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Utilization of Oral Health Services by Medicaid-Insured Adults in Oklahoma, 2012-2013

OHWRC
Oral Health Workforce Research Center

Center for Health Workforce Studies
School of Public Health
University at Albany, State University of New York

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PREFACE

This report summarizes patterns of dental care utilization among Medicaid-enrolled adults in Oklahoma during 2012 and 2013 based on provider availability and Medicaid coverage.

The report was prepared for the Oral Health Workforce Research Center (OHWRC) by Simona Surdu, Margaret Langelier, and Jean Moore, with layout design by Leanne Keough. OHWRC is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number U81HP27843, a Cooperative Agreement for a Regional Center for Health Workforce Studies, in the amount of $436,600. This information or content and conclusions are those of OHWRC and should not be constructed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS, or the U.S. government.

The mission of OHWRC is to provide accurate and policy-relevant research on the impact of the oral health workforce on oral health outcomes. The research conducted by OHWRC informs strategies designed to increase access to oral health services for vulnerable populations. OHWRC is based at the Center for Health Workforce Studies (CHWS) at the School of Public Health, University at Albany, State University of New York (SUNY), and is the only research center uniquely focused on the oral health workforce.

The views expressed in this report are those of OHWRC and do not necessarily represent positions or policies of the School of Public Health, University at Albany, SUNY, or other subcontractors.

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Executive Summary

BACKGROUND

There is strong evidence suggesting that access to and utilization of oral health services is dependent on dental insurance coverage. One predictor of patients' ability to routinely access oral health care is their dental insurance status. Variation in dental insurance benefits affects the behavior of both patients and dental providers.

While Medicaid dental coverage for children is relatively consistent across the 50 states, dental benefits for Medicaid-enrolled adults vary significantly from state to state. As a result of the recent economic recession, many states have moved to limit Medicaid expenditures for dental care. As of 2012, 22 states, including Oklahoma, either offer no adult dental benefit with Medicaid or limit coverage to dental emergency and trauma–related care.

Social, economic, and geographic determinants affect how and when patients access oral health services. For example, an uneven geographic distribution of dentists influences access, particularly in rural areas and small towns where oral health care access is limited by a scarcity of private dental practices or safety-net oral health providers. Furthermore, not all dentists participate in state Medicaid programs, which further limits the availability of oral health services for patients insured by Medicaid.

The Center for Health Workforce Studies (CHWS), which has been designated the national Oral Health Workforce Research Center under a cooperative agreement with HRSA, conducts research related to oral health and the oral health workforce. The objective of this research is to understand the impact of Medicaid dental benefits and availability of providers on utilization of dental services. The present report summarizes the findings of an analysis of Medicaid dental claims over a 2-year period in Oklahoma, where the Medicaid program provides only a limited emergency dental benefit for eligible adults.

KEY FINDINGS

Medicaid Dental Insurance for Adults and Utilization Patterns of Dental Services in Oklahoma

Adult Medicaid Enrollees and Dental Services Utilization

- Approximately 11% of the total population in Oklahoma were adults insured by Medicaid during all or part of the 2-year study period.
- Adult enrollees in Oklahoma Medicaid in 2012 and 2013 were mainly women (68%), adults aged 21 to 44 years (57%), Non-Hispanic Caucasians (63%), and residents of rural counties of the state (53%).
- Only 16% of adult Oklahoma Medicaid enrollees received any dental service in the 2-year study period.
- Men, older adults, Hispanics and Non-Hispanic American Indians, and enrollees living in rural counties were less likely to receive any dental service over the study period than other enrollees.
- Younger adults, Non-Hispanic American Indians, and those living in urban counties were more likely than other groups to seek dental treatment services in emergency departments (EDs) only.

Medicaid Adults Receiving Services in Dental Offices or Clinics

- About 15% of adult Medicaid enrollees (95% of those accessing dental care) received at least 1 service in a dental office or clinic during the study period. These were primarily diagnostic and surgery services.
- Women, adults aged 25 to 29 years, Non-Hispanic Blacks or African Americans, and those living in urban counties utilized the most oral and maxillofacial surgery services.

Medicaid Adults Receiving Services for Dental Problems in EDs

- Nearly 2% of all adult Medicaid enrollees (11% of those accessing dental care) received at least 1 service for dental problems in an ED.

- Women, adults aged 25 to 29 years, Non-Hispanic Blacks or African Americans, and those living in urban counties had higher rates of utilization of services for dental problems in EDs than did other population groups.

Number of Visits and Providers per Medicaid Adult

- Among Medicaid adults who received any dental services during the 2-year study period, 43% had only 1 dental visit, 26% had 2 visits, 26% had 3 to 5 visits, and 6% had more than 5 visits.

- The number of dental visits per Medicaid adult who utilized services varied from 1 to 37, with an average of 2.3 over the 2-year study period.

- About 21% of adult Medicaid enrollees who accessed any dental services were treated by multiple general dentists.

Providers of Oral Health Care for Adults With Medicaid Insurance in Oklahoma

Providers of Dental Services

- Providers offering dental services to Medicaid adults in the 2-year study period were equally likely to be located in dental offices or clinics (1,077 providers) and EDs (1,103 providers).

- Dental offices or clinics included general dentists, dental clinics and Federally Qualified Health Clinics (FQHCs), oral surgeons, and pediatric dentists. The usual providers of dental services in EDs were physicians, physician assistants, and certified nurse practitioners.

- Providers in dental offices or clinics were located mainly in urban areas. EDs providing dental services were somewhat more likely to be located in rural than in urban counties.

Types of Dental Services Provided

- The most frequently used diagnosis code on claims submitted to Medicaid by providers in dental offices and clinics was “limited oral evaluation—problem focused (emergency examination).”

- The most frequently used diagnosis code on claims submitted to Medicaid by providers of dental services in EDs was “unspecified disorder of the teeth and supporting structures.”

Number of Patients and Encounters per Provider

- The majority of providers in dental offices or clinics and in EDs treated fewer than 50 adult Medicaid patients during the 2-year study period.

- Providers in dental offices or clinics in rural areas treated more Medicaid-insured patients overall than did those in urban areas. Roughly comparable numbers of patients were treated by providers in rural and urban EDs.

Payment for Adult Dental Services Provided in Dental Offices and Clinics by Medicaid Insurance in Oklahoma

- The total cost of services in dental offices and clinics was nearly $40 million over the 2-year study period. The cost distribution was 79% for services provided by general dentists, 20% for specialty services, and 1% for services provided in dental clinics.

- The average costs per patient and per encounter were highest for services provided by dental specialists ($776 and $533, respectively).

Commuting Distances of Medicaid Adults to Obtain Dental Services in Oklahoma

- Approximately 47% of adult Medicaid enrollees commuted less than 10 miles from their residence to receive dental services, while 21% traveled 10 to 25 miles, 23% traveled 25 to 100 miles, and 9% traveled 100 or more miles. Commuting distances were similar whether patients commuted to dental offices or clinics or to EDs.

- Rural patients commuting to dental providers traveled from 2 to 7 times as far as those residing in urban counties.

County Analysis of Medicaid Dental Care Among Adults in Oklahoma

- Eleven counties had no private-practice general dentists billing Medicaid for adult dental services.

- The number of general dentists who provided dental services to Medicaid adults during the 2-year study period varied from 1 (in 15 counties) to more than 100 (in Tulsa and Oklahoma counties).

CONCLUSIONS

The results of this study suggest that the limited dental benefits available to Medicaid-insured adults in Oklahoma influenced their utilization of oral health services. Over the 2-year study period, only 16% of adult Medicaid enrollees received any dental service, and of these, nearly half had only a single dental visit.

Although rural residents were more likely than urban residents to be enrolled in Medicaid in Oklahoma, they were less likely to receive any dental service during the study period. As an apparent result of limited coverage for preventive services, the majority of Medicaid-insured adults in Oklahoma who received services in a dental office received a surgical treatment such as extraction and surgical removal of an erupted tooth. Eleven percent of all patients received at least 1 service for dental problems in an ED, which is not generally equipped to address the cause of dental pain and infection and is usually able to provide only palliative care.

Access of Medicaid-insured adults in Oklahoma to routine dental examinations and treatment is compromised not only by the limited dental benefits of Medicaid but also by the number of dentists providing dental services to adult Medicaid enrollees. More than half of the dentists treating Medicaid-insured adults practiced in 3 urban counties: Oklahoma, Tulsa, and Cleveland. In 11 rural counties, there were no dentists providing services to Medicaid-insured adults. The uneven geographic distribution of dentists was apparent in the higher volume of adult Medicaid patients among dental providers in rural offices and clinics and also by the greater commuting distance to these providers for patients residing in rural areas.

Technical Report

BACKGROUND

There is strong evidence suggesting that access to and utilization of oral health services is dependent on dental insurance coverage.[1] One predictor of patients' ability to routinely access oral health care is their dental insurance status. Variation in dental insurance benefits affects the behavior of both patients and dental providers. For instance, a Medicaid patient with dental pain may access care only from a safety-net provider because participating private-practice dentists are unavailable. Similarly, treatment for a tooth infection may result in tooth extraction because a limited Medicaid benefit will not permit final restoration of the infected tooth and the patient cannot afford to pay out of pocket for the needed service. Dental claims data provide information about patients, services, settings, and providers that can be used to describe utilization patterns in a given population.

All states are required to provide a comprehensive dental insurance benefit for children through the Early and Periodic Screening, Diagnostic and Treatment (EPSDT) benefit in state Medicaid programs. States have expanded the dental benefit to include children in the Children's Health Insurance Program (CHIP) who are not eligible for Medicaid. While Medicaid dental coverage for children is relatively consistent across the 50 states, dental benefits for Medicaid-enrolled adults vary significantly from state to state. As a result of the recent economic recession, many states have moved to limit Medicaid expenditures for dental care by moving eligible populations to managed-care dental plans, reducing reimbursement rates, and/or reducing or eliminating dental benefits for adults.[2] As of 2012, 22 states, including Oklahoma, either offer no adult dental benefit with Medicaid or limit coverage to dental emergency and trauma–related care.[2] Many of the remaining states that do provide an adult Medicaid benefit limit the number of permissible dental visits or limit benefits to treatment for dental pain and infection only. States are experiencing high costs for use of emergency departments (EDs) for dental problems and outpatient services for quadrant or sedation dentistry to address serious dental conditions. There is debate about the advisability of Medicaid policy that pays only for expensive therapeutic services rather than supporting preventive and basic restorative care earlier in the caries process.

Social, economic, and geographic determinants affect how and when patients access oral health services. For example, an uneven geographic distribution of dentists influences access, particularly in rural areas and small towns where oral health care access is limited by a scarcity of private dental practices or safety-net oral health providers. Some patients are limited by both geography and insurance status in their ability to obtain dental services.

Furthermore, not all dentists participate in state Medicaid programs, which further limits the availability of oral health services for patients insured by Medicaid, especially in smaller-population areas. Workforce innovations in several states now permit registered dental hygienists (RDHs) to provide services directly

to patients. RDHs may work in school-based oral health programs, nursing homes, or independently. Claims data contain information about where services occurred; the professional who treated the patient; and the types of diagnostic, preventive, restorative, or therapeutic services that were provided.

The Center for Health Workforce Studies (CHWS), which has been designated the national Oral Health Workforce Research Center under a cooperative agreement with and funding from the Health Resources and Services Administration (HRSA), conducts research related to oral health and the oral health workforce. The objective of this research is to understand the impact of Medicaid dental benefits and availability of providers on utilization of dental services. The present report summarizes the findings of an analysis of Medicaid dental claims over a 2-year period in Oklahoma, where the Medicaid program provides only a limited emergency dental benefit for eligible adults.

METHODS

This research project investigated the use of oral health services in Oklahoma for the treatment of oral health–related problems from January 1, 2012, through December 31, 2013.

The findings of this report are based on an analysis of enrollment and claims data obtained from the Oklahoma Health Care Authority (OHCA) for Medicaid-enrolled adults aged 21 years and older in SoonerCare (see the Discussion section of this report for a detailed explanation of Oklahoma's Medicaid program). In addition to this information, the claims data included dates of service, dental procedures or diagnosis codes, settings where services were received (office/clinic or ED), the commuting distance from the patient's residence to the provider, and whether the claim was paid or denied. Data on providers included specialty, location of practice, and claim payment amount. The study sample included all adults aged 21 years and older who had Medicaid benefits during the study period.

The data used for the analysis of services provided in dental offices and clinics was extracted from the master data set based on the claim being classified as dental. The procedure codes, based on the American Dental Association's Code on Dental Procedures and Nomenclature (CDT) were grouped as follows:

- Diagnostic (D0100-D0999)
- Preventive (D1000-D1999)
- Restorative (D2000-D2999)
- Endodontics (D3000-D3999)
- Periodontics (D4000-D4999)
- Prosthodontics (D5000-D5899, D6200-D6999)
- Prosthetics and implant (D5900-D5999, D6000-D6199)
- Oral and maxillofacial surgery (D7000-D7999)
- Orthodontics (D8000-D8999)
- Adjunctive (D9000-D9999)
- Clinic service (T1015)

The data used for the analysis of services provided in EDs was extracted from the master data set based on ED related procedure and revenue codes. Dental-related diagnosis codes based on the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) were subsequently used to identify the following dental conditions:

- Disorders of tooth development and eruption (520)
- Diseases of hard tissues of teeth (521)
- Diseases of pulp and periapical tissues (522)
- Gingival and periodontal diseases (523)
- Dentofacial anomalies, including malocclusion (524)
- Unspecified disorder of the teeth and supporting structures (525)
- Diseases of the jaws (526)
- Diseases of the salivary glands (527)
- Diseases of the oral soft tissues, excluding gingiva and tongue lesions (528)
- Diseases and other conditions of the tongue (529)

ED visits were selected for the analyses based on the presence of a primary or secondary dental-related diagnosis on the ED claim.

The 77 Oklahoma counties were classified as rural, urban, or mixed (Map 1) according to the definition used by the Oklahoma State University Center for Rural Health.[3] Counties with more than 95% of their population living in urban census tracts (based on Rural-Urban Commuting Areas [RUCAs] classification) were considered urban (4 counties: Cleveland, Comanche, Oklahoma, and Tulsa), those with 65% to 95% of their population living in urban census tracts were considered mixed (5 counties: Canadian, Creek, Logan, McClain, and Wagoner), and those with less than 65% of their population living in urban census tracts were considered rural (the remaining 68 counties).

The counties were also grouped into 6 regions (Map 1) using the Behavioral Risk Factor Surveillance System (BRFSS) planning regions[4] as follows:

- Northeast region (21 counties): Adair, Cherokee, Craig, Creek, Delaware, Kay, Lincoln, Mayes, Muskogee, Noble, Nowata, Okfuskee, Okmulgee, Osage, Ottawa, Pawnee, Payne, Rogers, Sequoyah, Wagoner, and Washington

- Northwest region (18 counties): Alfalfa, Beaver, Blaine, Canadian, Cimarron, Custer, Dewey, Ellis, Garfield, Grant, Harper, Kingfisher, Logan, Major, Roger Mills, Texas, Woods, and Woodward

- Southeast region (18 counties): Atoka, Bryan, Choctaw, Coal, Haskell, Hughes, Johnston, Latimer, Le Flore, McCurtain, McIntosh, Marshall, Murray, Pittsburg, Pontotoc, Pottawatomie, Pushmataha, and Seminole

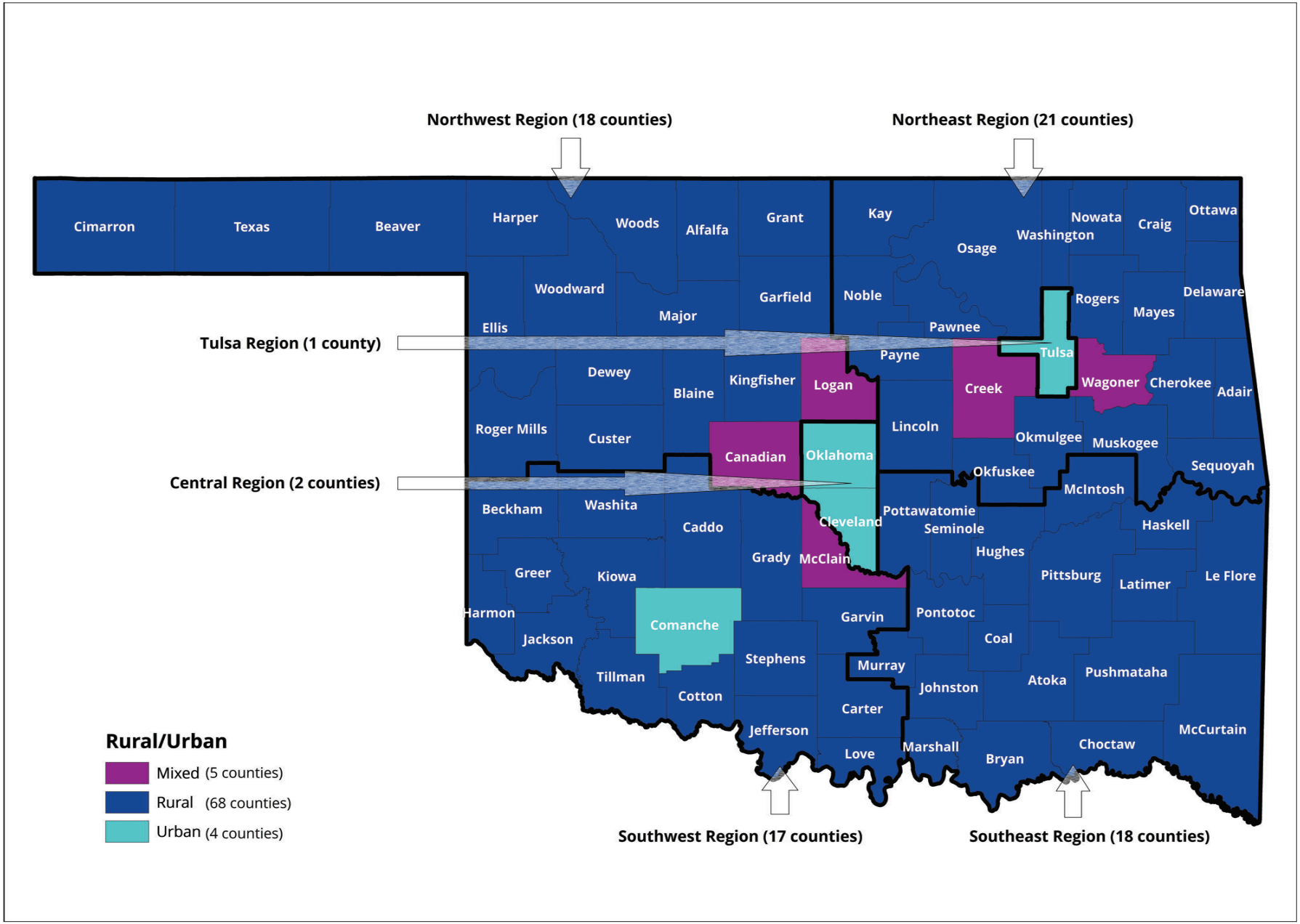
- Southwest region (17 counties): Beckham, Caddo, Carter, Comanche, Cotton, Garvin, Grady, Greer, Harmon, Jackson, Jefferson, Kiowa, Love, McClain, Stephens, Tillman, and Washita

- Central region (2 counties): Cleveland and Oklahoma

- Tulsa region (1 county): Tulsa

Access to oral health services for adults enrolled in Medicaid in Oklahoma was measured by the number (percentage) of enrollees using dental services. The analysis included tabulations and cross-tabulations of the type of oral health services received, the number of visits by patients and providers, the specialty and type of clinical providers, commuting distance to obtain services, and Medicaid dental spending. Comparisons were made between different demographic groups, by rural-urban geography, and by county and region. Separate utilization rates were calculated according to the setting in which the dental services were provided (eg, dental offices or clinics versus EDs). The study also examined variation in numbers of patients and encounters per provider according to geography. Statistical analysis was conducted using Statistical Analysis System (SAS) software (SAS, Version 9.3, SAS Institute, Cary, NC).

Figure 1. Classification of Oklahoma Counties by Region and Urban/Rural Designation



FINDINGS

Medicaid Dental Insurance for Adults and Utilization Patterns of Dental Services in Oklahoma

Adult Medicaid Enrollees and Dental Services Utilization

Among the 427,036 adult Oklahoma Medicaid enrollees in 2012 and 2013, most were women (68%), aged 21 to 44 years (57%), Non-Hispanic Caucasians (63%), and resided in rural counties (53%) and Northeast, Central, and Southeast regions (65%) of the state (Table 1).

In the 2-year study period of 2012 through 2013, only 16% (n=66,791) of adult Oklahoma Medicaid enrollees had any dental service, while 84% (n=360,245) had no dental service (Table 1). Men (33% vs 25%), adults aged 55 to 64 years (13% vs 9%) and 65 years and older (19% vs 6%), Hispanics (12% vs 7%) and Non-Hispanic American Indians (8% vs 6%), and people living in rural counties (53% vs 50%) were less likely to receive any dental service over the study period than other enrollees during the study period.

Medicaid enrollees in the Northwest, the Southeast, and the Southwest were proportionately less likely than enrollees in other regions of the state to have accessed any dental service in the 2-year period (Table 1).

Table 1. Demographic and Geographic Distribution of Adult Medicaid Enrollees and Medicaid Dental Service Users and Non-users, 2012-2013

Demographic and geographic characteristics	All adult Medicaid enrollees		Adult Medicaid enrollees with any dental service		Adult Medicaid enrollees without any dental service	
	n	%	n	%	n	%
Sex						
Female	292,079	68.4	50,161	75.1	241,918	67.2
Male	134,957	31.6	16,630	24.9	118,327	32.9
Total	427,036	100.0	66,791	100.0	360,245	100.0
Age						
21-24 years	58,556	13.7	12,451	18.6	46,105	12.8
25-29 years	61,831	14.5	13,973	20.9	47,858	13.3
30-34 years	51,638	12.1	10,165	15.2	41,473	11.5
35-44 years	69,899	16.4	11,453	17.2	58,446	16.2
45-54 years	60,303	14.1	8,643	12.9	51,660	14.3
55-64 years	51,761	12.1	5,795	8.7	45,966	12.8
65+ years	73,048	17.1	4,311	6.5	68,737	19.1
Total	427,036	100.0	66,791	100.0	360,245	100.0
Race/ethnicity						
Caucasian, Non-Hispanic	267,171	62.6	43,536	65.2	223,635	62.1
Black or African American, Non-Hispanic	51,501	12.1	10,427	15.6	41,074	11.4
American Indian, Non-Hispanic	33,007	7.7	3,844	5.8	29,163	8.1
Other, Non-Hispanic[a]	27,217	6.4	4,382	6.6	22,835	6.3
Hispanic	48,140	11.3	4,602	6.9	43,538	12.1
Total	427,036	100.0	66,791	100.0	360,245	100.0
Rural/urban						
Mixed (5 counties)	29,188	6.8	4,787	7.2	24,401	6.8
Rural (68 counties)	224,313	52.6	33,135	49.6	191,178	53.1
Urban (4 counties)	173,009	40.6	28,838	43.2	144,171	40.1
Total	426,510	100.0	66,760	100.0	359,750	100.0
Region						
Central (2 counties)	98,282	23.0	16,033	24.0	82,249	22.9
Northeast (21 counties)	110,063	25.8	17,963	26.9	92,100	25.6
Northwest (18 counties)	30,966	7.3	4,046	6.1	26,920	7.5
Southeast (18 counties)	69,281	16.2	10,069	15.1	59,212	16.5
Southwest (17 counties)	55,059	12.9	7,636	11.4	47,423	13.2
Tulsa (1 county)	62,859	14.7	11,013	16.5	51,846	14.4
Total	426,510	100.0	66,760	100.0	359,750	100.0

[a]Non-Hispanic Asian or Pacific Islander, and Multiple Race, or declined to answer.

Medicaid adults who received more dental services either in EDs only or in both EDs and dental offices/clinics than in dental offices/clinics only were most likely to be aged 25 to 29 (30% and 25% vs 20%) or 30 to 34 (20% and 20% vs 15%) and to reside in urban counties (49% and 50% vs 42%) and in Central (29% and 29% vs 23%) or Southwest (14% and 17% vs 11%) regions (Table 2). Medicaid adults who received more dental services in EDs only than in dental offices/clinics only were most likely to be aged 35 to 44 (21% vs 17%) and/or of Non-Hispanic American Indian ethnicity (9% vs 6%).

Adult women, persons aged 21 to 24, and Non-Hispanic Caucasians received more dental services in both EDs and dental offices/clinics than in either dental offices/clinics only (78% vs 75%, 22% vs 18% and 68% vs 65%, respectively) or EDs only (78% vs 75%, 22% vs 18% and 68% vs 59%, respectively) (Table 2).

Table 2. Distribution of Adult Medicaid Enrollees Who Received At Least 1 Dental Service by Demographic and Geographic Characteristics and Provider Setting, 2012-2013

Demographic and geographic characteristics	Both ED and dental office or clinic		ED only		Dental office or clinic only	
	n	%	n	%	n	%
Sex						
Female	3,332	77.9	2,492	75.4	44,337	74.9
Male	945	22.1	812	24.6	14,873	25.1
Total	4,277	100.0	3,304	100.0	59,210	100.0
Age						
21-24 years	920	21.5	612	18.5	10,919	18.4
25-29 years	1,268	29.7	827	25.0	11,878	20.1
30-34 years	848	19.8	647	19.6	8,670	14.6
35-44 years	778	18.2	706	21.4	9,969	16.8
45-54 years	330	7.7	322	9.8	7,991	13.5
55-64 years	128	3.0	172	5.2	5,495	9.3
65+ years	5	0.1	18	0.5	4,288	7.2
Total	4,277	100.0	3,304	100.0	59,210	100.0
Race/ethnicity						
Caucasian, Non-Hispanic	2,894	67.7	1,947	58.9	38,695	65.4
Black or African American, Non-Hispanic	620	14.5	550	16.7	9,257	15.6
American Indian, Non-Hispanic	279	6.5	304	9.2	3,261	5.5
Other, Non-Hispanic[a]	269	6.3	268	8.1	3,845	6.6
Hispanic	215	5.0	235	7.1	4,152	7.0
Total	4,277	100.0	3,304	100.0	59,210	100.0
Rural/urban						
Mixed (5 counties)	272	6.4	173	5.2	4,342	7.3
Rural (68 counties)	1,928	45.1	1,474	44.6	29,733	50.2
Urban (4 counties)	2,077	48.6	1,657	50.2	25,104	42.4
Total	4,277	100.0	3,304	100.0	59,179	100.0
Region						
Central (2 counties)	1,222.00	28.6	958	29.0	13,853	23.4
Northeast (21 counties)	1,022.00	23.9	659	20.0	16,282	27.5
Northwest (18 counties)	242	5.7	185	5.6	3,619	6.1
Southeast (18 counties)	533	12.5	450	13.6	9,086	15.4
Southwest (17 counties)	616	14.4	571	17.3	6,449	10.9
Tulsa (1 county)	642	15.0	481	14.6	9,890	16.7
Total	4,277.00	100.0	3,304	100.0	59,179	100.0

[a]Non-Hispanic Asian or Pacific Islander, and Multiple Race, or declined to answer.

Medicaid Adults Receiving Services in Dental Offices or Clinics

Only 15% of Medicaid adults received any dental service in a dental office or clinic during the 2-year study period (Table 3). The services were primarily diagnostic and included clinical oral evaluation and radiographs (14%) and oral and maxillofacial surgery services (eg, extraction and surgical removal of an erupted tooth) (10%). Dental utilization rates were lower for preventive (4%), restorative (3%), and adjunctive (3%) services. Very few adults received periodontic, endodontic, prosthodontic, maxillofacial prosthetic/implants, or orthodontic treatments in a dental office, and few received any oral health care in a dental clinic.

Among the 66,791 adult Medicaid enrollees who received any dental service during the study period, most (95%) had at least 1 service in a dental office or clinic (Table 3). These were mainly diagnostic services (91%) and oral and maxillofacial surgery services (62%).

Table 3. Utilization Rates of Adult Medicaid Enrollees by Dental Services Received in Dental Offices or Clinics, 2012-2013

Dental service	Number of adult Medicaid enrollees with at least 1 specific dental service	Percent of all adult Medicaid enrollees (n=427,036)	Percent of adult Medicaid enrollees with any dental service (n=66,791)
	n	%	%
At least 1 service in a dental office or clinic	**63,487**	**14.9**	**95.1**
Diagnostic	60,534	14.2	90.6
Oral and maxillofacial surgery	41,263	9.7	61.8
Preventive	16,329	3.8	24.4
Restorative	11,316	2.6	16.9
Adjunctive	11,225	2.6	16.8
Periodontics	5,663	1.3	8.5
Clinic	2,236	0.5	3.3
Endodontics	1,755	0.4	2.6
Prosthodontics	1,011	0.2	1.5
Maxillofacial prosthetics and implants	17	0.0	0.0
Orthodontics	20	0.0	0.0

Note: Dental service categories are not mutually exclusive (eg, a patient may have had several categories of dental services).

Utilization rates of any services in a dental office or clinic were lower for men (12%) than for women (16%), for adults aged 55 and over (8%) than for younger adults (14%-21%), for Hispanics (9%) and Non-Hispanic American Indians (11%) than for other races/ethnicities (15%-19%), for those living in rural counties (14%)

versus urban or mixed counties (16%), and for adults living in Northwest, Southeast, and Southwest regions (12%-14%) versus other regions (16%) (Table 4).

The utilization rate of diagnostic, oral and maxillofacial surgery, preventive, restorative, and adjunctive services in a dental office or clinic was similar across demographic and geographic population groups (Table 4). However, utilization rates of oral and maxillofacial surgery services in a dental office or clinic were highest in women (10%), persons aged 25 to 29 (13%), Non-Hispanic Blacks or African Americans (13%), urban counties (10%), and the Tulsa region (11%).

Table 4. Utilization Rates of Services in Dental Offices or Clinics for Medicaid Adults (Percent of All Adult Medicaid Enrollees) by Demographic and Geographic Characteristics, 2012-2013

Demographic and geographic characteristics	All adult Medicaid enrollees	Adult Medicaid enrollees with at least 1 service in a dental office or clinic											
		Any dental office or clinic service		Diagnostic		Oral and maxillofacial surgery		Preventive		Restorative		Adjunctive	
	n	n	%	n	%	n	%	n	%	n	%	n	%
Sex													
Female	292,079	47,669	16.3	45,391	15.5	29,917	10.2	13,644	4.7	10,309	3.5	8,668	3.0
Male	134,957	15,818	11.7	15,143	11.2	11,346	8.4	2,685	2.0	1,007	0.7	2,557	1.9
Age													
21-24 years	58,556	11,839	20.2	11,056	18.9	5,987	10.2	5,026	8.6	3,760	6.4	2,338	4.0
25-29 years	61,831	13,146	21.3	12,591	20.4	8,015	13.0	4,599	7.4	3,733	6.0	2,453	4.0
30-34 years	51,638	9,518	18.4	9,235	17.9	6,453	12.5	2,590	5.0	1,834	3.6	1,741	3.4
35-44 years	69,899	10,747	15.4	10,310	14.7	7,649	10.9	2,038	2.9	1,119	1.6	1,887	2.7
45-54 years	60,303	8,321	13.8	7,941	13.2	6,125	10.2	1,159	1.9	422	0.7	1,369	2.3
55-64 years	51,761	5,623	10.9	5,339	10.3	4,166	8.0	639	1.2	284	0.5	886	1.7
65+ years	73,048	4,293	5.9	4,062	5.6	2,868	3.9	278	0.4	164	0.2	551	0.8
Race/ethnicity													
Caucasian, Non-Hispanic	267,171	41,589	15.6	39,664	14.8	27,407	10.3	10,565	4.0	7,193	2.7	7,664	2.9
Black or African American, Non-Hispanic	51,501	9,877	19.2	9,512	18.5	6,821	13.2	2,059	4.0	1,323	2.6	1,580	3.1
American Indian, Non-Hispanic	33,007	3,540	10.7	3,336	10.1	2,116	6.4	1,057	3.2	748	2.3	640	1.9
Other, Non-Hispanic[a]	27,217	4,114	15.1	3,914	14.4	2,514	9.2	1,174	4.3	951	3.5	695	2.6
Hispanic	48,140	4,367	9.1	4,108	8.5	2,405	5.0	1,474	3.1	1,101	2.3	646	1.3
Rural/urban													
Mixed (5 counties)	29,188	4,614	15.8	4,394	15.1	2,835	9.7	1,239	4.2	952	3.3	1,054	3.6
Rural (68 counties)	224,313	31,661	14.1	30,044	13.4	20,776	9.3	7,817	3.5	5,136	2.3	5,666	2.5
Urban (4 counties)	173,009	27,181	15.7	26,066	15.1	17,633	10.2	7,270	4.2	5,226	3.0	4,502	2.6
Region													
Central (2 counties)	98,282	15,075	15.3	14,565	14.8	9,783	10.0	3,420	3.5	2,890	2.9	2,050	2.1
Northeast (21 counties)	110,063	17,304	15.7	16,498	15.0	11,555	10.5	4,538	4.1	2,891	2.6	3,498	3.2
Northwest (18 counties)	30,966	3,861	12.5	3,614	11.7	2,281	7.4	1,228	4.0	804	2.6	641	2.1
Southeast (18 counties)	69,281	9,619	13.9	9,091	13.1	6,250	9.0	2,041	2.9	1,374	2.0	1,462	2.1
Southwest (17 counties)	55,059	7,065	12.8	6,748	12.3	4,535	8.2	1,610	2.9	1,330	2.4	1,469	2.7
Tulsa (1 county)	62,859	10,532	16.8	9,988	15.9	6,840	10.9	3,489	5.6	2,025	3.2	2,102	3.3

Note: Dental service categories are not mutually exclusive (eg, a patient may have had several categories of dental services).

[a]Non-Hispanic Asian or Pacific Islander, and Multiple Race, or declined to answer.

Medicaid Adults Receiving Services for Dental Problems in EDs

Among all adult Medicaid enrollees, nearly 2% received at least 1 service for dental problems in an ED during the study period (Table 5). Most such services were coded as "other diseases and conditions of the teeth and supporting structures" (0.9%), "diseases of pulp and periapical tissues" (0.4%), or "diseases of hard tissues of teeth" (0.4%). A small number of Medicaid adults received ED services for "diseases of the oral soft tissues, excluding gingiva and tongue lesions" (0.1%), "gingival and periodontal diseases" (0.1%), "dentofacial anomalies, including malocclusion" (0.1%), or other services.

Approximately 11% of adult Medicaid enrollees who received any dental service during the study period received at least 1 service for dental problems in an ED, mainly for "other diseases and conditions of the teeth and supporting structures" (6%), "diseases of pulp and periapical tissues" (3%), or "diseases of hard tissues of teeth" (3%) (Table 5).

Table 5. Utilization Rates of Adult Medicaid Enrollees by Dental Services Received in EDs, 2012-2013

Dental service	Number of adult Medicaid enrollees with at least 1 specific dental diagnosis	Percent of all adult Medicaid enrollees (n=427,036)	Percent of total adult Medicaid enrollees with at least 1 service (n=66,791)
	n	%	%
At least 1 dental service received in an ED	**7,581**	**1.8**	**11.4**
Other diseases and conditions of the teeth and supporting structures (525)	4,025	0.94	6.03
Diseases of pulp and periapical tissues (522)	1,789	0.42	2.68
Diseases of hard tissues of teeth (521)	1,783	0.42	2.67
Diseases of the oral soft tissues, excluding gingiva and tongue lesions (528)	530	0.12	0.79
Gingival and periodontal diseases (523)	312	0.07	0.47
Dentofacial anomalies, including malocclusion (524)	274	0.06	0.41
Diseases of the jaws (526)	135	0.03	0.20
Diseases of the salivary glands (527)	112	0.03	0.17
Diseases and other conditions of the tongue (529)	45	0.01	0.07
Disorders of tooth development and eruption (520)	26	0.01	0.04

Note: Dental service categories are not mutually exclusive (eg, a patient may have had several categories of dental services).

Among Medicaid adults, utilization rates of at least 1 service for dental problems in EDs were highest for women (2.0%), for adults aged 25 to 29 (3.4%), for Non-Hispanic Blacks or African Americans (2.3%), and for those living in urban counties (2.2%) and in Central (2.2%) and Southwest (2.2%) regions (Table 6). ED utilization rates for the 3 most prominent dental diagnosis groups (521, 522, and 525) were similar across demographic and geographic population groups.

Table 6. Utilization Rates of Dental-Related Services in EDs (Percent of All Adult Medicaid Enrollees) for Medicaid Adults by Demographic and Geographic Characteristics, 2012-2013

Demographic and geographic characteristics	All adult Medicaid enrollees	Adult Medicaid enrollees with at least 1 dental service in an ED							
		Any ED dental service		Other diseases and conditions of the teeth and supporting structures (525)		Diseases of pulp and periapical tissues (522)		Diseases of hard tissues of teeth (521)	
	n	n	%	n	%	n	%	n	%
Sex									
Female	292,079	5,824	2.0	3,125	1.1	1,342	0.5	1,333	0.5
Male	134,957	1,757	1.3	900	0.7	447	0.3	450	0.3
Age									
21-24 years	58,556	1,532	2.6	846	1.4	290	0.5	333	0.6
25-29 years	61,831	2,095	3.4	1,209	2.0	460	0.7	520	0.8
30-34 years	51,638	1,495	2.9	833	1.6	377	0.7	380	0.7
35-44 years	69,899	1,484	2.1	755	1.1	398	0.6	344	0.5
45-54 years	60,303	652	1.1	275	0.5	174	0.3	144	0.2
55-64 years	51,761	300	0.6	102	0.2	85	0.2	58	0.1
65+ years	73,048	23	0.0	5	0.0	5	0.0	4	0.0
Race/ethnicity									
Caucasian, Non-Hispanic	267,171	4,841	1.8	2,504	0.9	1,176	0.4	1,160	0.4
Black or African American, Non-Hispanic	51,501	1,170	2.3	669	1.3	261	0.5	271	0.5
American Indian, Non-Hispanic	33,007	583	1.8	325	1.0	137	0.4	133	0.4
Other, Non-Hispanic[a]	27,217	537	2.0	303	1.1	115	0.4	118	0.4
Hispanic	48,140	450	0.9	224	0.5	100	0.2	101	0.2
Rural/urban									
Mixed (5 counties)	29,188	445	1.5	255	0.9	81	0.3	93	0.3
Rural (68 counties)	224,313	3,402	1.5	1,649	0.7	919	0.4	756	0.3
Urban (4 counties)	173,009	3,734	2.2	2,121	1.2	789	0.5	934	0.5
Region									
Central (2 counties)	98,282	2,180	2.2	1,277	1.3	470	0.5	528	0.5
Northeast (21 counties)	110,063	1,681	1.5	896	0.8	379	0.3	325	0.3
Northwest (18 counties)	30,966	427	1.4	216	0.7	93	0.3	110	0.4
Southeast (18 counties)	69,281	983	1.4	407	0.6	304	0.4	258	0.4
Southwest (17 counties)	55,059	1,187	2.2	663	1.2	344	0.6	219	0.4
Tulsa (1 county)	62,859	1,123	1.8	566	0.9	199	0.3	343	0.5

Note: Dental service categories are not mutually exclusive (eg, a patient may have had several categories of dental services).

[a]Non-Hispanic Asian or Pacific Islander, and Multiple Race, or declined to answer.

Number of Visits and Providers per Medicaid Adult

Among the adult Medicaid enrollees who received any dental services during the 2-year study period, 43% had only 1 dental visit, 26% had 2 visits, and 26% had between 3 and 5 visits (Table 7). A small percentage (6%) of Medicaid adults had more than 5 visits during the study period.

Adults who received dental services in EDs versus dental offices or clinics were more likely to have either a single visit (47% vs 42%) or more than 5 visits (8% vs 6%) over the study period (Table 7). Conversely, more adults receiving services in dental offices or clinics relative to EDs had 2 visits during the study period (27% vs 21%).

Table 7. Dental-Related Visits per Adult Medicaid Enrollee by Provider Setting, 2012-2013

Dental visits per adult Medicaid enrollee	Any setting		Dental office or clinic		ED	
	n	%	n	%	n	%
1 visits	28,444	42.6	25,786	42.2	2,658	46.8
2 visits	17,398	26.1	16,229	26.6	1,169	20.6
3-5 visits	17,109	25.6	15,683	25.7	1,426	25.1
>5 visits	3,840	5.8	3,414	5.6	426	7.5
Total	66,791	100.0	61,112	100.0	5,679	100.0

Note: Dental visit categories are not mutually exclusive (eg, a patient visiting a dental office or clinic may also have visited an ED).

The number of dental visits per Medicaid adult who utilized services during the study period varied from 1 to 37, with an average of 2.3 visits distributed roughly equally across dental offices/clinics and EDs (Table 8).

On average, adults receiving the most services in dental offices or clinics were adults aged 25 to 29 years (2.5) and those residing in the Northeast region (2.5), while those aged 55 to 64 (2.1) and 65 and over (1.9), Non-Hispanic Blacks or African Americans (2.1), and Hispanics (2.1) had the fewest (Table 8). Adults aged 21 to 29 and those residing in mixed urban-rural counties had, on average, the most ED visits for dental-related problems (2.6 and 2.7, respectively), while those aged 55 to 64 (1.9) and aged 65 and over had the fewest (1.1).

Table 8. Average Number of Dental Visits per Medicaid Adult by Demographic and Geographic Characteristics and Provider Setting, 2012-2013

Demographic and geographic characteristics	Any setting	Dental office or clinic	ED
Adult Medicaid enrollees with at least 1 dental service			
Average (range)	2.3 (1-37)	2.3 (1-37)	2.4 (1-24)
Sex			
Female	2.3	2.3	2.4
Male	2.3	2.2	2.4
Age			
21-24 years	2.4	2.4	2.6
25-29 years	2.5	2.5	2.6
30-34 years	2.4	2.4	2.5
35-44 years	2.3	2.3	2.3
45-54 years	2.2	2.2	2.1
55-64 years	2.1	2.1	1.9
65+ years	1.9	1.9	1.1
Race/ethnicity			
Caucasian, Non-Hispanic	2.4	2.4	2.5
Black or African American, Non-Hispanic	2.1	2.1	2.3
American Indian, Non-Hispanic	2.4	2.4	2.3
Other, Non-Hispanic[a]	2.3	2.3	2.4
Hispanic	2.1	2.1	2.2
Urban/rural			
Mixed (5 counties)	2.4	2.4	2.7
Rural (68 counties)	2.4	2.4	2.3
Urban (4 counties)	2.2	2.2	2.5
Region			
Central (2 counties)	2.2	2.2	2.5
Northeast (21 counties)	2.5	2.5	2.5
Northwest (18 counties)	2.3	2.3	2.5
Southeast (18 counties)	2.4	2.4	2.2
Southwest (17 counties)	2.3	2.3	2.4
Tulsa (1 county)	2.3	2.2	2.5

Note: Dental visit categories are not mutually exclusive (eg, a patient visiting a dental office or clinic may also have visited an ED).

[a]Non-Hispanic Asian or Pacific Islander, and Multiple Race, or declined to answer.

Among the 66,791 Medicaid adults with at least 1 dental visit during the study period, 21% (n=13,961) visited multiple general dentists, 1% (n=740) visited multiple dental specialists, and 3% (n=1,751) visited multiple ED providers (Table 9).

Relative to all Medicaid adults accessing dental services, women (78% vs 75%) and adults aged 25 to 29 (24% vs 21%) were proportionately more likely to receive services from multiple general dentists. Similarly, men (31% vs 25%); older adults aged 45 to 54 (19% vs 13%), 55 to 64 (14% vs 9%), and 65 and over (10% vs 6%); and Non-Hispanic Caucasians (70% vs 65%) were more likely to receive dental services from multiple dental specialists, while adults aged 25 to 29 (30% vs 21%) and 30 to 34 (22% vs 15%) were more likely to receive services from multiple ED providers (Table 9).

Relative to all Medicaid adults accessing dental services, adults residing in urban counties were proportionately more likely to visit multiple general dentists (50% vs 43%), multiple dental specialists (54% vs 43%), or multiple ED providers (56% vs 43%), as were those residing in the Central region of the state (31% vs 24%, 37% vs 24%, and 34% vs 24%, respectively) (Table 9). Likewise, adults residing in the Southwest region were more likely to access services from multiple dental specialists (15% vs 11%) and multiple ED providers (17% vs 11%).

Table 9. Distribution of Adult Medicaid Enrollees Who Received Dental Services From Multiple Providers by Demographic and Geographic Characteristics, 2012-2013

Demographic and geographic characteristics	Adult Medicaid enrollees who received dental services from multiple providers						All adult Medicaid enrollees with dental services	
	Multiple general dentists (range: 2-11)		Multiple dental specialists (range: 2-4)		Multiple ED providers (range: 2-16)			
	n	%	n	%	n	%	n	%
Sex								
Female	10,872	77.9	509	68.8	1,340	76.5	50,161	75.1
Male	3,089	22.1	231	31.2	411	23.5	16,630	24.9
Total	13,961	100.0	740	100.0	1,751	100.0	66,791	100.0
Age								
21-24 years	2,920	20.9	96	13.0	368	21.0	12,451	18.6
25-29 years	3,367	24.1	127	17.2	532	30.4	13,973	20.9
30-34 years	2,258	16.2	76	10.3	388	22.2	10,165	15.2
35-44 years	2,297	16.5	118	16.0	297	17.0	11,453	17.2
45-54 years	1,554	11.1	140	18.9	120	6.9	8,643	12.9
55-64 years	982	7.0	105	14.2	45	2.6	5,795	8.7
65+ years	583	4.2	78	10.5	1	0.1	4,311	6.5
Total	13,961	100.0	740	100.0	1,751	100.0	66,791	100.0
Race/ethnicity								
Caucasian, Non-Hispanic	9,005	64.5	514	69.5	1,108	63.3	43,536	65.2
Black or African American, Non-Hispanic	2,341	16.8	137	18.5	267	15.3	10,427	15.6
American Indian, Non-Hispanic	758	5.4	23	3.1	148	8.5	3,844	5.8
Other, Non-Hispanic[a]	913	6.5	34	4.6	134	7.7	4,382	6.6
Hispanic	944	6.8	32	4.3	94	5.4	4,602	6.9
Total	13,961	100.0	740	100.0	1,751	100.0	66,791	100.0
Provider's location (urban/rural)								
Mixed (5 counties)	931	6.7	55	7.5	106	6.1	4,787	7.2
Rural (68 counties)	6,068	43.5	288	39.0	668	38.2	33,135	49.6
Urban (4 counties)	6,958	49.9	395	53.5	977	55.8	28,838	43.2
Total	13,957	100.0	738	100.0	1,751	100.0	66,760	100.0
Provider's location (region)								
Central (2 counties)	4,363	31.3	271	36.7	586	33.5	16,033	24.0
Northeast (21 counties)	3,761	27.0	125	16.9	329	18.8	17,963	26.9
Northwest (18 counties)	660	4.7	44	6.0	101	5.8	4,046	6.1
Southeast (18 counties)	1,630	11.7	95	12.9	170	9.7	10,069	15.1
Southwest (17 counties)	1,354	9.7	109	14.8	295	16.9	7,636	11.4
Tulsa (1 county)	2,189	15.7	94	12.7	270	15.4	11,013	16.5
Total	13,957	100.0	738	100.0	1,751	100.0	66,760	100.0

Note: Dental service/provider categories are not mutually exclusive (eg, a patient visiting multiple general dentists may also have visited multiple EDs).

[a]Non-Hispanic Asian or Pacific Islander, and Multiple Race, or declined to answer.

Providers of Dental Services

Providers offering dental treatment services to Medicaid-enrolled adults during the 2-year study period were equally likely to be located in dental offices or clinics (1,077 providers) and EDs (1,103 providers) (Table 10). Dental offices or clinics included general dentists (76%), dental clinics and Federally Qualified Health Clinics (FQHCs) (10%), oral surgeons (6%), and pediatric dentists (4%). The usual providers of dental-related services in EDs were physicians (77%), physician assistants (15%), and certified nurse practitioners (7%).

Table 10. Distribution of Providers of Dental Services to Adult Medicaid Enrollees by Provider Setting and Specialty or Type, 2012-2013

Provider setting and specialty or type	n	%
Dental offices or clinics		
General dentistry practitioner	817	75.9
Dental clinic	88	8.2
Oral surgeon	68	6.3
Pediatric dentist	41	3.8
FQHC	21	2.0
Orthodontist	16	1.5
Periodontist	6	0.6
Other[a]	20	1.9
Total	1,077	100.0
EDs		
Physician	851	77.2
Physician assistant	167	15.1
Certified nurse practitioner	78	7.1
Other[b]	7	0.6
Total	1,103	100.0

[a]Prosthodontist, general dentist with orthodontic privileges, endodontist, Indian Health Service (IHS)/tribal clinic, IHS hospital, other.

[b]Clinical nurse specialist, unknown.

Slightly more than half (53%) of providers who treated Medicaid adults in dental offices or clinics during the study period were located in urban counties, while about 1/3 (36%) were in rural counties and the rest were in mixed urban-rural counties (6%) and in neighboring states (5%) (Table 11). On the other hand, EDs providing dental treatment services were about evenly distributed between rural and urban areas, with a slightly larger proportion located in rural counties (44%) than in urban counties (40%) (Table 11).

The results showed a similar distribution of dental providers across regions, with more providers in dental offices or clinics located in the urban Central region (31%) than in other regions (5%-20%) (Table 11).

Table 11. Distribution of Providers of Dental Services to Adult Medicaid Enrollees by Provider Location and Setting, 2012-2013

Provider location	Providers in dental offices or clinics		Providers in EDs		Total providers	
	n	%	n	%	n	%
Rural/urban						
Mixed (5 counties)	67	6.2	72	6.5	139	6.4
Rural (68 counties)	389	36.1	483	43.8	872	40.0
Urban (4 counties)	566	52.6	439	39.8	1,005	46.1
Out of state[a]	55	5.1	108	9.8	163	7.5
Total	1,077	100.0	1,102	100.0	2,179	100.0
Region						
Central (2 counties)	333	30.9	262	23.8	595	27.3
Northeast (21 counties)	201	18.7	207	18.8	408	18.7
Northwest (18 counties)	82	7.6	118	10.7	200	9.2
Southeast (18 counties)	106	9.8	114	10.3	220	10.1
Southwest (17 counties)	88	8.2	142	12.9	230	10.6
Tulsa (1 county)	212	19.7	151	13.7	363	16.7
Out of state[a]	55	5.1	108	9.8	163	7.5
Total	1,077	100.0	1,102	100.0	2,179	100.0

[a]Arkansas (n=83), Kansas (n=16), Texas (n=43), Missouri (n=10), New Mexico (n=1), not specified (n=10).

Types of Dental Services Provided

The most frequent CDT procedure codes on claims submitted to Medicaid by providers in dental offices and clinics were (Table 12):

- Limited oral evaluation—problem focused (emergency examination) (16%)
- Intraoral periapical—first film (13%)
- Surgical removal of erupted tooth requiring elevation of mucoperiosteal flap and removal of bone and/or section of tooth (9%)

The most frequent ICD-9-CM codes on claims submitted to Medicaid by providers of dental treatment services in EDs were (Table 12):

- Unspecified disorder of the teeth and supporting structures (48%)
- Dental caries, unspecified (20%)
- Periapical abscess without sinus (16%)

Table 12. Distribution of Dental Services Provided to Adult Medicaid Enrollees by Dental Procedures or Diagnoses and Provider Setting, 2012-2013

Dental services and provider setting	n	%
Dental procedures in a dental office or clinic (CDT codes)		
Limited oral evaluation—problem focused (emergency examination) (D0140)	78,475	15.5
Intraoral periapical—first film (D0220)	66,045	13.1
Surgical removal of erupted tooth requiring elevation of mucoperiosteal flap and removal of bone and/or section of tooth (D7210)	46,953	9.3
Panoramic film (D0330)	41,393	8.2
Intraoral periapical—additional film (D0230)	27,664	5.5
Extraction, erupted tooth or exposed root (elevation and/or forceps removal) (D7140)	26,737	5.3
Other dental procedures (that each accounted for <5% of total claims)[a]	217,922	43.2
Total claims	505,189	100.0
Dental-related diagnoses in an ED (ICD-9-CM codes)		
Unspecified disorder of the teeth and supporting structures (525.9)	4,584	47.8
Dental caries, unspecified (521.0)	1,891	19.7
Periapical abscess without sinus (522.5)	1,567	16.4
Other dental diagnoses (that each accounted for <5% of total claims)[b]	1,541	16.1
Total claims	9,583	100.0

[a]Examples of procedures that each accounted for <5% of total claims: dental prophylaxis, adult (D1110), 4.2%; comprehensive oral evaluation (D0150), 3.4%; bitewings—4 images (D0274), 3.4%; periodic oral evaluation (D0120), 2.6%; periodontal scaling and root planning (D4341), 1.8%; amalgam—2 surfaces, permanent (D2150), 1.7%; general anesthesia (D9220), 1.6%; resin-based composite—1 surface, posterior (D2391), 1.5%; and others.

[b]Examples of diagnoses that each accounted for <5% of total claims: temporomandibular joint disorders, unspecified (524.6), 2.2%; acute apical periodontitis of pulpal origin (522.4), 2.2%; other and unspecified diseases of the oral soft tissues (528.9), 1.5%; chronic gingivitis, plaque induced (52310), 1.3%; and others.

Number of Patients and Encounters per Provider

About 35% of providers in dental offices or clinics treated fewer than 10 Medicaid adults during the study period, while 25% treated between 10 and 49 patients, 22% treated between 50 and 150 patients, and 17% treated 150 or more (Table 13). In contrast, 68% of providers in EDs provided dental-related services to fewer than 10 Medicaid adults, while 30% treated between 10 and 49 patients and only 2% treated 50 or more.

A similar distribution pattern was observed when assessing the number of encounters per provider, with nearly all high-volume providers utilized during the study period being located in dental offices or clinics and more low-volume providers being located in EDs (Table 13).

Table 13. Distribution of Providers of Dental Services to Adult Medicaid Enrollees by Volume of Patients and Encounters and Provider Setting, 2012-2013

Patients and encounters per provider	Providers in dental offices or clinics		Providers in EDs		Total providers	
	n	%	n	%	n	%
Patients per provider						
1-9 patients	379	35.2	752	68.2	1,131	51.9
10-49 patients	271	25.2	326	29.6	597	27.4
50-149 patients	239	22.2	23	2.1	262	12.0
150-299 patients	124	11.5	2	0.2	126	5.8
300+ patients	64	5.9	0	0.0	64	2.9
Total	1,077	100.0	1,103	100.0	2,180	100.0
Encounters per provider						
1-9 encounters	336	31.2	742	67.3	1,078	49.5
10-49 encounters	229	21.3	334	30.3	563	25.8
50-149 encounters	203	18.9	25	2.3	228	10.5
150-299 encounters	164	15.2	2	0.2	166	7.6
300+ encounters	145	13.5	0	0.0	145	6.7
Total	1,077	100.0	1,103	100.0	2,180	100.0

Note: Dental services/provider categories are not mutually exclusive (eg, a patient visiting a provider in a dental office or clinic may also have visited a provider in an ED).

Providers in dental offices and clinics treated between 1 and 1,238 unique Medicaid-enrolled adults (an average of 82 patients) during the study period. However, half of all providers in community settings provided services to 28 or fewer Medicaid adults (Table 14). Providers in EDs treated between 1 and 170 Medicaid-enrolled adults for dental-related problems (an average of 10 patients) over the study period, and half of these providers treated 5 or fewer Medicaid adults.

The median numbers of Medicaid-insured patients and encounters per provider in dental offices and clinics were higher in rural areas (49 patients, 81 encounters) than in urban areas (18 patients, 28 encounters) and much higher than the per-provider counts in EDs (Table 14). The median numbers of patients and encounters per provider in EDs varied somewhat by geography, those in rural areas (5 patients, 5 encounters) being slightly lower than those in urban areas (7 patients, 7 encounters).

The median numbers of patients and encounters per provider in dental offices and clinics were considerably higher in the Northeast region (67 patients, 105 encounters) than in other regions (Table 14).

Table 14. Median Number of Patients and Encounters per Provider Servicing Adult Medicaid Enrollees by Provider Location and Setting, 2012-2013

Provider location	Median number of patients and encounters					
	Providers in dental offices or clinics		Providers in EDs		Total providers	
	Patients	Encounters	Patients	Encounters	Patients	Encounters
Statewide						
Median (25th-75th percentiles)	28 (4-110)	41 (5-177)	5 (2-12)	5 (2-13)	9 (2-34)	10 (2-49)
Urban/rural						
Mixed (5 counties)	31	55	5	6	10	13
Rural (68 counties)	49	81	5	5	9	11
Urban (4 counties)	18	28	7	7	10	11
Out of state[a]	5	7	2	2	2	2
Region						
Central (2 counties)	15	21	7	7	9	10
Northeast (21 counties)	67	105	5	5	10	11
Northwest (18 counties)	24	39	4	4	8	8
Southeast (18 counties)	47	72	7	7	13	14
Southwest (17 counties)	46	78	6	6	11	12
Tulsa (1 county)	23	32	6	7	11	13

[a]Arkansas (n=83), Kansas (n=16), Texas (n=43), Missouri (n=10), New Mexico (n=1), not specified (n=10).

Payment for Adult Dental Services Provided in Dental Offices and Clinics by Medicaid Insurance in Oklahoma

The total cost of services provided to Medicaid adults in dental offices and clinics was nearly $40 million over the 2-year study period (Table 15). The cost distribution by provider specialty was 79% for general dentists, 20% for dental specialists, and 1% for dental clinics. The average costs per patient and per encounter during the study period were highest for services provided by dental specialists ($776 and $533, respectively).

The total cost and average costs per patient and encounter were higher in urban counties ($21,282,220 total, $464 per patient, $292 per encounter) than in rural counties ($15,253,549 total, $430 per patient, $236 per encounter) (Table 15). The total cost was highest in the Central ($10.3 million), Tulsa ($9.8 million), and Northeast ($9.2 million) regions. The average costs per patient and encounter were highest in the Tulsa region ($546 per patient, $332 per encounter) and the Northwest region ($503 per patient, $292 per encounter).

Table 15. The Cost of Dental Office/Clinic Services per Medicaid Adult by Provider Location, 2012-2013

Provider specialty and location	Providers in dental offices and clinics				
	Patients	Encounters	Total cost	Average cost per patient	Average cost per encounter
Provider specialty					
General dentist	75,945	130,749	$31,497,085	$415	$241
Dental specialist	10,214	14,874	$7,928,607	$776	$533
Dental clinic[a]	1,967	3,052	$380,739	$194	$125
Total	88,126	148,675	$39,806,431	$452	$268
Urban/rural					
Mixed (5 counties)	5,673	9,551	$2,722,887	$480	$285
Rural (68 counties)	35,457	64,646	$15,253,549	$430	$236
Urban (4 counties)	45,897	72,811	$21,282,220	$464	$292
Out of state[b]	1,114	1,685	$547,775	$492	$325
Total	88,141	148,693	$39,806,431	$452	$268
Region					
Central (2 counties)	25,956	40,113	$10,338,580	$398	$258
Northeast (21 counties)	20,190	36,175	$9,244,363	$458	$256
Northwest (18 counties)	5,546	9,561	$2,787,104	$503	$292
Southeast (18 counties)	10,435	19,961	$3,997,857	$383	$200
Southwest (17 counties)	6,973	11,731	$3,107,852	$446	$265
Tulsa (1 county)	17,927	29,467	$9,782,899	$546	$332
Total	87,027	147,008	$39,258,655	$451	$267

[a]Dental clinic, FQHC, IHS Hospital, IHS/tribal clinic.

[b]Arkansas (n=83), Kansas (n=16), Texas (n=43), Missouri (n=10), New Mexico (n=1), not specified (n=10).

Commuting Distances of Medicaid Adults to Obtain Dental Services in Oklahoma

Approximately 47% of adult Medicaid enrollees commuted less than 10 miles from their residence to receive dental services, while 21% traveled 10 to 25 miles, 23% traveled 25 to 100 miles, and 9% traveled 100 or more miles. Commuting distances were similar whether patients commuted to dental offices/ clinics or to EDs (Table 16).

Table 16. Distribution of Adult Medicaid Enrollees by Commuting Distance From Their Residence to the Dental Provider by Provider Setting, 2012-2013

Commuting distance	Patients commuting to providers in dental offices or clinics		Patients commuting to providers in EDs		Patients commuting to all providers	
	n	%	n	%	n	%
<3 miles	20,256	23.1	2,178	20.6	22,434	22.8
3-10 miles	21,343	24.3	2,554	24.1	23,897	24.3
10-25 miles	18,918	21.6	2,051	19.4	20,969	21.3
25-100 miles	20,169	23.0	2,509	23.7	22,678	23.1
100+ miles	7,083	8.1	1,304	12.3	8,387	8.5
Total	87,769	100.0	10,596	100.0	98,365	100.0

Statewide, half of adult Medicaid enrollees traveled more than 10 miles to obtain oral health services from private-practice general dentists and more than 21 miles to receive services from dental specialists and clinic providers (Table 17). Half of those Medicaid adults who sought dental services in EDs traveled more than 13 miles.

Patients in rural areas traveled the farthest to obtain dental services (Table 17). Medicaid adults residing in rural counties commuted a median of 55 miles for dental specialty services compared with 8 miles for those residing in urban counties. Those rural residents who sought dental care in an ED traveled a median distance of 28 miles compared with 8 miles for urban residents. Rural residents commuting to private-practice general dentists travelled a median of 16 miles compared with 7 miles for urban residents. Patients in mixed geographic areas also encountered longer commutes than those living in urban areas.

Commutes also varied by region (Table 17). Median commuting distances to private-practice dentists (23 miles) and clinics (63 miles) were higher in the Southwest than in other regions, while median distances to dental specialists (86 miles) and EDs (28 miles) were highest in the Southeast region.

Table 17. Median Commuting Distance (Miles) From Adult Medicaid Enrollees to Dental Providers by Residence Location and Provider Setting, 2012-2013

Residence location	Median commuting distance (miles) to community dental providers			Median commuting distance (miles) to ED providers
	Private-practice general dentists	Dental specialists	Clinics	
Statewide				
Median	10.1	21.3	21.1	12.7
Urban/rural				
Mixed	14.0	19.4	21.3	24.7
Rural	15.9	55.3	24.4	27.8
Urban	6.8	7.5	5.1	7.7
Region				
Central	6.7	10.3	4.9	8.7
Northeast	13.4	40.1	19.0	25.9
Northwest	14.1	28.3	30.2	23.9
Southeast	18.0	86.3	28.3	28.4
Southwest	23.1	43.6	62.9	24.1
Tulsa	6.6	6.7	5.9	7.0

County Analysis of Medicaid Dental Care Among Adults in Oklahoma

Analysis of Medicaid utilization data by location of dental providers identified 11 counties with no private-practice general dentists billing Medicaid for adult dental services in 2012 and 2013 (Table 18). These counties were:

- Nowata in the Northeast region
- Cimarron, Grant, Major, Roger Mills, and Texas in the Northwest region
- Marshall in the Southeast region
- Cotton, Jefferson, Kiowa, and Tillman in the Southwest region

The number of private-practice general dentists who provided dental services to Medicaid adult enrollees varied from 1 (in 15 counties) to more than 100 (in Tulsa [n=150] and Oklahoma [n=214] counties) (Table 18).

The prevalence of adult Medicaid enrollees as a percentage of each county's population ranged from 5% in Beaver to 20% in Choctaw and Pushmataha (Table 18). The percentage of Medicaid-insured adults who

received any services for dental problems ranged from less than 9% in 5 counties to more than 18% in 2 counties. In each of the 5 counties with low utilization rates, there were either no private-practice general dentists treating Medicaid-insured patients or only 1 dentist offering services to this population. In the 2 counties with the highest utilization rates, there were 10 or more private-practice general dentists providing care to Medicaid-insured adults.

The median commuting distance from the residence of a Medicaid adult to a community dental provider varied from less than 5 miles in Garfield and Woodward counties to more than 65 miles in Cimarron and Texas counties (Table 18). Half of the Medicaid adults in 41 of 77 counties in Oklahoma traveled at least twice the median commuting distance in the state (11 miles), most of these counties being located in the Northwest (11 of 18 counties), Southeast (10 of 18 counties), and Southwest (13 of 17 counties) regions.

Table 18. Analysis of Adult Medicaid Enrollees and Community Dental Providers by County, 2012-2013

Region and county	Community dental providers (n) for Medicaid enrollees			Number of adult Medicaid patients who received dental services[a]	Total adult Medicaid enrollees[b]	Total population (2010)	Adult Medicaid enrollees as percent of population	Adult Medicaid patients who received dental services as percent of enrollees	Private-practice general dentists providing services to Medicaid enrollees per 1,000 adult Medicaid enrollees	Adult Medicaid enrollees per 1 private-practice general dentist providing services to Medicaid enrollees	Median commuting distance (miles) to community dental providers
	Private-practice general dentists	Dental specialists	Clinics								
Central region											
Cleveland	31	3	8	2,584	17,833	255,755	7.0	14.5	1.7	575	12.2
Oklahoma	214	42	31	12,491	80,449	718,633	11.2	15.5	2.7	376	6.6
Northeast region											
Adair	5			503	4,120	22,683	18.2	12.2	1.2	824	13.3
Cherokee	15	3	2	1,074	6,179	46,987	13.2	17.4	2.4	412	6.6
Craig	3			412	2,391	15,029	15.9	17.2	1.3	797	20.8
Creek	13		2	1,545	9,071	69,967	13.0	17.0	1.4	698	14.6
Delaware	8		3	679	6,143	41,487	14.8	11.1	1.3	768	12.8
Kay	7		2	938	6,721	46,562	14.4	14.0	1.0	960	16.8
Lincoln	7			592	3,840	34,273	11.2	15.4	1.8	549	19.1
Mayes	10			826	5,786	41,259	14.0	14.3	1.7	579	23.9
Muskogee	25	2	1	1,979	10,896	70,990	15.3	18.2	2.3	436	9.2
Noble	1			189	1,243	11,561	10.8	15.2	0.8	1,243	33.4
Nowata				185	1,304	10,536	12.4	14.2	0.0	1304[c]	45.6
Okfuskee	1			365	2,287	12,191	18.8	16.0	0.4	2,287	26.7
Okmulgee	11		2	1,139	6,143	40,069	15.3	18.5	1.8	558	15.9
Osage	4		2	561	3,791	47,472	8.0	14.8	1.1	948	17.9
Ottawa	4			990	5,602	31,848	17.6	17.7	0.7	1,401	17.2
Pawnee	4			323	2,211	16,577	13.3	14.6	1.8	553	24.7
Payne	13	1	1	1,009	6,529	77,350	8.4	15.5	2.0	502	28.6
Rogers	18		1	1,070	7,957	86,905	9.2	13.4	2.3	442	15.4
Sequoyah	10		2	1,139	6,960	42,391	16.4	16.4	1.4	696	12.9
Wagoner	7		1	985	5,752	73,085	7.9	17.1	1.2	822	13.5
Washington	8	2		801	5,137	50,976	10.1	15.6	1.6	642	39.3
Northwest region											
Alfalfa	2			42	426	5,642	7.6	9.9	4.7	213	40.7
Beaver	1			34	298	5,636	5.3	11.4	3.4	298	24.9
Blaine	3		1	149	1,321	11,943	11.1	11.3	2.3	440	47.5
Canadian	22	6	3	1,046	7,212	115,541	6.2	14.5	3.1	328	17.0
Cimarron				4	219	2,475	8.8	1.8	0.0	219[c]	243.5
Custer	9			300	2,766	27,469	10.1	10.8	3.3	307	18.3
Dewey	1			25	376	4,810	7.8	6.6	2.7	376	40.8
Ellis	2			26	274	4,151	6.6	9.5	7.3	137	29.7
Garfield	12	3	1	941	6,780	60,580	11.2	13.9	1.8	565	3.3
Grant				58	418	4,527	9.2	13.9	0.0	418[c]	33.8
Harper	1			24	289	3,685	7.8	8.3	3.5	289	26.5
Kingfisher	5		1	144	1,235	15,034	8.2	11.7	4.0	247	19.7
Logan	4			608	3,936	41,848	9.4	15.4	1.0	984	16.1
Major				75	682	7,527	9.1	11.0	0.0	682[c]	43.0
Roger Mills				26	255	3,647	7.0	10.2	0.0	255[c]	50.6
Texas				65	1,875	20,640	9.1	3.5	0.0	1875[c]	67.0
Woods	1			61	747	8,878	8.4	8.2	1.3	747	20.4
Woodward	3		1	233	1,857	20,081	9.2	12.5	1.6	619	2.6

Note: Shading indicates no private-practice general dentists providing services to Medicaid adults.

[a]"Total" includes 31 adult Medicaid patients in state institutions.

[b]"Total" includes 526 adult Medicaid enrollees in state institutions.

[c]Per *Oklahoma: 2010 Population and Housing Unit Counts,* 2010 Census of Population and Housing. [5]

Table 18. Analysis of Adult Medicaid Enrollees and Community Dental Providers by County, 2012-2013 (Cont.)

Region and county	Community dental providers (n) for Medicaid enrollees			Number of adult Medicaid patients who received dental services[a]	Total adult Medicaid enrollees[b]	Total population (2010)	Adult Medicaid enrollees as percent of population	Adult Medicaid patients who received dental services as percent of enrollees	Private-practice general dentists providing services to Medicaid enrollees per 1,000 adult Medicaid enrollees	Adult Medicaid enrollees per 1 private-practice general dentist providing services to Medicaid enrollees	Median commuting distance (miles) to community dental providers
	Private-practice general dentists	Dental specialists	Clinics								
Southeast region											
Atoka	2			203	2,090	14,182	14.7	9.7	1.0	1,045	33.7
Bryan	12	2	1	960	6,753	42,416	15.9	14.2	1.8	563	6.0
Choctaw	1			323	3,112	15,205	20.5	10.4	0.3	3,112	42.5
Coal	1			109	892	5,925	15.1	12.2	1.1	892	46.6
Haskell	3		1	394	2,331	12,769	18.3	16.9	1.3	777	17.2
Hughes	4	1	1	303	2,088	14,003	14.9	14.5	1.9	522	23.4
Johnston	4		1	256	1,968	10,957	18.0	13.0	2.0	492	22.1
Latimer	1			246	1,507	11,154	13.5	16.3	0.7	1,507	14.2
Le Flore	5			1,157	8,119	50,384	16.1	14.3	0.6	1,624	13.5
Marshall			1	288	2,280	15,840	14.4	12.6	0.0	2,280[c]	23.0
McCurtain	2		1	715	6,252	33,151	18.9	11.4	0.3	3,126	35.3
McIntosh	6			455	3,432	20,252	16.9	13.3	1.7	572	35.6
Murray	2		1	246	1,829	13,488	13.6	13.4	1.1	915	9.0
Pittsburg	12	1	3	839	5,485	45,837	12.0	15.3	2.2	457	13.8
Pontotoc	5	3	2	802	4,759	37,492	12.7	16.9	1.1	952	64.1
Pottawatomie	16		2	1,480	9,699	69,442	14.0	15.3	1.6	606	20.9
Pushmataha	1		1	213	2,261	11,572	19.5	9.4	0.4	2,261	32.3
Seminole	5		1	630	4,424	25,482	17.4	14.2	1.1	885	21.7
Southwest region											
Beckham	4			284	2,650	22,119	12.0	10.7	1.5	663	37.6
Caddo	3		1	489	3,968	29,600	13.4	12.3	0.8	1,323	52.9
Carter	11	5	1	722	6,909	47,557	14.5	10.5	1.6	628	18.3
Comanche	12	8	1	1,574	11,868	124,098	9.6	13.3	1.0	989	22.5
Cotton				78	705	6,193	11.4	11.1	0.0	705[c]	26.5
Garvin	5			561	3,722	27,576	13.5	15.1	1.3	744	31.7
Grady	9		1	826	5,621	52,431	10.7	14.7	1.6	625	24.7
Greer	1			112	853	6,239	13.7	13.1	1.2	853	10.5
Harmon	1			60	500	2,922	17.1	12.0	2.0	500	31.8
Jackson	1			362	3,273	26,446	12.4	11.1	0.3	3,273	59.7
Jefferson				149	1,109	6,472	17.1	13.4	0.0	1109[c]	24.7
Kiowa				199	1,586	9,446	16.8	12.5	0.0	1586[c]	40.9
Love	1			91	1,218	9,423	12.9	7.5	0.8	1,218	24.0
McClain	9			430	3,217	34,506	9.3	13.4	2.8	357	15.3
Stephens	11		1	873	5,549	45,048	12.3	15.7	2.0	504	5.4
Tillman				132	1,225	7,992	15.3	10.8	0.0	1225[c]	52.7
Washita	1			123	1,086	11,629	9.3	11.3	0.9	1,086	34.4
Tulsa region											
Tulsa	150	37	22	10,532	62,859	603,403	10.4	16.8	2.4	419	6.6
Out of state											
Arkansas, Kansas, Missouri, Texas	31	16	5								
Total	817	135	113	63,456	426,510	3,751,351	11.4	14.9	1.9	515	11.1

Note: Shading indicates no private-practice general dentists providing services to Medicaid adults.

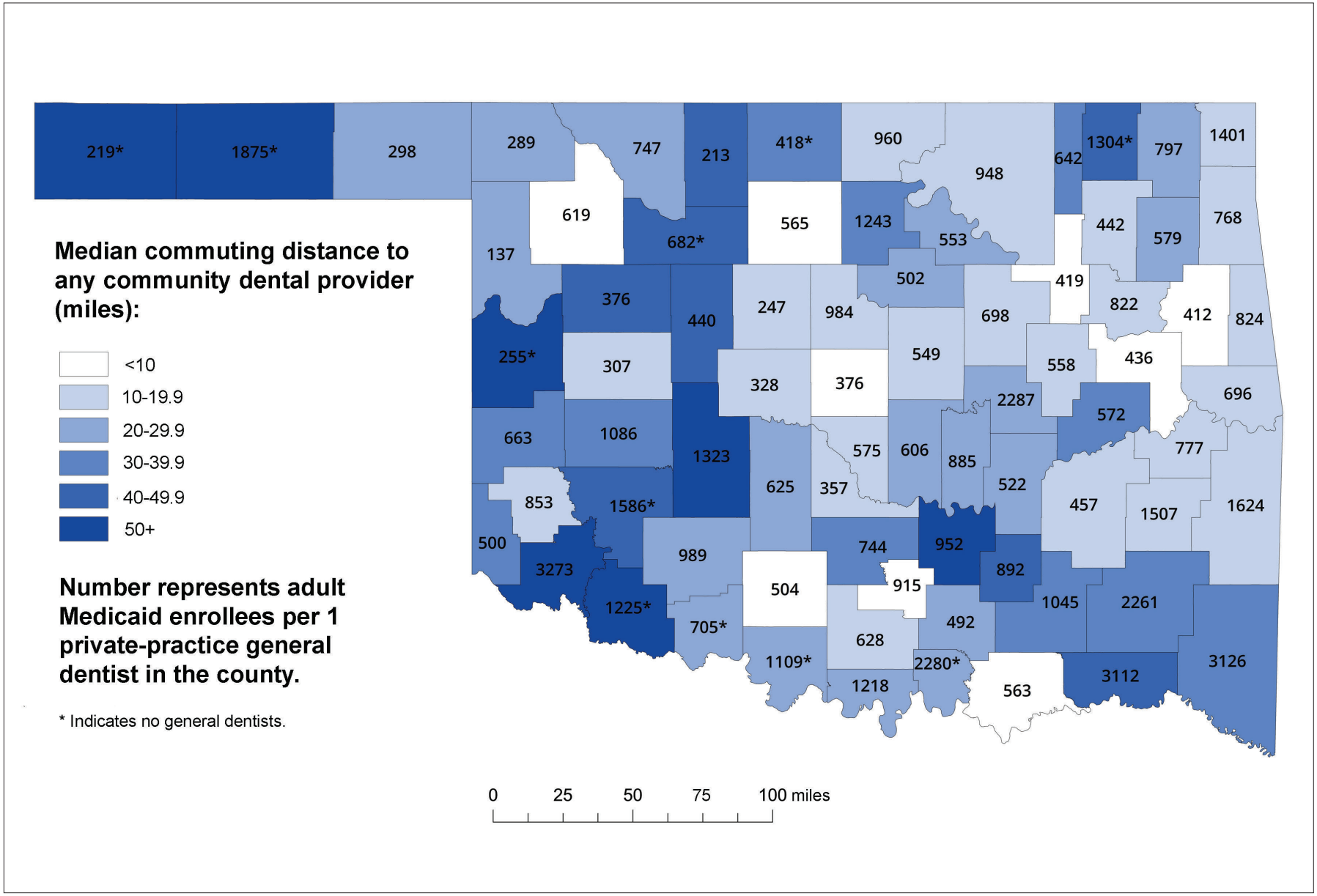
[a] "Total" includes 31 adult Medicaid patients in state institutions.

[b] "Total" includes 526 adult Medicaid enrollees in state institutions.

[c] Per *Oklahoma: 2010 Population and Housing Unit Counts,* 2010 Census of Population and Housing.[5]

Nineteen of 77 counties had more than 1,000 adult Medicaid enrollees per 1 private-practice general dentist or more than 1,000 enrollees and no general dentists servicing Medicaid adults. Most (14 counties) were located in southern Oklahoma (Map 2). In 12 of these counties, half of Medicaid adults traveled 30 miles or more to community dental providers to receive care for oral health–related problems. In the 8 counties with the shortest commuting distance to community dental providers (median of less than 10 miles), the ratio of adult Medicaid enrollees to private-practice general dentists varied from 376:1 to 915:1—in contrast to a county with 2,280 adults on Medicaid and no general dentists.

Figure 2. Ratio of the Number of Adult Medicaid Enrollees Per 1 Private-practice General Dentist and Median Commuting Distance to cCmmunity Dental Providers (Miles) by County, 2012-2013



LIMITATIONS

There are several inherent limitations in using administrative claims data for purposes other than those for which they were intended. While claims data are an excellent resource to measure utilization of services, reporting requirements are specific and designed to capture a patient encounter with a provider. Dental claims data do not always contain the necessary detail to understand the full scope of services or the severity of the oral health condition. Medicaid dental claims data for services provided in community settings, including private-practice dental offices, lack dental diagnosis codes and therefore do not permit an evaluation of condition severity or complexity.

In addition, reimbursement methodologies for certain clinics differ from those for private dental practices. FQHCs are paid according to a prospective payment system, and claims data for oral health services in clinics do not permit identification of type or specialty of the oral health providers servicing Medicaid patients in FQHCs. Claims data from ED providers include diagnosis codes but no procedure codes, while dental offices and clinics provide procedure codes but not diagnoses.

This study included some cost analyses by setting. However, due to anomalies in the reimbursement data for ED services, researchers were unable to describe the total cost of oral health services delivered in ED settings. Hospitals bill for facility services, while attending clinical providers bill separately for evaluation and management services provided to patients in EDs. It was, therefore, not possible to obtain an accurate understanding of ED costs for dental services using the available data.

It should be emphasized that these study findings are generalizable only to adults with Medicaid insurance in Oklahoma and may not necessarily apply to adults insured under Medicare, those who are privately insured, or those without insurance.

DISCUSSION

Medicaid Dental Insurance Coverage for Adults in Oklahoma

SoonerCare, which is administered by the OHCA, is Oklahoma's Medicaid program. SoonerCare covers income-eligible patients, including categorical groups who meet eligibility criteria. These groups include income-eligible adults older than 65 years of age, people with disabilities, pregnant women, people with certain health conditions (eg, tuberculosis), adults with children aged 18 years or less, and children in qualifying families.[6,7] The SoonerCare program also covers breast and cervical cancer diagnostics and treatment for women under age 65 (Oklahoma Cares), family planning services for people aged 19 and older (SoonerPlan), and other health services for low-income Medicaid population groups.

In January 2013, total adult enrollment in SoonerCare was as follows: 134,534 aged and disabled adults; 84,828 adults with children and pregnant women; 826 women qualifying for Oklahoma Cares; 49,307 individuals eligible for SoonerPlan benefits; and 21,188 other adults (eg, qualified Medicare beneficiaries, specified low-income Medicare beneficiaries, patients with tuberculosis).[8] Adults enrolled in SoonerCare in January 2013 totaled 290,683; about 70% were women and 37% were adult dual-eligible (Medicare and Medicaid) enrollees.

Since 2003, when an adult Medicaid benefit was authorized, the OHCA has directly administered the fee-for-service Medicaid dental program.[9] Oklahoma Medicaid provides only limited dental care benefits for adult enrollees 21 years of age and older, including emergency oral health exams, emergency extractions of diseased teeth, smoking and tobacco use cessation counseling, and medical and surgical services performed by a dentist or physician.[10,11] There are exceptions to this limited dental benefit.

Oklahoma Medicaid covers full dental services for adults with physical or developmental disabilities, including[11,12]:

- Advanced restorative services such as laboratory-processed crowns and root canal therapy
- Dentures
- Oral surgery services such as non-emergency extractions and other oral surgical procedures

The Oklahoma Medicaid program also provides an expanded but limited dental benefit for pregnant women, which includes[10-12]:

- Routine dental examinations

- Preventive services such as cleanings, fluoride application, and sealants
- Basic restorative services such as amalgam fillings, resin fillings, and stainless steel crowns
- Periodontal services such as periodontal surgery, scaling, and root planing

Medicaid Dental Insurance for Adults and Utilization Patterns of Dental Services in Oklahoma

Approximately 11% of the total population in Oklahoma were adults insured by Medicaid during all or part of the study period, which included 2012 and 2013. In addition to a comprehensive medical benefit, these enrollees qualified for a limited dental benefit which was restricted to services for dental emergencies related to acute pain or infection.[10,11] Covered treatments included emergency oral health exams and diagnostic studies, emergency tooth extractions, and/or medical or surgical treatment. Pregnant women on Medicaid were covered for a broader range of services, including routine dental examinations, preventive services, basic restorative services, and periodontal services, while adults with disabilities were covered for full dental services.[10-12] The limited dental benefit for Medicaid-eligible adults in Oklahoma appeared to impact utilization of oral health services, with only 16% of Medicaid-enrolled adults in the state receiving any dental service in the 2-year study period.

Enrollment data revealed that the adult population on Medicaid was more likely to be younger and female, likely attributable to parameters in the program that limit eligibility to adults with children and pregnant women.[8] Non-Hispanic Caucasians and those residing in rural areas were also more likely to be enrolled in the Medicaid program, reflecting the demographic and geographic characteristics of the state's population. A high percentage of the state's population is Non-Hispanic White (75%)[13] and rural; in 68 of the 77 counties, less than 65% of the population lives in urban census tracts.[3]

The study results revealed that, although rural residents were more likely to be enrolled in Medicaid than others in Oklahoma, they were less likely than enrollees residing in urban or mixed geographic areas to receive any dental service during the 2-year study period. Men, adults aged 65 years and older, Hispanics, and Non-Hispanic American Indians were also less likely than other Medicaid-insured population groups to access any dental services. The study findings do not capture all dental services received by Medicaid-enrolled American Indians as this population is served not only by providers who participate in Oklahoma Medicaid program but also through Indian Health Service facilities, urban Indian clinics and tribal health care programs. Adults with Medicaid who resided in either the Northwest region or southern Oklahoma were proportionately less likely than enrollees in other regions of the state to have accessed any dental service during the study period.

Young adults, Non-Hispanic American Indians, and those living in urban counties were more likely than other Medicaid-insured population groups to seek dental treatment services in EDs only. Dental services are best provided in settings where trained professionals are available to provide therapeutic and treatment services; EDs are not generally equipped to address the cause of dental pain and infection and usually are able to provide only palliative care. Seeking care in community settings, including private dental offices and public or private dental clinics, is a more productive means of addressing dental problems. Regional differences in the use of EDs for treatment of dental problems may reflect limited community dental resources available to patients with Medicaid. Adults in the Southwest region, for example, were proportionately more likely to seek dental care in EDs only than in dental offices or clinics. The most common diagnosis for Medicaid-insured adults who accessed an ED for treatment of a dental problem during the study period was "unspecified disorder of the teeth." The selection of this diagnosis code is symbolic of the lack of specific diagnostic and treatment options for oral health–related conditions available from ED providers.

Utilization of preventive oral health services in Oklahoma was mainly by women in their childbearing years. Preventive dental services are available through SoonerCare only to pregnant women and disabled adults. Medicaid-enrolled adults with disabilities represented 7% of all adult Medicaid enrollees in Oklahoma and 8% of those who received any dental service. This limited coverage for preventive services is likely responsible for the finding that the majority of Medicaid-insured adults in Oklahoma who received services in a dental office during the study period received a surgical treatment service, such as extraction or surgical removal of an erupted tooth. One of the oral health goals of Healthy People 2020 is to reduce the proportion of adults who have ever had a permanent tooth extracted due to tooth decay or gum disease.[14] Nevertheless, for many people insured by Medicaid programs that limit coverage to emergency treatment, tooth extraction is the only rational or affordable option for resolving dental pain and infection.

Nearly half of adult Medicaid enrollees who accessed dental services had only 1 dental visit during the 2-year study period. Adults over age 55, Non-Hispanic Blacks or African Americans, and Hispanics had the lowest average number of dental visits among all population groups. According to 2012 Behavioral Risk Factor Surveillance System (BRFSS) data, Oklahoma ranked 45th in the nation (50th representing the worst) for adults with a recent dental visit.[15] BRFSS data showed that 59% of all adults residing in Oklahoma had had a recent dental visit compared with 67% in the US as a whole. Males (58%); adults aged 35 to 44 (56%), 45 to 54 (58%) and 65 and over (56%); and Non-Hispanic Blacks (54%) and Hispanics (55%) had the lowest rates of dental service utilization.

A relatively large proportion of Medicaid-insured adults who accessed care (21%) received dental services from multiple general dentists. Establishing a consistent "dental home" is a desirable outcome for

patients, and visiting multiple general dental providers is incompatible with that goal. Access to routine dental examinations and treatment among Medicaid-insured adults in Oklahoma is compromised not only by limited dental care benefits but also by the number of dentists that provide dental services to adult Medicaid enrollees.

According to the Center for Medicaid and CHIP Services (CMCS), the Medicaid dental network in Oklahoma comprised 1,326 dental providers including general dentists (n=1,090), oral surgeons (n=72), orthodontists (n=67), pediatric dentists (n=65), periodontists (n=15), and other dental specialists, dental hygienists, and physicians, in fiscal year 2012.[9] Based on the current study, 1,077 dental providers in dental offices and clinics offered dental services to Medicaid-insured adults in 2012 and 2013, among them 817 general dentists, 68 oral surgeons, 41 pediatric dentists, 16 orthodontists, and 6 periodontists. Dental services were also provided to Medicaid-insured adults by dental providers in dental clinics and FQHCs and by physicians, physician assistants, and certified nurse practitioners in EDs. Although the participation of dentists in the Oklahoma Medicaid program is relatively high, about 60% of dentists billing Medicaid for patient services treated 50 or fewer adult patients during the 2-year study period. More than 1/3 of the dentists who billed Medicaid for services to adults treated only 1 to 9 patients during the 2 years. Moreover, the majority of providers treated Medicaid-enrolled adults in dental offices or clinics in urban counties, suggesting limitations on the access to services for Medicaid-insured adults residing in rural areas.

Oklahoma is, overall, a rural state. More than half of the dentists treating Medicaid-insured adults in the state practiced in 3 urban counties: Oklahoma, Tulsa, and Cleveland. In 11 rural counties, there were no dentists providing services to Medicaid-insured adults, while an additional 15 rural counties had only 1 dentist treating Medicaid-insured adults in 2012 and 2013.

The uneven geographic distribution of dentists in Oklahoma was apparent in the higher volumes of Medicaid-insured patients among dental providers in offices and clinics in rural areas and also by the lengthier commuting distance to these providers for patients residing in rural areas. Patients in the Southwest region traveled farther than those in any other region of the state to obtain services in a dental office or clinic, indicating major barriers to oral health care access in this region in particular.

References

REFERENCES

1. Institute of Medicine, National Research Council. *Improving Access to Oral Health Care for Vulnerable and Underserved Populations*. Washington, DC: The National Academies Press; 2011.

2. Wall TP. *Dental Medicaid—2012*. Chicago, IL: American Dental Association, Health Policy Resources Center; 2012. Dental Health Policy Analysis Series.

3. Landgraf C, Hackler J, eds. *State of the State's Rural Health: Workforce Issues: Physician & Hospitals*. Tulsa, OK: Oklahoma State University Center for Health Sciences, Center for Rural Health; 2008. http://www.healthsciences.okstate.edu/ruralhealth/docs/SOSRH%20-%202008%20Edition.pdf. Accessed October 20, 2015.

4. *Chronic Disease in Oklahoma Data Book*. Oklahoma City, OK: Oklahoma State Department of Health; 2013. http://www.ok.gov/health2/documents/CDS-Chronic%20data%20book%20AUG2013.pdf. Accessed October 20, 2015.

5. United States Census Bureau, 2010 Census of Population and Housing. *Oklahoma: 2010: Population and Housing Unit Counts*. CPH-2-38. Washington, DC: US Government Printing Office; 2012. https://www.census.gov/prod/cen2010/cph-2-38.pdf. Accessed October 20, 2015.

6. Richey K. *Medicaid 101: The SoonerCare Safety Net*. Tulsa, OK: Oklahoma Policy Institute; 2012. http://okpolicy.org/wp-content/uploads/2012/12/Medicaid-101-The-SoonerCare-Safety-Net.pdf?635234. Accessed October 20, 2015.

7. SoonerCare (Medicaid): eligibility. Oklahoma Department of Human Services website. http://www.okdhs.org/programsandservices/health/med/docs/elig.htm#eligibility. Updated December 19, 2014. Accessed October 20, 2015.

8. *SoonerCare Adult Fast Facts: January 2013*. Oklahoma Health Care Authority website. http://okhca.org/WorkArea/DownloadAsset.aspx?id=14617. Published February 12, 2013. Accessed October 20, 2015.

9. Dental Action Plan template for Medicaid and CHIP programs. Medicaid.gov website. http://www.medicaid.gov/medicaid-chip-program-information/by-topics/benefits/downloads/sohap-oklahoma.pdf. Published July 13, 2012. Accessed October 20, 2015.

10. *Dental Fast Facts: January–March 2012*. Oklahoma Health Care Authority website. http://digitalprairie.ok.gov/cdm/compoundobject/collection/stgovpub/id/61252/rec/25. Published April 19, 2012. Accessed October 20, 2015.

11. Medicaid benefits: dental services [2012]. Kaiser Family Foundation website. http://kff.org/medicaid/state-indicator/dental-services. Accessed October 20, 2015.

12. McGinn-Shapiro M. Medicaid coverage of adult dental services. *State Health Policy Monitor*. 2008;2(2):1-6. http://nashp.org/sites/default/files/Adult%20Dental%20Monitor.pdf. Accessed October 20, 2015.

13. State & county QuickFacts. United States Census Bureau website. http://quickfacts.census.gov/qfd/states/40000.html. Updated October 14, 2015. Accessed October 20, 2015.

14. Healthy People 2020: oral health. HealthyPeople.gov website. http://www.healthypeople.gov/2020/topics-objectives/topic/oral-health/objectives. Accessed October 20, 2015.

15. Oklahoma State Department of Health. *2014 State of the State's Health Report*. http://www.ok.gov/health/pub/boh/state. Accessed October 20, 2015.

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