2970	*see above, 702840*	
Unspecified restorative procedure, by report		D2999		
ENDODONTICS				
Pulp cap — direct (excluding final restoration)		D3110	703110	D3110
Pulp cap — indirect (excluding final restoration)		D3120		
Therapeutic Pulpotomy (excluding all final restoration)		D3220	703220	D3220
Therapeutic Pulpotomy (in addition to restoration, per treatment)	*501*			
Vital Pulpotomy	*502*			
Root Canal Therapy (Includes Treatment Plan, Clinical Procedures, and Follow-up Care				
One canal (excluding final restoration)		D3310	703310	D3310
Two canals (excluding final restoration)		D3320	703320	D3320
Three canals (excluding final restoration)		D3330	703330	D3330
Single rooted tooth canal therapy	*511*			
Birooted rooted tooth canal therapy	*512*			
Trirooted tooth canal therapy	*513*			
Apexification (per treatment visit)	*534*		703350	D3350
Therapeutic apical closure (followup and final procedure excludes root canal therapy)			703351	
Root canal therapy; not otherwise classified			703399	

Description/Title	California	Georgia	Michigan	Tennessee
Periapical Series				
Apicoectomy (including filling of root canal)	*530*			
Apicoectomy (separate procedure) (allowances do not include final restoration or necessary roentgenograms)	*531*			
Apicoectomy (per tooth); first tooth		D3410	703410	
Apicoectomy (per tooth); each additional tooth		D3411		
Other Endontic Procedures				
Endontics: recalcification (CaOH, temporary restoration) per tooth	*503*			
Unspecified endontic procedure, by report		D3999		
Endodontics (Pulp capping, Root Canals), general or unspecific; mapped from T3 claims data	*500*			
PERIODONTICS				
Surgical				
Subgingival crettage, root planning (not prophylaxis)	*452*			
Gingivectomy or gingivoplasty — per quadrant		D4210		D4210
Gingivectomy — per quadrant (including post surgical visits	*472*			
Gingivectomy, treatment per tooth (fewer than six teeth)	*474*			
Gingival curettage, by report		D4220	704220	
Gingivectomy, osseous or muco-gingival surgery per quadrant (includes postsurgical visits)	*473*			
Osseous surgery (including flap entry and closure); per quadrant		D4260		
Osseous graft —single site (including flap entry, closure, and donor site)		D4261		
Osseous graft —multiple sites (including flap entry, closure, and donor site)		D4262		
Pedicule soft tissue graft procedure		D4270		
Free soft tissue graft procedure		D4271		
Adjunctive Periodontal Services				
Periodontal scaling and root planning; entire mouth			704340	
Periodontal scaling and root planning — per quadrant		D4341	704341	D4341

Description/Title	California	Georgia	Michigan	Tennessee
Other Periodontal Services				
Periodontal maintenance procedures following active therapy (periodontal prophylaxis)		D4910		
Periodontics: Correction of occlusion	*453*			
PROSTHODONTICS REMOVABLE				
Complete Denture (Including Routine Postdelivery Care)				
Complete upper	*700*	D5110	705110	
Complete lower	*701*	D5120	705120	
Immediate upper		D5130		
Immediate lower		D5140		
Partial Denture (Including Routine Postdelivery Care)				
Upper partial — acrylic base (including any conventional clasps and rests)		D5211		D5211
Lower partial — acrylic base (including any conventional clasps and rests)		D5212		D5212
Upper partial, predominantly base cast with acrylic saddles (including any conventional clasps and rests)		D5213		
Lower partial, predominantly base cast with acrylic saddles (including any conventional clasps and rests)		D5214		
Upper partial, high noble cast base with acrylic saddles (including any conventional clasps and rests)		D5215		
Removable unilateral partial denture — one piece predominantly base casting, clasp attachments — per unit (including pontics)		D5281		D5281
Lower with chrome lingual bar and two clasps, acrylic base				Y2107
Upper with chrome palatal bar and two clasps, acrylic base				Y2108
Upper partial denture with wrought iron clasp, acrylic base				Y2112
Lower partial denture with wrought iron clasp, acrylic base				Y2113
Upper or lower with 2 or more gold or chrome clasps with rest, acrylic saddle			705210	
Lower with gold or chrome lingual bar and two or more clasps, acrylic saddle with teeth			705230	
Lower with gold or chrome lingual bar and two or more clasps, cast saddle with teeth			705240	
Upper with gold or chrome lingual bar and two or more clasps, acrylic saddle with teeth			705250	
Partial lower or upper denture with chrome cobalt alloy lingual or palatal bar and acrylic saddles-base	*703*			
Teeth and clasps-extra per unit (T3 maps to partials)	*704*			
Teeth and clasps-extra per unit (T3 maps to partials)	*716*			
Adjustments to Dentures				
Denture adjustment	*720*			
Adjust complete denture; upper		D5410		
Adjust complete denture; lower		D5411		
Adjust partial denture			705420	
Adjust partial denture; upper		D5421		
Adjust partial denture; lower		D5422		

Description/Title	California	Georgia	Michigan	Tennessee
Repairs to Partial Dentures				
Repair acrylic saddle or base			705610	D5610
Repair cast framework			705620	D5620
Repair or replace broken clasp			705630	D5630
Replace broken tooth — per tooth		D5640	705640	D5640
Add tooth to existing partial denture		D5650		D5650
Reattaching damaged clasp on denture				Y2109
Replacing broken clasp with new clasp on denture			705680	Y2110
Repairs to Complete Dentures				
Repair broken complete denture base		D5510		
Denture Reline Procedures				
Office reline--cold cure-acrylic	721			
Hot cure denture reline (laboratory procedure)	722			
Reline upper complete denture (laboratory)		D5750	705750	
Reline lower complete denture (laboratory)		D5751		
Reline upper partial denture (laboratory)			705760	
Special tissue conditioning, per denture in addition to reline (maximum 2 per denture)	723			
Other Removable Prosthetic Services				
Temporary partial, stayplate denture; upper			705820	
Stayplate-base	706			
Obturator for sugically excised palatal tissue			705830	
Obturator for deficient velopharyngeal function (cleft palate)			705840	
Recementation: inlay	685			
Recementation: Crown	686			
Recementation: Bridge	687			
Repairs-based on time and laboratory charges	690			
Replace broken Tru-pontic	694			
Replace broken Steele's facing where post backing is intact	695			
Unspecified removable prosthodontic precedure, by report		D5899	705899	
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	750			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	751			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	752			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	753			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	754			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	755			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	757			

Description/Title	California	Georgia	Michigan	Tennessee
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	759			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	760			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	761			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	762			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	763			
Prosthodontics Fixed				
Pins — 1 or more				Y2100
Prosthodontic Fixed (Bridges, crowns) General or unspecific; mapped from T3 claims data	692			
Maxillofacial Dental Services				
Cleft palate prosthesis: transitional speech applicance with pharyngeal extension	960			
Cleft palate prosthesis: Adult speech appliance, partially edentulous, cast	964			
Cleft palate prosthesis: Palatal lift, interim	966			
Cleft palate prosthesis: Palatal lift, cast chrome framework	968			
Maxillary prosthetic reconstruction: Definitive obturator proshesis, partial maxillary resection	972			
Maxillary prosthetic reconstruction: removable facial prosthesis	977			
Maxillary prosthetic reconstruction: splints and stents	978			
Maxillary prosthetic reconstruction: Radiation therapy flouride carrier	979			
Maxillary prosthetic reconstruction: repair broken appliance	980			
Maxillary prosthetic reconstruction: processed rebase of appliance	981			
Surgical: maxillofacial oral surgical services; including operative report when billing	985			
Temporomandibular Joint Dysfunction Management: Occlusal equilibration, limited centric and excursive adjustments	992			
Temporomandibular Joint Dysfunction Management: Post operative visit, symptomatic care and counseling	996			
Temporomandibular Joint Dysfunction Management: Unlisted therapeutic service	998			

Description/Title	California	Georgia	Michigan	Tennessee
ORAL SURGERY				
Extractions — Includes Local Anesthesia and Routine Postop Care				
Single tooth, uncomplicated	200	D7110	707110	D7110
Each additional tooth	201	D7120	707120	D7120
Root removal, exposed root			707130	
Surgical Extractions — Includes Local Anesthesia and Routine Postop Care				
Supernumerary tooth, simple extraction			707140	
Supernumerary tooth, surgical extraction			707215	
Supernumerary tooth (this is all the TN formulary codes said)				Y2115
Surgical removal of erupted teeth (Enclose x-ray)	202			
Surgical removal of erupted tooth requiring elevation of mucoperiosteal flap and removal of bone and/or section of tooth		D7210	707210	D7210
Removal of impacted tooth — soft tissue	230	D7220	707220	D7220
Removal of impacted tooth — partially bony	231	D7230	707230	D7230
Removal of impacted tooth — completely bony	232	D7240	707240	D7240
Surgical removal of residual tooth roots (cutting procedure)		D7250	707250	D7250
Oral Surgery: extractions: mapped from T3 claims data	203			
Oral Surgery: extractions; mapped from T3 claims data	204			
Other Surgical Procedures				
Oroantral fisula closure		D7260	707270	
Tooth re-implantation and/or stabilization of accidentally evulsed or displaced tooth and/or alveolus	273	D7270		
Transplantation of tooth or tooth bud	275			
Surgical exposure of impacted or unerupted tooth for orthodontic reasons (including orthodontic attachments)		D7280		
Crown exposure, soft tissue	296			
Crown exposure, partially bony	297			
Crown exposure, fully bone or ecotopic eruption	298			
Biopsy of oral tissue; soft		D7286		
Sequestrectomy for osteomyelitis or bone abcess, superficial	282			
Other surgical procedure; not otherwise classifed			707299	
Alveolar or gingival reconstruction (includes local anesthesia and postoperative visits)				
Alveolectomy (edentulous) per quadrant	250			
Alveolectomy (in addition to removal of teeth) per quadrant	252			
Removal of mandibular tori (per quadrant)	258			
Alveoplasty — Surgical Preparation of Ridge for Dentures				
Alveoplasty in conjunction with extractions; per quadrant		D7310		
Alveoplasty not in conjunction with extractions; per quadrant		D7320		
Surgical Excision of Reactive Inflammatory Lesion (Scar Tissue or Locallized Congenital Lesions)				
Radical excision; lesion diameter up to 1.25cm			707410	
Radical excision; lesion diameter over 1.25cm			707420	

Description/Title	California	Georgia	Michigan	Tennessee
Removal of Tumors, Cysts and Neoplasms				
Resection of benign tumor of soft tissue (smaller than 2.5cm)	269			
Resection of benign tumor of soft tissue (2.5cm or larger)	270			
Excision of benign tumor; lesion diameter up to 1.25cm		D7430	707430	
Excision of benign tumor; lesion diameter over 1.25cm			707431	
Excision of cyst (small)	280			
Excision of cyst (large)	281			
Removal of odontogenic cyst or tumor; lesion diameter up to 1.25cm		D7450	707450	
Removal of odontogenic cyst or tumor; lesion diameter over 1.25cm		D7451	707451	
Removal of nonodontogenic cyst or tumor; lesion diameter up to 1.25cm		D7460	707460	
Removal of nonodontogenic cyst or tumor; lesion diameter over 1.25cm		D7461		
Excision of Bone Tissue				
Excision of Bone tissue; not otherwise classified			707499	
Reduction of Dislocation and Management of Other Temporomandibular Joint Dysfunctions				
Other temporomandibular joint: closed reduction of dislocation	Emergency??		707820	
Other temporomandibular joint: manipulation under anesthesia			707830	
Injection of sclerosing agent into temporomandibular joint	294			
Suture of soft tissue wound or injury	292			
Complicated Suturing (Reconstruction Requiring Delicate Handling of Tissues and Wide Undermining for Meticulous Closure)				
Suture; up to 5 cm			707911	
Suture; over 5cm		D7912	707912	
Other Repair Procedures				
Frenulectomy (frenectomy or frenontomy); separate procedure	291	D7960	707960	
Intraoral incision and drainage of abcess	260			
Extraoral incision and drainage of abcess	261			
Excision of hyperplastic tissue; per arch	259	D7970		
Excision of percoronal gingiva	262	D7971		
Sialolithotomy			707980	
Sialolithotomy: removal of salivary calculus, intraorally	263			
Tuberosity reduction	267			
Excision of Salivary gland			707981	
Removal of foreign body from bone (independant procedure)	276			
Incision and removal of foreign body from soft tissue	290			
Maxillary sinusotomy for removal of tooth fragment or foreign body	278			
Closure of oral fistula of maxillary sinus	279			

Description/Title	California	Georgia	Michigan	Tennessee
Integumentary System				
Incision and drainage of abscess; simple				10060
Puncture aspiration of abscess, hematoma, bulla or cyst				10160
Debridement; skin, full thickness				11041
Debridement; skin, subcutaneous tissue, muscle, and bone				11044
Excision, other benign lesion; lesion diameter 0.5cm or less				11440
Excision, other benign lesion; lesion diameter 0.6cm to 1.0cm				11441
Excision, other benign lesion; lesion diameter 2.1cm to 3.0cm				11443
Simple repair of superficial wounds of scalp, neck, axillae, external genitalia, trunk and/or extremities (including hands & feet); 2.5cm or less	[should have been at end under misc]			12001
Simple repair of superficial wounds of face, ears, eyelids, nose, lips, and/or mucous membranes; 2.5cm or less				12011
Simple repair of superficial wounds of face, ears, eyelids, nose, lips, and/or mucous membranes; 2.6cm to 5.0cm				12013
Simple repair of superficial wounds of face, ears, eyelids, nose, lips, and/or mucous membranes; 5.1cm to 7.5cm				12014
Simple repair of superficial wounds of face, ears, eyelids, nose, lips, and/or mucous membranes; over 30.0cm				12018
Layer closure of wounds of scalp, axillae, trunk, and/or extremities (excluding hands & feet); 2.5cm or less				12032
Layer closure of wounds of scalp, axillae, trunk, and/or extremities (excluding hands & feet); 12.6cm to 20.0cm or less				12035
Layer closure of wounds of face, ears, eyelids, nose, lips and/or mucous membranes; 2.5cm or less				12051
Layer closure of wounds of face, ears, eyelids, nose, lips and/or mucous membranes; 2.6 to 5.0cm				12052
Layer closure of wounds of face, ears, eyelids, nose, lips and/or mucous membranes; 5.1cm to 7.5cm				12053
Layer closure of wounds of face, ears, eyelids, nose, lips and/or mucous membranes; 7.6cm to 12.5cm				12054
Repair, complex, truck; 1.1cm to 2.5cm				13101
Repair, complex, forehead, cheeks, chin, mouth, neck, axillae, genitalia, hands and/or feet; 1.1cm to 2.5cm				13131
Repair, complex, forehead, cheeks, chin, mouth, neck, axillae, genitalia, hands and/or feet; 2.6cm to 7.5cm				13132
Repair, complex, eyelids, nose, ears and/or lips; 1.0cm or less (see also 40650-40654, 47961-64975)				13150
Repair, complex, eyelids, nose, ears and/or lips; 1.1cm to 2.5cm				13151
Repair, complex, eyelids, nose, ears and/or lips; 2.6cm to 7.5cm				13152
Repair, unusual, complicated, over 7.5cm, any area				13300
Adjacent tissue transfer or rearrangement, cheeks, mouth, nose, neck, axillae; defect 10 sq cm or less				14040
Adjacent tissue transfer or rearrangement, lips, nose, ears, eyelids; defect 10 sq cm or less				14061
Adjacent tissue transfer or rearrangement, more than 30 sq cm, unusual or complicated, any area				14300
Musculoskeletal System - General				
Incision of soft tissue abscess (eg, secondary to oseomyelitis); superficial				20000
Incision of soft tissue abscess (eg, secondary to oseomyelitis); deep or complicated				20005

Description/Title	California	Georgia	Michigan	Tennessee
Excision: biopsy, muscle; deep				20205
Excision: biopsy, trocar or needle; superficial				20220
Insertion of wire or pin with application of skeletal traction, including removal (separate procedure)				20650
Removal of implant; superficial (separate procedure)				20670
Removal of implant; deep				20680
Bone graft any autogenous donor area; minor or small				20900
Bone graft any autogenous donor area; major or large				20902
Miscellaneous — Unlisted procedure, musculoskeletal, general				20999
Surgical Incision				
Incision and drainage of abcess; intraoral soft tissue		D7510	707510	
Incision and drainage of abcess; extraoral soft tissue		D7520	707520	
Surgical Incision: Treatment of cellulitis			707525	
Removal of reaction, producing foreign bodies; musculoskeletal system		D7540		
Surgical Incision: Not otherwise classified			707599	
Musculoskeletal System - Head				
Excision if benign cyst or tumor of mandible; simple				21040
Excision if benign cyst or tumor of mandible; complex				21041
Excision of malignant tumor of mandible				21044
Menisectomy, partial or complete, temporomandibular joint (separate procedure)				21060
Coronoidectomy; bilateral				21071
Osteotomy; mandible, total or horizontal				21200
Osteotomy; mandible, segmental				21202
Osteotomy; mandibular ramus (osteotomy)				21203
Osteotomy; maxilla, total				21204
Osteotomy; maxilla, segmental				21206
Graft, bone; nasal, maxillary or malar areas (includes obtaining graft)				21210
Anthroplasty, temporomandibular joint, with or without autograft				21240
Osteoplasty of maxilla and/or other facial bones for midface hypoplasia or retrusion (LeFort type operation); with bone graft				21250
Osteoplasty of maxilla and/or other facial bones for midface hypoplasia or retrusion (LeFort type operation); without bone graft				21254
Interdental wiring, for condition other than fracture				21497
Unlisted orthopedic procedure, head				21499
Musculoskeletal Sytem-Neck (Soft Tissue) & Thorax				
Excision of tumor, soft tissue of neck or throrax; subcutaneous				21555
Respiratory System				
Repair fistula; oronasal				30600
Laryngoscopy direct, with or without tracheoscopy; for aspiration				31515
Digestive System				
Excision of lip; transverse wedge excision with primary closure				40510
Repair lip, full thickness; vermilion only				40650
Drainage of abscess, cyst, hematoma, vestibule of mouth; simple				40800
Drainage of abscess, cyst, hematoma, vestibule of mouth; complicated				40801
Removal of embedded foreign body, vestibule of mouth; simple				40804
Incision of labial frenum (frenotomy), vestibule of mouth				40806

Description/Title	*California*	Georgia	*Michigan*	Tennessee
Excision of lesion of mucosa and submucosa, vestibule of mouth; with simple repair				40812
Excision of lesion of mucosa and submucosa, vestibule of mouth; with complex repair				40814
Excision of frenum, labial or buccal (frenumectomy, frenulectomy, frenectomy), vestiblue of mouth				40819
Vestibuloplasty; entire arch				40844
Intraoral incision and drainage of abscess, cyst, or hematoma of tongue or floor of mouth; lingual				41000
Incision of lingual frenum (frenectomy), tongue or floor of mouth				41010
Extraoral incision and drainage of abscess, cyst, or hematoma of floor of mouth; sublingual				41015
Extraoral incision and drainage of abscess, cyst, or hematoma of floor of mouth; submental				41016
Extraoral incision and drainage of abscess, cyst, or hematoma of floor of mouth; submandibular				41017
Excision of lingual frenum (frenectomy), tongue or floor of mouth				41115
Hemiglossectomy				41130
Dentoalveolar Structures				
Incision of abscess, cyst, hematoma from dentoalveolar structures				41800
Excision of lesion or tumor, dentoalveolar structures; without repair				41825
Excision of lesion or tumor, dentoalveolar structures; with simple repair				41826
Excision of lesion or tumor, dentoalveolar structures; with complex repair				41827
Alveoplasty				41874
Palatoplasty for cleft palate; with bone graft to alveolar ridge (includes obtaining graft)				42210
Palatoplasty for cleft palate; major revision				42215
Unspecified oral surgery procedure, by report			707999	
Oral surgery (extraction, Treatment of Fractures, Alveoplasty, other) general or unspecific; mapped from T3 CA claims data	*299*			
Oral surgery (extraction, Treatment of Fractures, Alveoplasty, other) general or unspecific; mapped from T3 CA claims data	*995*			
Oral surgery (extraction, Treatment of Fractures, Alveoplasty, other) general or unspecific; mapped from T3 CA claims data	*999*			
Adjunctive General Services				
Postoperative visit (complications)	*220*			
Additional Reimbursment			709112	
Unclassified Adjunctive General Services: not otherwise classified			709199	
Anesthesia				
General anesthesia	*400*	D9220	709220	
Analgesia		D9230		
Relative analgesia, per visit	*301*			
Intravenous sedation		D9240		D9240
Intraveneous sedation (not in conjunction with General Anesthesia			709231	
Continuous IV drip				Y2023

Description/Title	California	Georgia	Michigan	Tennessee
Drugs				
Injectables (antibiotics, premedications and therapeutic durgs)	300			
Therapeutic drug injection, by report		D9610	709610	
Other drugs and/or medicament, by report		D9630		
Treatment of fracture, Compound or comminuted: maxilla, open reduction			707710	
Treatment of fracture, Compound or comminuted: maxilla, closed reduction			707720	
Treatment of fracture, Compound or comminuted: mandible, open reduction			707730	
Treatment of fracture, Compound or comminuted: mandible, closed reduction			707740	

Description/Title	California	Georgia	Michigan	Tennessee
ORTHODONTICS - SPECIAL SERVICES				
Malocclusion cases: Banding and materials	552			
Malocclusion cases: per month - Maximum 24 months	554			
Malocclusion cases: quarterly - observation - 6 quarters maximum	556			
Initial banding				Y2114
Monthly maintenance				Y2116
Other Orthodontic Services				
Treatment of the atypical or extended skeletal case		D8650		
Orthordontic Services for the Crippled Children's Program for Title V Elligible Children				
Pretreatment orthodontic evaluation			709990	
Orthodontic evaluation (includes examination, x-rays and study models)			709991	
Orthodontic initial treatment (includes appliance insertion and first six months treatment)			709992	
Orthodontic continuing treatment (each additional six months)			709993	
Not otherwise classified (Orthodontic services only)			709999	
Cleft Palate Cases	*Asking ADA Guy if should include??*			
Cleft Palate Cases (primary dentition): appliance fee	562			
Cleft Palate Cases (primary dentition): per month - 10 month maximum	564			
Cleft Palate Cases (mixed dentition): banding and materials	570			
Cleft Palate Cases (mixed dentition): per month - 14 month maximum	572			
Cleft Palate Cases (permanent dentition): banding and materials	580			
Cleft Palate Cases (permanent dentition): per month - 30 month maximum	582			
Cleft Palate Cases (facial growth management): quarterly observation - 6 quarters maximum	592			
Cleft Palate Cases (facial growth management): banding and materials	596			
Cleft Palate Cases (facial growth management): per month - 24 month maximum	598			
Cleft Palate Cases (facial growth management): retainer removable	599			

Description/Title	California	Georgia	Michigan	Tennessee
EMERGENCY				
Office services provided on a emergency basis				99058
Emergency Oral Exam		D0130		
Emergency Oral Exam; under 21			700130	
Emergency Oral Exam; 21 and older			700131	
Palliative (emergency) treatment of dental pain — minor procedures		D9110	709110	D9110
Emergency treatment - palliative per visit	*080*			
Catastrophic dental procedure, by report		Y0087		
Periodontics: Emergency treatment (periodontal abscess, acute periodontitis, etc)	*451*			
Professional visits after hours or to bedside	*030*			
Services requested after office hours in addition to basic services				99050
Services requested between 10:00 pm and 8:00 am in addition to basic services				99052
Emergency department service, new patient; minimal service				90500
Emergency department service, new patient; brief service				90505
Emergency department service, new patient; limited service				90510
Emergency department service, new patient; intermediate service				90515
Emergency department service, new patient; extended service				90517
Emergency care facility services: when the non-hospital based physician is in the hospital, but is involved patient care elsewherea and is called to the emergency facility to provide emergency services				99062
Emergency care facility services: when the non-hospital based physician is called to the emergency facility from outside the hospital to provide emergency services; not during regular office hours				99064
Emergency care facility services: when the non-hospital based physician is called to the emergency facility from outside the hospital to provide emergency services; during regular office hours				99065
Manipulative treatment of nasal bone fracture; with stabilization				21320
Open treatment of nasal fracture; with concomitant open treatment of fractured septum				21335
Treatment of malar fracture, simple or compound depressed, open reduction	*916*			
Treatment of Fracture, Simple: Malar and/or zygomatic arch; closed reduction			707660	
Treatment of Fracture, Compound: Malar and/or zygomatic arch; closed reduction			707760	
Treatment of closed or open nasoethmoid fracture; with splint, wire or headcap fixation, including repair of canthal ligaments and/or the nasolcrimal apparatus				21340
Manipulative treatment of closed or open fracture of malar area, including zygomatic arch and malar tripod				21355
Open treatment of closed or open complicated, (eg, multiple) fractures of malar area, including zygomatic arch and malar tripod, with internal skeletal fixation and multiple surgical approaches				21365

Description/Title	California	Georgia	Michigan	Tennessee
Open treatment of orbital floor "blowout" fracture; transtral approach (Caldwell-Luc) type operation				21385
Open treatment of fracture of orbit, except "blowout"; without implant.				21406
Treatment of Fracture, Simple: Alveous, stabilization of teeth; open reduction splinting			707670	
Treatment of Fracture, Compound: Alveous, stabilization of teeth; open reduction splinting			707770	
Treatment of palatal or alveolar ridge fracture (Lefort I type); closed manipulation with interdental wire fixation or denture or splint				21421
Treatment of palatal or alveolar ridge fracture (Lefort I type); open treatment				21422
Manipulative treatment of alveolar ridge fracture (separate procedure)				21440
Open treatment of alveolar ridge fracture (separate procedure)				21445
Treatment of closed or open mandibular fracture; without manipulation				21450
Treatment of closed or open mandibular fracture; with manipulation, may include external fixation				21451
Closed manipulative treatment by interdental fixation of closed or open mandibular fracture				21455
Open treatment of closed or open mandivular fracture; without interdental fixation				21461
Open treatment of closed or open mandivular fracture; with interdental fixation				21462
Open treatment of mandibular condylar fracture				21465
Open treatment of complicated closed or open mandibular fracture by multiple surgical approaches including internal fixation, interdental fixation, and/or wiring dentures or splints				21470
Complicated manipulative treatment of temporomandibular dislocation, intial or subsequent				21485
Reduction of dislocation of temporomandibular joint	*913*			
Closed reduction of dislocation (of other temporormandibular joint dysfunctions)		D7820		
Treatment of simple fracture of the maxilla, open reduction	*900*			
Fracture, maxilla open reduction wiring and fixation				Y2117
Treatment of fracture: maxilla, open reduction (teeth immobilized if present		D7610	707610	
Treatment of simple fracture of the maxilla, closed reduction	*901*			
Treatment of fracture: maxilla, closed reduction (teeth immobilized if present		D7620	707620	
Treatment of simple fracture of the mandible, open reduction	*902*			
Fracture, mandible open reduction with or without wiring of teeth				Y2118
Treatment of fracture: mandible, open reduction (teeth immobilized if present		D7630	707630	
Treatment of simple fracture of the mandible, closed reduction	*903*			
Treatment of fracture: mandible, closed reduction (teeth immobilized if present		D7640	707640	
Treatment of fracture, Simple: Facial bones, complicated reduction			707680	

Description/Title	California	Georgia	Michigan	Tennessee
Treatment of fracture, Compound** or comminuted: **maxilla, open reduction	*905*			
Treatment of fracture, Compound** or comminuted: **maxilla, closed reduction	*904*			
Treatment of fracture, Compound** or comminuted: **mandible, open reduction	*907*			
Treatment of fracture, Compound** or comminuted: **mandible, closed reduction	*906*			
Suture of recent small wounds up to 5cm		D7910	707910	
Closure of laceration, vestibule of mouth; 2.5cm or less				40830
Closure of laceration, vestibule of mouth; over 2.5cm or complex				40831
Repair of laceration 2.5cm or less, floor of mouth and/or anterior two-thirds of tongue				41250
Repair of laceration of tongue, floor of mouth, over 2.6cm or complex				41252
Repair, palate or uvula; over 2cm or complex				42182
Elevation of depressed skull fracture; compound or comminuted, extradural				62005
Misc codes mapped to Emergency				
Radiologic examination, hand; two views				73120
SURGERY				
Musculoskeletal Sytem-Hands & Fingers				
Anthrotomy, for infection, with exploration, drainage or removal of foreign body; carpometacarpal joint				26070
Musculoskeletal Sytem-Respiratory System				
Unlisted procedure, arthoscopy				29909
MISCELLANEOUS CODES NOT IN ABOVE CATEGORIES				
General non-conforming procedures				Y2111
No Code Descriptions Found				
No Description Found	*000*	00000	707750	42281

Description/Title	California	Georgia	Michigan	Tennessee
DIAGNOSTIC				
Examination				
Examination paid only for Initial episode of treatment for complete case presentation	010			
Initial oral exam	**D0110**	D0110	700110	
Initial oral exam >21 years old			700114	
Diagnostic examination; mapped from T3 CA claims data	015			
Periodic oral exam		D0120	700120	D0120
Visit (partial denture maintainence); age 21 and over			700121	
Dental management of difficult children and adults, 30 minutes		Y0001		
Dental management of difficult children and adults, 1 hour		Y0091		
Dental management of difficult children and adults, 2 hours		Y0092		
Dental management of difficult children and adults, 4 hours		Y0093		
Dental management of difficult children and adults, 3 hours		Y0094		
Assessment for dental treatment approval		Y0035		
Office Medical Services				
Office visit for observation (during regularly scheduled hours) no other services provided	**D9430**			
Office medical service, new patient; brief service				90000
Office medical service, new patient; limited service				90010
Office medical service, new patient; intermediate service				90015
Office medical service, established patient; minimal service				90030
Office medical service, established patient; brief service				90040
Office medical service, established patient; limited service				90050
Office medical service, established patient; intermediate service				90060
Radiographs				
Single film	110			
Additional film, up to 12 films, each	111			
Entire denture series consisting of at least 14 films plus bite wing films **	112			
**also lists this code description as: Panographic type film with periapical of anterior teeth plus bite wing films	112			
Intraoral — complete series (including bitewing) [Full mouth series]	**D0210**	D0210	700210	D0210
Intraoral — periapical, first film	**D0220**	D0220		D0220
Intraoral — periapical each additional film	D0230			D0230
Intraoral — occlusal, single, first film (1 film)	**D0240**	D0240	700240	
Intraoral, occlusal view, maxillary or mandibular, each	113			
Intraoral — occlusal, single, 2 films			700241	
Intraoral/Extraoral — full series (panoramic and a minimum of 2 bitewings and 4 anterior periapicals			700211	
Intraoral — edentulous complete series (10 films)			700212	
Intraoral series — 12 to 15 films			700213	
Intraoral series — 8 to 11 films			700214	
Intraoral — 1 film (bitewing or periapical)			700221	
Intraoral — 2 films (bitewing or periapical)			700222	
Intraoral — 3 films (bitewing or periapical)			700223	
Intraoral — 4 films (bitewing or periapical)			700224	
Intraoral — 5 films (bitewing or periapical)			700225	
Intraoral — 6 films (bitewing or periapical)			700226	
Intraoral — 7films (bitewing or periapical)			700227	

Description/Title	California	Georgia	Michigan	Tennessee
Extraoral — first film	**D0250**		700250	
Extraoral — each additional film			700260	
Superior or inferior maxillary, extraoral head or lateral jaws, 1 film	114			
Superior or inferior maxillary, extraoral head or lateral jaws, 2 film	115			
Periapical, 1 film				
Periapical, 2 films		YY112		
Periapical, 3 films		YY113		
Periapical, 4 films		YY114		
Periapical, 5 films		YY115		
Periapical, 6 films		YY116		
Bitewing — single, first film	**D0270**	D0270		D0270
Bitewing — 2 films	**D0272** 116	D0272		**D0272**
Bitewing — 3 films				**D0273**
Bitewing — 4 films	**D0274** 117	D0274		**D0274**
Bitewing — each additional film		D0275		D0275
Panoramic Film	**D0330**	D0330	700330	D0330
Panoramic type film, additional film, each	125			
Radiologic examination, mandible; partial, less than four views				70100
Radiologic examination, facial bones; less than three views				**70140**
Radiologic examination, sinuses, paranasal, complete, minimum of three views				70220
Radiologic examination, teeth; single view				70300
Radiologic examination, teeth; partial examination, less than full mouth				70310
Radiologic examination, teeth; complete, full mouth				**70320**
Temporomandibular Joint series X-ray	955			
Radiologic examination, temporomandibular joint, open and closed mouth; unilateral				70328
Radiologic examination, temporomandibular joint, open and closed mouth; bilateral				70330
Temporomandibular joint arthrography; supervision and interpretation only				70332
Temporomandibular joint arthrography; complete procedure				70333
Cephalogram film	**D0340**		700340	
Cephalogram, orthodontic				70350
Cephalometric head film, one view	956			
Cephalometric head film, each additional view	957			
Orthopantogram				70355
Radiologic examination, salivary gland for calculus				**70380**
Other Radiographs			700390	
Radiologic examination, single plane body section (eg, tomography), other than with urography				**76100**
Radiolgic exam, complex motion body section, other than with urography; bilateral				76102
Miscellaneous: Consultation on x-ray examination made elsewhere, written report				76140
X-ray;mapped from T3 CA claims data	118			
X-ray;mapped from T3 CA claims data	119			
X-ray;mapped from T3 CA claims data	120			

Description/Title	California	Georgia	Michigan	Tennessee
Nasal endoscopy, diagnostic (includes examination of the medial meatus, infundibulum and sius ostia)				31250
Laryngoscopy, flexible fiberoptic; diagnostic				31575
Unlisted procedure, accessory sinuses				31299
Cleft Palate Orthordontic Services - Diagnostic				
Malocclusion cases: diagnostic work-up, H.F., photos and study models (FMS extra at State fee schedule)	550			
Cleft palate cases: Primary detention, diagnostic work-up, H.F., photos and study models	560			
Facial growth management: diagnostic work-up, FMS extra at state fee schedule	590			
Maxillofacial Dental Services - Diagnostic				
Clinical examination and consultation, including study models	950			
Prosthetic evaluation and treatment plan, including study models	952			
Occlusal Analysis, including study models	990			
Space Maintainers - Diagnositc				
Space Maintainers: Study Models	**803**			
Consultations				
Initial Consultation; limited				90600
Initial Consultation; intermediate				90605
Initial Consultation; complex				90630
Professional consultation, diagnostic services provided by dentist or physician other than practitioner providing treatment; per session	**D9310**		709310	
Special consultation (by specialist for case presentation when treatment is not performed by the specialist)	040			
Tests and Laboratory Examinations				
Biopsy of oral tissue	150			
Biopsy of oral tissue; soft			700440	
Oral Surgery: Biopsy of oral tissure; hard			**707285**	
Biopsy of skin, subcutaneous tissue and/or mucous membrane (including simple closure), unless otherwise listed (separate procedure); one lesion				**11100**
Biopsy of lip				40490
Biopsy, vestibule of mouth				40808
Biopsy of tongue; anterior two-thirds				**41100**
Biopsy of tongue; posterior one-third				**41105**
Biopsy of palate, uvula				**42100**
Pulp vitality tests			700460	
Diagnostic cast; single			700469	
Diagnostic casts			700470	
Microbiology				
Histopathologic Examination	**D0501**			

Description/Title	California	Georgia	Michigan	Tennessee
Gross and microscopic pathological report	160			
Culture, bacterial, definitive;any other source {than blood, stool, throat or nose}				87070
Virus identification; inoculation of embryonated eggs, or small animal, includes observation and dissection				87250
Medicine: Gastroenterology				
Esophageal motility study				91010
Medicine: Neurology and Neuromuscular Procedures				
Electromyography, limited study of specific muscles (eg, thoracic spinal muscles)				95869
NOTE: Biopsy codes D7286 (GA) and 20205/20220 (TN) are listed under Therapeutic, all other biopsy codes are listed under Diagnostic				

Description/Title	California	Georgia	Michigan	Tennessee
PREVENTIVE				
Prophylaxis — adults	**D1110**	D1110	701110	D1110
Prophylaxis — children		D1120	701120	not in claims
Prophylaxis — children to age 14	049			
Prophylaxis — to include scaling and polishing	050			
Topical Floride Treatments (Office Procedure)				
Topical applications of fluoride (one treatment including prophylaxis under age of 4)	061			
Topical applications of fluoride (including prophylaxis) — child	062			
Topical applications of fluoride (excluding prophylaxis) — child		D1203		**D1203**
Topical applications of fluoride (excluding prophylaxis) — adult				
Topical application of fluoride liquid stannous or other				Y2119
Topical application of stannous fluoride, one treatment, (excluding trophy)		D1220		
Topical application of stannous fluoride, one treatment, (excluding prophylaxis)			701220	
Topical application of acid flouride phosphate; one treatment		D1230		
Topical application of acid flouride phosphate; one treatment (excluding prophylaxis)			701230	
General				
Sealant — per tooth			**701351**	D1351
Space Maintenance (Passive Appliances)				
Space Maintainer —Fixed-unilateral		D1510	701510	D1510
Space Maintainer —Fixed-unilateral, band type	800			
Space Maintainer —Fixed; lingual or palatal arch band type			701511	
Space Maintainer —Fixed; lingual or palatal bar type	812			
Space Maintainer —Fixed; stainless steel crown type			701512	
Space Maintainer —Fixed-unilateral, satinless steel crown type	811			
Space Maintainer —Fixed-bilateral	**D1515**	D1515	701515	D1515
Space Maintainer —Fixed-bilateral; stainless steel crown type			701516	
Space Maintainer —Removable; bilateral		D1525		
Space Maintainer —Removable, acrylic	801		701530	
Recementation of Space Maintainer		D1550		**D1550**
Remove space maintainer by other than inserting doctor		Y1551		
Adjustment to space maintainer by other than inserting doctor		Y1552		
Repair space maintainer by other than inserting doctor		Y1553		
Additional clasps	802			
Fixed or removable inhibiting applicance to correct thumbsucking	832			

Description/Title	California	Georgia	Michigan	Tennessee
THERAPEUTIC				
Treatment and observations of injuries to teeth and supporting structure, other than placement of steel crown, pulpotomy, etc. — postoperative care beyond that normally provided as a part of the basic procedure	020			
Office medical service, new patient; extended service				90017
Office medical service, new patient; comprehensive service				90020
Office medical service, established patient; extended service				90070
Office medical service, established patient; comprehensive service				90080
Hospital Medical Services				
Hospital time facility charge; 30 minutes		Y0075		
Hospital time facility charge; 1 hour		Y0090		
Hospital time facility charge; 2 hours		Y0095		
Hospital time facility charge; 3 hours		Y0088		
Hospital care, hourly fee for time spent in hospital operative suite per hour (fee for service in addition)	035			
Hospital visit - 61 to 90 minutes			**709451**	
Hospital visit - 91 to 120 minutes			**709452**	
Hospital visit - 121 to 150 minutes			**709453**	
Hospital visit - 151 to 180 minutes			**709454**	
Hospital visit - over 180 minutes			**709455**	
Initial hospital care, per day, brief history and exam, initiation of diagnostic and treatment programs, and preparation of hospital records				**90200**
Initial hospital care; intermediate history and examination, initiation of diagnostic and treatment programs, and preparation of hospital records				90215
Initial hospital care; comprehensive history and examination, initiation of diagnostic and treatment programs, and preparation of hospital records				90220
Subsequent hospital care, each day; brief services				90240
Subsequent hospital care, each day; limited services				90250
Subsequent hospital care, each day; intermediate services				90260
Subsequent hospital care, each day; extended services				90270
Subsequent hospital care, each day; comprehensive services				**90280**
Hospital call			709420	
Hospitalizaion			709450	
Hospital discharge day management				90292
Consultations				
Initial Consultation; extended				90610
Initial Consultation; comprehensive				90620
Follow-up consultations; brief				90640
Follow-up consultations; intermediate				90642
Follow-up consultations; complex				**90648**

Description/Title	California	Georgia	Michigan	Tennessee
Special Services and Reports-Miscellaneous				
Handling, conveyance, and/or any other service in connection with the implementation of an order involving devices when fabricated by outside laboratory/shop, but which items have been designed and are to be fitted and adjusted by the attending physician				99002
Post-op follow-up visit, included in global service				99024
Critical Care, subsequesnt follow-up visit; limited examination, evaluation and/or treatment, same or new illness				99172
Medicine: Special Services and Reports; Prolonged Services				
Prolonged physician attendance requiring physician detention beyond usual service (eg, operative standby, monitoring ECG, EEG, intrathoracic pressures, intravascular pressures, blood gases during surgery); 30 minutes to one hour				**99150**
Prolonged physician attendance requiring physician detention beyond usual service (eg, operative standby, monitoring ECG, EEG, intrathoracic pressures, intravascular pressures, blood gases during surgery); more than one hour				**99151**

Description/Title	California	Georgia	Michigan	Tennessee
Amalgam — one surface (includes polishing), primary	D2110 600	D2110	702110	D2110
Amalgam — two surfaces (includes polishing), primary	D2120 601	D2120	702120	D2120
Amalgam — three surfaces (includes polishing), primary	D2130 602	D2130	702130	D2130
Amalgam — four surfaces (includes polishing), primary	D2131	D2131		D2131
Amalgam — cavities involving four or more tooth surfaces; primary	603			
Amalgam — one surface (includes polishing), permanent	D2140 611	D2140	702140	D2140
Amalgam — two surfaces (includes polishing), permanent	D2150 612	D2150	702150	D2150
Amalgam — three surfaces (includes polishing), permanent	D2160 613	D2160	702160	D2160
Amalgam — four or more surfaces (includes polishing), permanent	D2161 614	D2161		D2161
Amalgam — pin retained			702170	
Filling				
Acid etch — one restoration, per tooth				Y2101
Acid etch — two restorations, per tooth				Y2102
Acid etch — three restorations, per tooth				Y2103
Composite or acid etching including edg			702333	
Pin retained - composite			**702334**	
Silicate Restoration				
Silicate cement, per restoration	640		702210	
Two or more silicate restorations in a single tooth-maximum	641			
Acrylic or Plastic Restorations				
acrylic or plastic restoration (filling)	645		702310	
acrylic or plastic restoration (involving incisal angle)			702320	
Two or more acrylic or plastic fillings in a single tooth - maximum	645			
Silicate, acrylic, plastic restoration: pin retention, per tooth, additional (when necessary and when final restoration is amalgam, plastic or composite)	648			
Filled or Unfilled Resin Restorations				
Resin — one surface		D2330	702330	D2330
Resin — two surfaces		D2331	702331	D2331
Resin — three surfaces		D2332	702332	D2332
Resin — three surfaces				
Resin — four or more surfaces or involving incisal angle		D2335		
Resin — one surface, posterior-primary		**D2380**		
Resin — two surfaces, posterior-primary		**D2381**		
Resin — three surfaces or more surfaces, posterior-primary		**D2382**		
Resin — one surface, posterior-permanent		**D2386**		
Resin — two surfaces, posterior-permanent		**D2386**		
Resin — three surfaces or more surfaces, posterior-permanent		**D2387**		
Not otherwise classified acrylic or plastic restoration			702399	

Description/Title	California	Georgia	Michigan	Tennessee
Crowns				
Note: CDS does not pay for facings on crowns, posterior to 2nd bicuspids				
Acrylic	650			
Acrylic with metal	651			
Porcelain	652			
Porcelain with metal	653			
Crown: cast (full)	660			
Crown: three-quarter cast	663			
Stainless steel — primary	670			Y2104
Stainless steel — permanent	671			Y2105
Gold dowel pin	672			
Fixed stainless steel crown type				Y2106
Crowns — Single Restorations Only				
Crown — single restoration only; resin (laboratory)		D2710	702710	D2710
Crown—single restoration only; plastic, prefabricated			702711	
Crown — single restoration only; porcelain fused to noble metal				D2750
Crown—single restoration only; stainless steel			702830	
Crown—single restoration only; stainless steel with window and composite (anterior only)			702831	
Crown—single restoration only; temporary, fractured tooth		See below	702840	
Crown—single restoration only; Post and Core, non-precious metal (cast or steel)			702893	
Crown—single restoration only; not otherwise classified			702899	
Other Services				
Recement - inlays			**702910**	
Recement - Crown		D2920	702920	**D2920**
Prefabricated stainless steel crown; primary tooth	**D2930**	D2930		**D2930**
Prefabricated stainless steel crown; permanent tooth	**D2931**	D2931		**D2931**
Prefabricated resin crown		D2932		
Sedative filling		D2940	702940	
Crown build-up, including any pins				D2950
Pin retention — per tooth, in addition to restoration	**D2951**	D2951		**D2951**
Cast post and core in addition to crown				**D2952**
Prefabricated post and core in addition to crown				**D2954**
Temporary (fracture tooth)		D2970	see above, 702840	
Crown repair, by report				**D2980**
Unspecified restorative procedure, by report		D2999		D2999

Description/Title	California	Georgia	Michigan	Tennessee
ENDODONTICS				
Pulp cap — direct (excluding final restoration)		D3110	703110	D3110
Pulp cap — indirect (excluding final restoration)	D3120	D3120		
Therapeutic Pulpotomy (excluding all final restoration)	D3220	D3220	703220	D3220
Therapeutic Pulpotomy (in addition to restoration, per treatment)	501			
Vital Pulpotomy	502			
Root Canal Therapy (Includes Treatment Plan, Clinical Procedures, and Follow-up Care				
One canal (excluding final restoration)	D3310	D3310	703310	D3310
Two canals (excluding final restoration)		D3320	703320	D3320
Three canals (excluding final restoration)	D3330	D3330	703330	D3330
Single rooted tooth canal therapy	511			
Birooted rooted tooth canal therapy	512			
Trirooted tooth canal therapy	513			
Apexification (per treatment visit)	534		703350	D3350
Therapeutic apical closure (followup and final procedure excludes root canal therapy)			703351	
Root canal therapy; not otherwise classified			703399	
Periapical Series				
Apicoectomy (including filling of root canal)	530			
Apicoectomy (separate procedure) (allowances do not include final restoration or necessary roentgenograms)	531			
Apicoectomy (per tooth); first tooth		D3410	703410	D3410
Apicoectomy (per tooth); each additional tooth		D3411		
Apicoectomy with endodontic manipulation			703420	
Apicoectomy/periradicular surgery (each additional root)		D3426		
Retrograde filling - per root				D3430
Other Endontic Procedures				
Endontics: recalcification (CaOH, temporary restoration) per tooth	503			
Unspecified endontic procedure, by report		D3999		D3999
Endodontics (Pulp capping, Root Canals), general or unspecific; mapped from T3 claims data	500			
PERIODONTICS				
Surgical				
Subgingival crettage, root planning (not prophylaxis)	452			
Gingivectomy or gingivoplasty — per quadrant		D4210		D4210
Gingivectomy — per quadrant (including post surgical visits	472			
Gingivectomy, treatment per tooth (fewer than six teeth)	474			
Gingival curettage, by report		D4220	704220	
Gingivectomy, osseous or muco-gingival surgery per quadrant (includes postsurgical visits)	473			
Osseous surgery (including flap entry and closure); per quadrant		D4260		D4260
Osseous graft —single site (including flap entry, closure, and donor site)		D4261		
Osseous graft —multiple sites (including flap entry, closure, and donor site)		D4262		
Pedicule soft tissue graft procedure		D4270		
Free soft tissue graft procedure		D4271		

Description/Title	California	Georgia	Michigan	Tennessee
Adjunctive Periodontal Services				
Periodontal scaling and root planning; entire mouth			704340	
Periodontal scaling and root planning — per quadrant		D4341	704341	D4341
Periodontal scaling performed in the presence of gingival inflammation		**D4345**		
Other Periodontal Services				
Periodontal maintenance procedures following active therapy (periodontal prophylaxis)		D4910		
Periodontics: Correction of occlusion	453			
PROSTHODONTICS REMOVABLE				
Complete Denture (Including Routine Postdelivery Care)				
Complete upper	**700**	D5110	705110	**D5110**
Complete lower	**701**	D5120	705120	**D5120**
Immediate upper		D5130		
Immediate lower		D5140		
Partial Denture (Including Routine Postdelivery Care)				
Upper acrylic base w/wrought iron clasps		**D5201**		
Lower acrylic base w/wrought iron clasps		**D5202**		
Upper partial — acrylic base (including any conventional clasps and rests)		D5211		D5211
Lower partial — acrylic base (including any conventional clasps and rests)		D5212		D5212
Upper partial, predominantly base cast with acrylic saddles (including any conventional clasps and rests)		D5213		**D5213**
Lower partial, predominantly base cast with acrylic saddles (including any conventional clasps and rests)		D5214		**D5214**
Upper partial, high noble cast base with acrylic saddles (including any conventional clasps and rests)		D5215		
Removable unilateral partial denture — one piece predominantly base casting, clasp attachments — per unit (including pontics)		D5281		D5281
Lower with chrome lingual bar and two clasps, acrylic base				Y2107
Upper with chrome palatal bar and two clasps, acrylic base				Y2108
Upper partial denture with wrought iron clasp, acrylic base				Y2112
Lower partial denture with wrought iron clasp, acrylic base				Y2113
Partial upper or lower with wrought wire clasps and acrylic saddle (no rests)	**708**			
Upper or lower with 2 or more gold or chrome clasps with rest, acrylic saddle			705210	
Partial Denture, upper ot lower, 2 clasps			**705220**	
Lower with gold or chrome lingual bar and two or more clasps, acrylic saddle with teeth			705230	
Lower with gold or chrome lingual bar and two or more clasps, cast saddle with teeth			705240	
Upper with gold or chrome lingual bar and two or more clasps, acrylic saddle with teeth			705250	
Partial lower or upper denture with chrome cobalt alloy lingual or palatal bar and acrylic saddles-base	703			
Teeth and clasps-extra per unit (T3 maps to partials)	704			
Teeth and clasps-extra per unit (T3 maps to partials)	716			
Something to do with Dentures--Not otherwise classified			**705399**	

Description/Title	California	Georgia	Michigan	Tennessee
Adjustments to Dentures				
Denture adjustment	720			
Adjust complete denture; upper		D5410		
Adjust complete denture; lower		D5411		
Adjust partial denture			705420	
Adjust partial denture; upper		D5421		
Adjust partial denture; lower		D5422		
Repairs to Complete Dentures				
Repair broken complete denture base		D5510		
Repairs to Partial Dentures				
Repair acrylic saddle or base			705610	D5610
Repair cast framework			705620	D5620
Repair or replace broken clasp			705630	D5630
Replace broken tooth — per tooth		D5640	705640	D5640
Add tooth to existing partial denture		D5650	**705650**	D5650
Add clasp to existing partial denture tooth, involving clasp or abutment tooth		**D5660**		
Reattaching damaged clasp on denture				Y2109
Replacing broken clasp with new clasp on denture			705680	Y2110
Denture Reline Procedures				
Office reline--cold cure-acrylic	721			
Hot cure denture reline (laboratory procedure)	722			
Reline upper complete denture (laboratory)		D5750	705750	**D5750**
Reline lower complete denture (laboratory)		D5751		
Reline upper partial denture (laboratory)			705760	
Reline lower partial denture (laboratory)				**D5761**
Other Removable Prosthetic Services				
Tempoary complete denture; upper			**705810**	
Temporary partial, stayplate denture; upper			705820	
Stayplate-base	706			
Obturator for sugically excised palatal tissue			705830	
Obturator for deficient velopharyngeal function (cleft palate)			705840	
Recementation: inlay	685			
Recementation: Crown	686			
Recementation: Bridge	687			
Repairs-based on time and laboratory charges	690			
Replace broken Tru-pontic	694			
Replace broken Steele's facing where post backing is intact	695			
Replace broken Steele's facing where post backing is broken	**696**			
Special tissue conditioning, per denture in addition to reline (maximum 2 per denture)	723			
Tissue conditioning — per denture unit		**D5850**		
Unspecified removable prosthodontic precedure, by report		D5899	705899	**D5899**
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	750			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	751			

Description/Title	California	Georgia	Michigan	Tennessee
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	752			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	753			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	754			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	755			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	**756**			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	757			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	759			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	760			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	761			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	762			
Prosthodontic Removable (complete/partial dentures, other procedures to dentures, other prosthetic services) General or unspecific; mapped from T3 claims data	763			
Prosthodontics-fixed				
Pins — 1 or more				Y2100
Prosthodontic Fixed (Bridges, crowns) General or unspecific; mapped from T3 claims data	692			
Intraoral Prostheses — Congenital Defects				
Obturator				D5956
Maxillofacial Dental Services-Prosthetic				
Cleft palate prosthesis: transitional speech applicance with pharyngeal extension	960			
Cleft palate prosthesis: Adult speech appliance, partially edentulous, cast	964			
Cleft palate prosthesis: Palatal lift, interim	966			
Cleft palate prosthesis: Palatal lift, cast chrome framework	968			

Description/Title	California	Georgia	Michigan	Tennessee
Maxillary prosthetic reconstruction: immediate fsurgical obtutator, includes follow-up care and revisions first 90 days post operative, routine	970			
Maxillary prosthetic reconstruction: immediate fsurgical obtutator, includes follow-up care and revisions first 90 days post operative, complex	971			
Maxillary prosthetic reconstruction: Definitive obturator proshesis, partial maxillary resection	972			
Maxillary prosthetic reconstruction: Definitive mandibular resection prosthesis, partial endentulous, complex	975			
Maxillary prosthetic reconstruction: removable facial prosthesis	977			
Maxillary prosthetic reconstruction: splints and stents	978			
Maxillary prosthetic reconstruction: Radiation therapy flouride carrier	979			
Maxillary prosthetic reconstruction: repair broken appliance	980			
Maxillary prosthetic reconstruction: processed rebase of appliance	981			
Surgical Services				
Surgical: maxillofacial oral surgical services; including operative report when billing	985			
TMJ Dysfunction Management				
Temporomandibular Joint Dysfunction Management: Occlusal equilibration, limited centric and excursive adjustments	992			
Temporomandibular Joint Dysfunction Management: Post operative visit, symptomatic care and counseling	996			
Temporomandibular Joint Dysfunction Management: Unlisted therapeutic service	998			

Description/Title	California	Georgia	Michigan	Tennessee
ORAL SURGERY				
Extractions — Includes Local Anesthesia and Routine Postop Care				
Single tooth	D7110 200	D7110	707110	D7110
Each additional tooth	D7120 201	D7120	707120	D7120
Root removal, exposed root	D7130		707130	D7130
Surgical Extractions — Includes Local Anesthesia and Routine Postop Care				
Supernumerary tooth, simple extraction			707140	
Supernumerary tooth, surgical extraction			707215	
Supernumerary tooth (this is all the TN formulary codes said)				Y2115
Surgical removal of erupted teeth (Enclose x-ray)	202			
Surgical extraction-supernumerary tooth, soft tissue; impacted			707216	
Surgical extraction-supernumerary tooth, partially boney; impacted			707217	
Surgical extraction-supernumerary tooth, completely boney; impacted			707218	
Surgical removal of erupted tooth requiring elevation of mucoperiosteal flap and removal of bone and/or section of tooth	D7210	D7210	707210	D7210
Removal of impacted tooth — soft tissue	230	D7220	707220	D7220
Removal of impacted tooth — partially bony	231	D7230	707230	D7230
Removal of impacted tooth — completely bony	232	D7240	707240	D7240
Surgical removal of residual tooth roots (cutting procedure)		D7250	707250	D7250
Oral Surgery: extractions; mapped from T3 claims data	203			
Oral Surgery: extractions; mapped from T3 claims data	204			
Other Surgical Procedures				
Oroantral fisula closure		D7260	707260	
Tooth re-implantation and/or stabilization of accidentally evulsed or displaced tooth and/or alveolus	273	D7270	707270	D7270
Transplantation of tooth or tooth bud	275			
Surgical exposure of impacted or unerupted tooth for orthodontic reasons (including orthodontic attachments)		D7280		D7280
Surgical exposure of impacted or unerupted tooth to aid eruption				D7281
Crown exposure, soft tissue	296			
Crown exposure, partially bony	297			
Crown exposure, fully bone or ecotopic eruption	298			
Oral Surgery: Biopsy of oral tissure; soft		D7286	707286	D7286
Sequestrectomy for osteomyelitis or bone abcess, superficial	282			
Other surgical procedure; not otherwise classifed			707299	
Alveolar or gingival reconstruction (includes local anesthesia and postoperative visits)				
Alveolectomy (edentulous) per quadrant	250			
Alveolectomy (in addition to removal of teeth) per quadrant	252			
Removal of mandibular tori (per quadrant)	258			

Description/Title	California	Georgia	Michigan	Tennessee
Alveoplasty — Surgical Preparation of Ridge for Dentures				
Alveoplasty in conjunction with extractions; per quadrant		D7310		**D7310**
Alveoplasty not in conjunction with extractions; per quadrant		D7320		**D7320**
Surgical Excision of Reactive Inflammatory Lesion (Scar Tissue or Localized Congenital Lesions)				
Radical excision; lesion diameter up to 1.25cm			707410	
Radical excision; lesion diameter over 1.25cm			707420	
Removal of Tumors, Cysts and Neoplasms				
Resection of benign tumor of soft tissue (smaller than 2.5cm)	269			
Resection of benign tumor of soft tissue (2.5cm or larger)	270			
Excision of benign tumor; lesion diameter up to 1.25cm		D7430	707430	**D7430**
Excision of benign tumor; lesion diameter over 1.25cm			707431	
Excision of benign tumor; lesion diameter 2.1cm to 3cm			**707432**	
Excision of benign tumor; lesion diameter 3.1cm to 4cm			**707433**	
Excision of cyst (small)	280			
Excision of cyst (large)	281			
Removal of odontogenic cyst or tumor; lesion diameter up to 1.25cm		D7450	707450	**D7450**
Removal of odontogenic cyst or tumor; lesion diameter over 1.25cm		D7451	707451	
Removal of nonodontogenic cyst or tumor; lesion diameter up to 1.25cm		D7460	707460	
Removal of nonodontogenic cyst or tumor; lesion diameter over 1.25cm		D7461	**707461**	
Excision of Bone Tissue				
Removal of exotosis — maxilla or mandible		**D7470**		**D7470**
Partial ostectomy (guttering or saucerization)		**D7480**		
Radical Resection of mandible with bone graft			**707490**	
Excision of Bone tissue; not otherwise classified			707499	
Reduction of Dislocation and Management of Other Temporomandibular Joint Dysfunctions				
Other temporomandibular joint: closed reduction of dislocation			707820	
Other temporomandibular joint: manipulation under anesthesia			707830	
Injection of sclerosing agent into temporomandibular joint	294			
Suture of soft tissue wound or injury	292			
Complicated Suturing (Reconstruction Requiring Delicate Handling of Tissues and Wide Undermining for Meticulous Closure)				
Suture; up to 5 cm			707911	
Suture; over 5cm		D7912	707912	
Other Repair Procedures				
Osteotomy — ramus, open		**D7942**		
Frenulectomy (frenectomy or frenontomy); separate procedure	291	D7960	707960	**D7960**
Intraoral incision and drainage of abcess	260			
Extraoral incision and drainage of abcess	261			
Excision of hyperplastic tissue; per arch	259	D7970	**707970**	
Excision of percoronal gingiva		D7971		
Sialolithotomy	262		707980	
Excision of Salivary gland			707981	
Sialolithotomy: removal of salivary calculus, intraorally	263			
Sialodochoplasty			**707982**	

Description/Title	California	Georgia	Michigan	Tennessee
Tuberosity reduction	267			
Removal of foreign body from bone (independant procedure)	276			
Incision and removal of foreign body from soft tissue	290			
Maxillary sinusotomy for removal of tooth fragment or foreign body	278			
Closure of oral fistula of maxillary sinus	279			
TSA NOC (not otherwise classified)			**707988**	
Surgery Procedures - Integumentary System				
Incision and drainage of abscess; simple				10060
Puncture aspiration of abscess, hematoma, bulla or cyst				10160
Incision and drainage, complex, postoperative wound				**10180**
Debridement; skin, full thickness				11041
Debridement; skin, and subcutaneous tissue				**11042**
Debridement; skin, and subcutaneous tissue, and muscle				**11043**
Debridement; skin, subcutaneous tissue, muscle, and bone				11044
Excision, other benign lesion, face ears, eyelids, nose lips, mucous membrane; lesion diameter 0.5cm or less				11440
Excision, other benign lesion, face ears, eyelids, nose lips, mucous membrane; lesion diameter 0.6cm to 1.0cm				11441
Excision, other benign lesion, face ears, eyelids, nose lips, mucous membrane; lesion diameter 1.1 to 2.0 cm				**11442**
Excision, other benign lesion; lesion diameter 2.1cm to 3.0cm				11443
Excision, other benign lesion, face ears, eyelids, nose lips, mucous membrane; lesion diameter 3.1 to 4.0cm				**11444**
Integumentary System-Misc				
Injection, intralesional; up to and including seven lesions				**11900**
Simple repair of superficial wounds of scalp, neck, axillae, external genitalia, trunk and/or extremities (including hands & feet); 2.5cm or less				12001
Simple repair of superficial wounds of face, ears, eyelids, nose, lips, and/or mucous membranes; 2.5cm or less				12011
Simple repair of superficial wounds of face, ears, eyelids, nose, lips, and/or mucous membranes; 2.6cm to 5.0cm				12013
Simple repair of superficial wounds of face, ears, eyelids, nose, lips, and/or mucous membranes; 5.1cm to 7.5cm				12014
Simple repair of superficial wounds of face, ears, eyelids, nose, lips, and/or mucous membranes; over 30.0cm				12018
Layer closure of wounds of scalp, axillae, trunk, and/or extremities (excluding hands & feet); 2.5cm or less				12032
Layer closure of wounds of scalp, axillae, trunk, and/or extremities (excluding hands & feet); 12.6cm to 20.0cm or less				12035
Layer closure of wounds of face, ears, eyelids, nose, lips and/or mucous membranes; 2.5cm or less				12051
Layer closure of wounds of face, ears, eyelids, nose, lips and/or mucous membranes; 2.6 to 5.0cm				12052
Layer closure of wounds of face, ears, eyelids, nose, lips and/or mucous membranes; 5.1cm to 7.5cm				12053
Layer closure of wounds of face, ears, eyelids, nose, lips and/or mucous membranes; 7.6cm to 12.5cm				12054
Layer closure of wounds of face, ears, eyelids, nose, lips and/or mucous membranes; 20.1 to 30.0cm				**12056**

Description/Title	California	Georgia	Michigan	Tennessee
Repair, complex, truck; 1.1cm to 2.5cm				13101
Repair, complex, scalp, arms, and/or legs; 1.1cm to 2.5cm				**13120**
Repair, complex, forehead, cheeks, chin, mouth, neck, axillae, genitalia, hands and/or feet; 1.1cm to 2.5cm				13131
Repair, complex, forehead, cheeks, chin, mouth, neck, axillae, genitalia, hands and/or feet; 2.6cm to 7.5cm				13132
Repair, complex, eyelids, nose, ears and/or lips; 1.0cm or less (see also 40650-40654, 47961-64975)				13150
Repair, complex, eyelids, nose, ears and/or lips; 1.1cm to 2.5cm				13151
Repair, complex, eyelids, nose, ears and/or lips; 2.6cm to 7.5cm				13152
Repair, unusual, complicated, over 7.5cm, any area				13300
Adjacent tissue transfer or rearrangement, cheeks, mouth, nose, neck, axillae; defect 10 sq cm or less				14040
Adjacent tissue transfer or rearrangement, lips, nose, ears, eyelids; defect 10 sq cm or less				14061
Adjacent tissue transfer or rearrangement, more than 30 sq cm, unusual or complicated, any area				14300
Musculoskeletal System - General				
Incision of soft tissue abscess (eg, secondary to oseomyelitis); superficial				20000
Incision of soft tissue abscess (eg, secondary to oseomyelitis); deep or complicated				20005
Excision: biopsy, muscle; deep				20205
Excision: biopsy, trocar or needle; superficial				20220
Removal of foreign body in muscle or tendon sheath; deep or complicated				**20525**
Arthocentesis, aspiration and/or injection; small joint, bursa or ganglion cyst (eg, fingers, toes)				**20600**
Arthocentesis, aspiration and/or injection; intermediate joint, bursa or ganglion cyst (eg, temporomandibular, acromioclavicular, wrist, elbow, ar ankle, olecranon bursa)				**20605**
Insertion of wire or pin with application of skeletal traction, including removal (separate procedure)				20650
Removal of implant; superficial (separate procedure)				20670
Removal of implant; deep				20680
Removal, under anesthesia, of external fixation system				**20694**
Bone graft any autogenous donor area; minor or small				20900
Bone graft any autogenous donor area; major or large				20902
Tissue grafts, other (eg, paratenon, fat, dermis)				**20926**
Bone graft, with microvascular anastomosis; other bone graft (specify)				**20962**
Miscellaneous — Unlisted procedure, musculoskeletal, general				20999
Surgical Incision				
Incision and drainage of abcess; intraoral soft tissue		D7510	707510	**D7510**
Incision and drainage of abcess; extraoral soft tissue		D7520	707520	
Surgical Incision: Treatment of cellulitis			707525	
Removal of reaction, producing foreign bodies, musculoskeletal system		D7540		
Sequestrectomy for osteomyelitis		**D7550**	**707550**	
Surgical Incision: Not otherwise classified			707599	

Description/Title	California	Georgia	Michigan	Tennessee
Musculoskeletal System - Head				
(Incision - Head)				
Arthrotomy, temporomadibular joint				**21010**
(Excision - Head)				
Excision of bone; (eg, osteomuelitis or bone abscess) mandible				**21025**
Excision if benign cyst or tumor of facial bone other than mandible				**21030**
Excision if benign cyst or tumor of mandible; simple				21040
Excision if benign cyst or tumor of mandible; complex				21041
Excision of malignant tumor of mandible				21044
Meniscetomy, partial or complete, temporomandibular joint (separate procedure)				21060
Coronoidectomy; (separate procedure)				**21070**
Coronoidectomy; bilateral				21071
(Introduction or Removal - Head)				
Impression and custom preparation (by the physician, not an outside lab); oral surgical implant [to close a cleft]				**21085**
Applicaiton of interdental fixation device for conditions other than fracture or dislocation, includes removal				**21110**
Injectin procedure for temporomadibular joint arthrography				**21116**
(Repair, Revision, or Reconstruction - Head)				
Genioplasty; augmentation (autograft, allograft, prosthetic material)				**21120**
Reconstruction midface, Lefort I; intrusion, single piece (eg, for Long Face Syndrome)				**21144**
Reconstruction midface, Lefort I; intrusion, single piece, any direction, requiring bone grafts (includes obtaining autografts)				**21145**
Reconstruction midface, Lefort I; intrusion, two pieces, any direction, requiring bone grafts (includes obtaining autografts) (eg, ungrafted unilateral alveolar cleft)				**21146**
Reconstruction midface, Lefort I; intrusion, three or more pieces, any direction, requiring bone grafts (includes obtaining autografts) (eg, ungrafted bilateral alveolar cleft or multiple osteotomies)				**21147**
Reconstruction of mandibular ramus, horizontal, vertical, "C", or "L" osteotomy; without bone graft				**21193**
Reconstruction of mandibular ramus, sagittal split; without internal rigid fixation				**21195**
Reconstruction of mandibular ramus, sagittal split; with internal rigid fixation				**21196**
Osteotomy, mandibule, segmental				**21198**
Osteotomy; mandible, total or horizontal				21200
Osteotomy; mandible, segmental				21202
Osteotomy; mandibular ramus (osteotomy)				21203
Osteotomy; maxilla, total				21204
Osteotomy; maxilla, segmental				21206
Osteoplasty, facial bones; augmentation (autograft, allograft or prosthetic implant)				**21208**

Description/Title	California	Georgia	Michigan	Tennessee
Osteoplasty, facial bones; reduction				**21209**
Graft, bone; nasal, maxillary or malar areas (includes obtaining graft)				21210
Graft, bone; mandible (includes obtaining graft)				**21215**
Anthroplasty, temporomandibular joint, with or without autograft				21240
Reconstruction of manidble, extraoral, with transosteal bone plate (eg, mandibular ataple bone plate)				**21244**
Reconstruction of manidbular condyle with bone and cartilage autografts includes obtaining grafts) (eg, for hemifacial microsomia)				**21247**
Reconstruciton of mandible or maxilla, endosteal implant (eg, blade, cylinder); partial				**21248**
Osteoplasty of maxilla and/or other facial bones for midface hypoplasia or retrusion (LeFort type operation); with bone graft				21250
Osteoplasty of maxilla and/or other facial bones for midface hypoplasia or retrusion (LeFort type operation); without bone graft				21254
Unlisted carniofacial and maxillofacial procedure				**21299**
Fracture and/or dislocation - Head				
Interdental wiring, for condition other than fracture				21497
Unlisted orthopedic procedure, head				21499
Musculoskeletal Sytem-Neck (Soft Tissue) & Thorax				
Excision of tumor, soft tissue of neck or throrax; subcutaneous				21555
Arthroscopy, temporomandibular jointr, diagnositic with or without synovial biopsy (separate procedure)				**29800**
Arthroscopy, temporomandibular joint, surgical (surgical arthroscopy always includes a diagnostic arthroscopy)				**29804**
Respiratory System-Nose				
Repair: Septoplasty or submucous resection, with or without cartilage scoring, contouring or replacement with graft				**30520**
Repair fistula; oromaxillary				**30580**
Repair fistula; oronasal				30600
Respiratory System-Accessory Sinuses				
Incision: Sinusotomy, maxillary (antrotomy); radical (Caldwell-Luc) without removal of antrochoanal polyps				**31030**
Incision: Sinusotomy, maxillary (antrotomy); radical (Caldwell-Luc) with removal of antrochoanal polyps				**31032**
Respiratory System-Larynx				
Laryngoscopy direct, with or without tracheoscopy; for aspiration (endoscopy)				31515
Digestive System				
Excision of lip; transverse wedge excision with primary closure				40510
Repair lip, full thickness; vermilion only				40650
Repair lip, full thickness; over one half vertical height, or complex				**40654**
Plastic repair of cleft lip/nasal deformity; secondary, by recreation of defect and reclosure				**40720**
Drainage of abscess, cyst, hematoma, vestibule of mouth; simple				40800
Drainage of abscess, cyst, hematoma, vestibule of mouth; complicated				40801

Description/Title	California	Georgia	Michigan	Tennessee
Removal of embedded foreign body, vestibule of mouth; simple				40804
Removal of embedded foreign body, vestibule of mouth; complicated				**40805**
Incision of labial fenum (frenotomy), vestibule of mouth				40806
Excision of lesion of mucosa and submucosa, vestibule of mouth; without repair				**40810**
Excision of lesion of mucosa and submucosa, vestibule of mouth; with simple repair				40812
Excision of lesion of mucosa and submucosa, vestibule of mouth; with complex repair				40814
Excision of frenum, labial or buccal (frenumectomy, frenulectomy, frenectomy), vestiblue of mouth				40819
Vestibuloplasty; entire arch				40844
Intraoral incision and drainage of abscess, cyst, or hematoma of tongue or floor of mouth; lingual				41000
Intraoral incision and drainage of abscess, cyst, or hematoma of tongue or floor of mouth; submental space				**41007**
Intraoral incision and draisubmandibular spacenage of abscess, cyst, or hematoma of tongue or floor of mouth;				**41008**
Intraoral incision and drainage of abscess, cyst, or hematoma of tongue or floor of mouth; masticator space				**41009**
Incision of lingual frenum (frenectomy), tongue or floor of mouth				41010
Extraoral incision and drainage of abscess, cyst, or hematoma of floor of mouth; sublingual				41015
Extraoral incision and drainage of abscess, cyst, or hematoma of floor of mouth; submental				41016
Extraoral incision and drainage of abscess, cyst, or hematoma of floor of mouth; submandibular				41017
Excision of lingual frenum (frenectomy), tongue or floor of mouth				41115
Hemiglossectomy				41130
Frenoplasty (surgical revision of frenum, eg, with Z-plasty)				**41520**
Dentoalveolar Structures				
Incision of abscess, cyst, hematoma from dentoalveolar structures				41800
Removal of embedded foeign body from dentoalveolar structures; bone				**41806**
Excision of lesion or tumor, dentoalveolar structures; without repair				41825
Excision of lesion or tumor, dentoalveolar structures; with simple repair				41826
Excision of lesion or tumor, dentoalveolar structures; with complex repair				41827
Alveoplasty				41874
Unlisted procedure, dentoalveolar structures				**41899**
Palate, Uvula				
Drainage of abscess of palate, uvula				**42000**
Palatoplasty for cleft palate; with bone graft to alveolar ridge (includes obtaining graft)				42210
Palatoplasty for cleft palate; major revision				42215
Repair of nasolabial fistula				**42260**
Maxillary impression for palatal prosthesis				**42280**

Description/Title	California	Georgia	Michigan	Tennessee
Salivary Gland and Ducts				
Drainage of abscess; parotid, simple				**42330**
Fistulization of sublingual salivary cyst (ranula)				**42335**
Excision of sublingual salivary cyst (ranula)				**42408**
Excision of submandibular (submaxillary) gland				**42440**
Oral surgery (extraction, Treatment of Fractures, Alveoplasty, other) general or unspecific; mapped from T3 CA claims data	299			
Oral surgery (extraction, Treatment of Fractures, Alveoplasty, other) general or unspecific; mapped from T3 CA claims data	*995*			
Oral surgery (extraction, Treatment of Fractures, Alveoplasty, other) general or unspecific; mapped from T3 CA claims data	*999*			
Unspecified oral surgery procedure, by report	**D7999**		707999	**D7999**
Adjunctive General Services				
Postoperative visit (complications)	220			
Additional Reimbursment			709112	
Unclassified Adjunctive General Services: not otherwise classified			709199	
Unspecific adjunctive procedure, by report		**D9999**		
Anesthesia				
General anesthesia	400	D9220	709220	
Analgesia	**D9230**	D9230		
Relative analgesia, per visit	301			
Intravenous sedation		D9240		D9240
Intraveneous sedation (not in conjunction with General Anesthesia			709231	
Continuous IV drip				Y2023
Drugs				
Injectables (antibiotics, premedications and therapeutic durgs)	300			
Therapeutic drug injection, by report		D9610	709610	
Other drugs and/or medicament, by report		D9630		
Therapeutic or diagnostic injection (specify material injected); subcutaneous or intramuscular				**90782**
Miscellaneous Services				
Treatment of surgical complications (postsurgical) — unusual			**709930**	
Treatment of fracture, Compound: maxilla, open reduction			707710	
Treatment of fracture, Compound: maxilla, closed reduction			707720	
Treatment of fracture, Compound: mandible, open reduction			707730	
Treatment of fracture, Compound: mandible, closed reduction			707740	

Description/Title	California	Georgia	Michigan	Tennessee
ORTHODONTICS - SPECIAL SERVICES				
Malocclusion cases: Banding and materials	552			
Malocclusion cases: per month - Maximum 24 months	554			
Malocclusion cases: quarterly - observation - 6 quarters maximum	556			
Initial banding				Y2114
Monthly maintenance				Y2116
Other Orthodontic Services				
Treatment of the atypical or extended skeletal case		D8650		
Orthodontic service; mapped from T3 claims data	**551**			
Orthordontic Services for the Crippled Children's Program for Title V Elligible Children				
Pretreatment orthodontic evaluation			709990	
Orthodontic evaluation (includes examination, x-rays and study models)			709991	
Orthodontic initial treatment (includes appliance insertion and first six months treatment)			709992	
Orthodontic continuing treatment (each additional six months)			709993	
Post treatment stabilization			**709994**	
Not otherwise classified (Orthodontic services only)			709999	
Cleft Palate Cases				
Cleft Palate Cases (primary dentition): appliance fee	562			
Cleft Palate Cases (primary dentition): per month - 10 month maximum	564			
Cleft Palate Cases (mixed dentition): banding and materials	570			
Cleft Palate Cases (mixed dentition): per month - 14 month maximum	572			
Cleft Palate Cases (permanent dentition): banding and materials	580			
Cleft Palate Cases (permanent dentition): per month - 30 month maximum	582			
Cleft Palate Cases (facial growth management): quarterly observation - 6 quarters maximum	592			
Cleft Palate Cases (facial growth management): progress records prior to treatment	**594**			
Cleft Palate Cases (facial growth management): banding and materials	596			
Cleft Palate Cases (facial growth management): per month - 24 month maximum	598			
Cleft Palate Cases (facial growth management): retainer removable	599			

Description/Title	California	Georgia	Michigan	Tennessee
EMERGENCY				
Office services provided on a emergency basis				99058
Emergency Oral Exam		D0130		
Emergency Oral Exam; under 21			700130	
Emergency Oral Exam; 21 and older			700131	
Palliative (emergency) treatment of dental pain — minor procedures	**D9110**	D9110	709110	D9110
Emergency treatment - palliative per visit	080			
Catastrophic dental procedure, by report		Y0087		
Periodontics: Emergency treatment (periodontal abscess, acute periodontitis, etc)	451			
Professional visits after hours or to bedside	030			
Services requested after office hours in addition to basic services				99050
Services requested between 10:00 pm and 8:00 am in addition to basic services				99052
Services requested on Sundays and holidays in addition to basic services				**99054**
Emergency department service, new patient; minimal service				90500
Emergency department service, new patient; brief service				90505
Emergency department service, new patient; limited service				90510
Emergency department service, new patient; intermediate service				90515
Emergency department service, new patient; extended service				90517
Emergency department service, new patient; comprehensive service				**90520**
Emergency department service, established patient; intermediate service				**90560**
Emergency department service, established patient; extended service				**90570**
Emergency care facility services: when the non-hospital based physician is in the hospital, but is involved patient care elsewherea and is called to the emergency facility to provide emergency services				99062
Emergency care facility services: when the non-hospital based physician is called to the emergency facility from outside the hospital to provide emergency services; not during regular office hours				99064
Emergency care facility services: when the non-hospital based physician is called to the emergency facility from outside the hospital to provide emergency services; during regular office hours				99065
Fracture and/or Dislocation - Head				
Treatment of closed skull fracture without operation				**21310**
Manipulative treatment of nasal bone fracture; with stabilization				21320
Open treatment of nasal fracture; with concomitant open treatment of fractured septum				21335
Open treatment of closed or open depressed frontal sinus fracture				**21343**

Description/Title	California	Georgia	Michigan	Tennessee
Open treatment of nasomaxillary complex fracture (LeFort II type); with wiring and/or local fixation				**21346**
Open treatment of closed or open depressed malar fracture, including zygomatic arch and malar tripod				**21360**
Open treatment of orbital floor "blowout" fracture; transantral approach (Caldwell-Luc type operation)				**21386**
Open treatment of craniofacial separation (LeFort III type); with wiring and/or local fixation; complicated (eg, multiple approaches)				**21433**
Open treatment of closed or open mandibular fracture; without external fixation				**21454**
Uncomplicated treatment of temporomandibular dilocation, intial or subsequent				**21480**
Treatment of malar fracture, simple or compound depressed, closed reduction	**915**			
Treatment of malar fracture, simple or compound depressed, open reduction	916			
Treatment of Fracture, Simple: Malar and/or zygomatic arch; closed reduction			707660	
Treatment of Fracture, Compound: Malar and/or zygomatic arch; closed reduction			707760	
Treatment of closed or open nasoethmoid fracture; with splint, wire or headcap fixation, including repair of canthal ligaments and/or the nasolcrimal apparatus				21340
Manipulative treatment of closed or open fracture of malar area, including zygomatic arch and malar tripod				21355
Open treatment of closed or open complicated, (eg, multiple) fractures of malar area, including zygomatic arch and malar tripod, with internal skeletal fixation and multiple surgical approaches				21365
Open treatment of orbital floor "blowout" fracture; transtral approach (Caldwell-Luc) type operation				21385
Open treatment of fracture of orbit, except "blowout"; without implant				21406
Treatment of Fracture, Simple: Alveous, stabilization of teeth; open reduction splinting			707670	
Treatment of Fracture, Compound: Alveous, stabilization of teeth; open reduction splinting			707770	
Treatment of palatal or alveolar ridge fracture (Lefort I type); closed manipulation with interdental wire fixation or denture or splint				21421
Treatment of palatal or alveolar ridge fracture (Lefort I type); open treatment				21422
Manipulative treatment of alveolar ridge fracture (separate procedure)				21440
Open treatment of alveolar ridge fracture (separate procedure)				21445
Treatment of closed or open mandibular fracture; without manipulation				21450
Treatment of closed or open mandibular fracture; with manipulation, may include external fixation				21451
Closed manipulative treatment by interdental fixation of closed or open mandibular fracture				21455

Description/Title	California	Georgia	Michigan	Tennessee
Open treatment of closed or open mandivular fracture; without interdental fixation				21461
Open treatment of closed or open mandivular fracture; with interdental fixation				21462
Open treatment of mandibular condylar fracture				21465
Open treatment of complicated closed or open mandibular fracture by multiple surgical approaches including internal fixation, interdental fixation, and/or wiring dentures or splints				21470
Complicated manipulative treatment of temporomandibular dislocation, intial or subsequent				21485
Reduction of dislocation of temporomandibular joint	913			
Closed reduction of dislocation (of other temporormandibular joint dysfunctions)		D7820		
Treatment of simple fracture of the maxilla, open reduction	900			
Fracture, maxilla open reduction wiring and fixation				Y2117
Treatment of fracture: maxilla, open reduction (teeth immobilized if present		D7610	707610	
Treatment of simple fracture of the maxilla, closed reduction	901			
Treatment of fracture: maxilla, closed reduction (teeth immobilized if present		D7620	707620	
Treatment of simple fracture of the mandible, open reduction	902			
Fracture, mandible open reduction with or without wiring of teeth				Y2118
Treatment of fracture: mandible, open reduction (teeth immobilized if present		D7630	707630	
Treatment of simple fracture of the mandible, closed reduction	903			
Treatment of fracture: mandible, closed reduction (teeth immobilized if present		D7640	707640	
Treatment of fracture-simple, malar and/or zygomatic arch — open reduction			**707650**	
Treatment of fracture, Simple: Facial bones, complicated reduction			707680	
Treatment of fracture, Compound: maxilla, open reduction	905			
Treatment of fracture, Compound: maxilla, closed reduction	904			
Treatment of fracture, Compound: mandible, open reduction	907			
Treatment of fracture, Compound: mandible, closed reduction	906			
Suture of recent small wounds up to 5cm		D7910	707910	
Closure of laceration, vestibule of mouth; 2.5cm or less				40830
Closure of laceration, vestibule of mouth; over 2.5cm or complex				40831
Repair of laceration 2.5cm or less, floor of mouth and/or anterior two-thirds of tongue				41250
Repair of laceration of tongue, floor of mouth, over 2.6cm or complex				41252
Repair, palate or uvula; over 2cm or complex				42182
Elevation of depressed skull fracture; compound or comminuted, extradural				62005
Misc items mapped to emergency				
Radiologic examination, hand; two views				73120
Musculoskeletal Sytem-Hands & Fingers				

Description/Title	California	Georgia	Michigan	Tennessee
Anthrotomy, for infection, with exploration, drainage or removal of foreign body; carpometacarpal joint				26070
Musculoskeletal Sytem-Respiratory System				
Unlisted procedure, arthoscopy				29909

Description/Title	California	Georgia	Michigan	Tennessee
FQHC - supplemental payment codes				
Hamilton Family HC FCR			709500	
FCR/Sterling			709501	
FCR/MAR.			709502	
Northern Michigan Health			709503	
FQMC Pullman Dental			709504	
FQHC Health Delivery			709505	
FQHC/Cherry Street			709506	
FQHC/V.P. Rural Health			709507	
FQHC-Baldwin Fam. Health Center			709508	
FQHC/Northwest Michigan Health			709510	
Sault Ste Marie Tribal Clinic			709512	
Keweenaw Bay Indian Community			709513	
PCH-Saginaw County Health Health Dept			709651	
FQHC/RHC Dental service	00003			

Description/Title	California	Georgia	Michigan	Tennessee
MISCELLANEOUS CODES NOT IN ABOVE CATEGORIES				
Radiology				
Radiologic examination, wrist; anteroposterior and lateral views				73100
Auditory System				
Drainage external ear, abscess or hematoma; simple				69000
FQHC/RHC visit	00001			
FQHC/RHC Crossover service	00002			
FQHC Optometry service	00004			
General non-conforming procedures				Y2111
Unknown	X2300			
Unknown	X2302			
Unknown	X2304			
Unknown	X2306			
Unknown	X2308			
Unknown	X2310			
Unknown	X2332			
Unknown	X2336			
Unknown	X2350			
Unknown	X2364			
Unknown	X2366			
Unknown	X2376			
Unknown	X2448			
Unknown	X2464			
Unknown	X2502			
Unknown	X2510			
Unknown	X2516			
Unknown	X2520			
Unknown	X2524			
Unknown	X2528			
Unknown	X2530			
Unknown	X2532			
Unknown	X2542			
No Description Found	000	00000	707750	42281

Description/Title	California	Georgia	Michigan	Tennessee
ORTHODONTICS - SPECIAL SERVICES				
Malocclusion cases: Banding and materials	552			
Malocclusion cases: per month - Maximum 24 months	554			
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Monthly maintenance				Y2116
Other Orthodontic Services				
Treatment of the atypical or extended skeletal case		D8650		
Orthordontic Services for the Crippled Children's Program for Title V Elligible Children				
Pretreatment orthodontic evaluation			709990	
Orthodontic evaluation (includes examination, x-rays and study models)			709991	
Orthodontic initial treatment (includes appliance insertion and first six months treatment)			709992	
Orthodontic continuing treatment (each additional six months)			709993	
Not otherwise classified (Orthodontic services only)			709999	
Cleft Palate Cases				
Cleft Palate Cases (primary dentition): appliance fee	562			
Cleft Palate Cases (primary dentition): per month - 10 month maximum	564			
Cleft Palate Cases (mixed dentition): banding and materials	570			
Cleft Palate Cases (mixed dentition): per month - 14 month maximum	572			
Cleft Palate Cases (permanent dentition): banding and materials				
Cleft Palate Cases (facial growth management): quarterly observation - 6 quarters maximum	592			
Cleft Palate Cases (facial growth management): progress records prior to treatment	594			
Cleft Palate Cases (facial growth management): banding and materials	596			
Cleft Palate Cases (facial growth management): per month - 24 month maximum	598			
Cleft Palate Cases (facial growth management): retainer removable	599			