

The Changing Distribution Of Medical Doctors In Oklahoma

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Traditionally, the resident of the open country has been healthier and has lived longer than the city dweller. Today, the situation is being reversed. Numerous indices show the urban population enjoys better health than the farm population.¹

Many writers have associated this trend for the urban resident to be healthier than the rural dweller to the growing concentration of medical facilities and practitioners in metropolitan centers. They feel that since so few medical doctors today practice or live outside large,

urban centers, many rural people no longer have ready access to physicians, with adverse effects on their health.

The purpose of the study reported in this bulletin was to determine the trends in the number and distribution of medical doctors in Oklahoma. Most of the data for the study come from the *American Medical Directory* published by the American Medical Association periodically since 1906,² and from various publications of the Bureau of the Census, United States Department of Commerce.

1. For example, among the youths examined for military service during World War II, the rejection rate was greater for farmers than any other broad occupational group. In 1900, life expectancy at birth was ten years greater for rural white males than for urban white males. Rural white females had an advantage of 7½ years over their sisters living in the cities. Although life expectancy has increased in the last 50 years for both the rural and urban populations, the increase has been much greater for the city residents. Today, the residents of rural areas have little, if any, advantage in life expectancy over the inhabitants of cities. See John H. Kolb and Edmund deS. Brunner, *A Study of Rural Society*, Fourth Ed. (Boston: Houghton Mifflin Company, 1952), pp. 407-408.

Although the death rates for the farm population may differ little from those for the residents of cities, there seems no doubt that the farm population is sick more often and has more physical defects. A nationwide study in 1949-1950 showed that 5.1 percent of all rural-farm males from the ages of 14 through 64 had a disabling illness or condition as compared

with only 4.5 percent of urban males of the same ages. See Theodore D. Woolsey, *Estimates of Disabling Illness Prevalence in the United States*, (Washington, D. C., Public Health Service, Public Health Monograph, November 4, 1952), pp. 2, Table 1.

Not only is the total farm population ill more than the urban population, but also, "Disability is more common among farm workers than among those in other industries. On an average day in 1949-1950, 4 percent of persons in agricultural employment were disabled by accident or illness; among other workers only two percent were incapacitated." See the President's Commission on the Health Needs of the Nation, *Building America's Health*, Volume 2, (Washington, D. C., U.S. Government Printing Office, 1952), pp. 81.

2. Grateful acknowledgement is made to Frank V. Cargill, Director, Department of Records and Circulation, American Medical Association, for permission to use data from the *American Medical Directory* in this study.

Trend in the Number of Physicians

There has been a constant and steady increase in the number of people per physician in Oklahoma since statehood. In fact, the total number of physicians in the state has been steadily decreasing for many years. The peak number of physicians in Oklahoma was reached soon after statehood, when the total population was much less than at present. In 1909 there were 2,703 medical doctors in the state and the population was only 1,585,320. Consequently, there were only 587 people for each physician in the state. In 1950, the number of physicians was only 2,164 and the population was 2,233,351, or more than 1,000 persons per physician (Table 2).

By way of comparison, there were 134,402 physicians in the United States in 1909 or 673 people per doctor. The number of physicians in the United States had increased to 203,933 by 1950 with 741 people for each doctor. The increase in the population-physician ratio has tended to be more drastic in Oklahoma than elsewhere.

Undue importance should not be attached to past decreases in the number of medical doctors in Oklahoma. Rather, cognizance should be taken of the caliber of the practitioners at the time of statehood in comparison with those of the present time.

At one time there were virtually no legal restrictions on medical training. Medical schools were privately owned as profit-making establishments. Competition for students was intense. There were usually no requirements for admission to these schools. At times

even the ability to read and write was not essential. Also, many entered medical practice after apprentice training in physicians' offices. Others came into the profession through "diploma mills" which sold diplomas but made no pretense of giving any medical training.³

In 1905, the American Medical Association began an energetic and subsequently very successful campaign to raise the standard of medical training. Medical schools were especially concentrated in five states (Illinois, Missouri, Maryland, Kentucky, and Tennessee), having about one-third of all the medical schools in the United States. Not more than six of the 54 medical schools in these states could be considered acceptable, even by the standards of that time.⁴

A sample tabulation from the 1909 *American Medical Directory* indicates that about three out of every five (57 percent) of the physicians in Oklahoma at that time received "training" in these five states which had so many substandard medical schools. These states were considered the "rotten spots" for medical education.⁵ No information is given in the 1909 Directory about the training of approximately 15 percent of the physicians of Oklahoma. It may be assumed that most of these had no formal training. Only 28 percent of the doctors in the state "graduated" from schools in states tending to have more adequate medical training.

3. Morris Fishbein, *A History of the American Medical Association 1847 to 1947* (Philadelphia: W. B. Saunders Co., 1947) pp. 888-889.

4. *Ibid.*, pp. 894.

5. *Ibid.*, pp. 894.

In the years immediately prior to Oklahoma statehood, when attention was first directed to the quality of medical education, many states passed laws making it impossible for the poorly trained to enter the practice of medicine. The area which is now the state of Oklahoma had no such rigid requirements. It appears that many of those who could not qualify to practice medicine elsewhere came to the "Territory".

The first legislature of the State of Oklahoma in 1908 ruled that all physicians practicing in the newly formed state must register with the State Board of Medical Examiners by July 1, 1909 (Act of 1908)⁶ This first registration of physicians included all those who had practiced in the territory before statehood, many of whom, as has been noted, had very little training and some of whom had never attended any college. The new Medical Practices Act permitted all practicing physicians to continue their profession. Consequently, the 2,700 physicians in the state in 1909 were not comparable with the highly trained medical doctors of today. The efforts

of the American Medical Association to raise the standards of medical schools resulted in closing the doors of many sub-standard medical schools and especially those that were but little better than "diploma mills," with a resulting decline in the number graduating from medical schools.

Through the years, many of the physicians who were originally licensed to practice in the state have died or have retired from medical practice, leaving largely doctors trained in acceptable medical schools. Thus we can attribute Oklahoma's increased population-physician ratio to the early surplus of doctors, the higher standards for licensure, and the small enrollments in the medical schools. During the recent upward surge in the number of medical school graduates, the state has been handicapped by a general population exodus from the state, with a resultant feeling among some young doctors that economic security was not to be found in Oklahoma. Most rural states like Oklahoma have increasingly encountered difficulty in securing young physicians.

Trends in the Distribution of Physicians

Four indices were used to test the general belief that there has been a tendency for medical doctors in Oklahoma to concentrate in the larger metropolitan centers. They are: (1) Number of towns with doctors; (2) number of M. D.'s by size of town; (3) distribution for selected towns; and (4) average age of doctor by size of town. In addition, the changing

distribution of physicians was analyzed by counties. Data were secured for the period 1909 through 1950.

Number of Towns with M.D.'s. In 1909 there were doctors living in 767 towns and villages in Oklahoma. Every population center, regardless of size, tended to have one or more physicians at that time. In fact, there were 574 doctors living in 387 hamlets having populations under 250. The num-

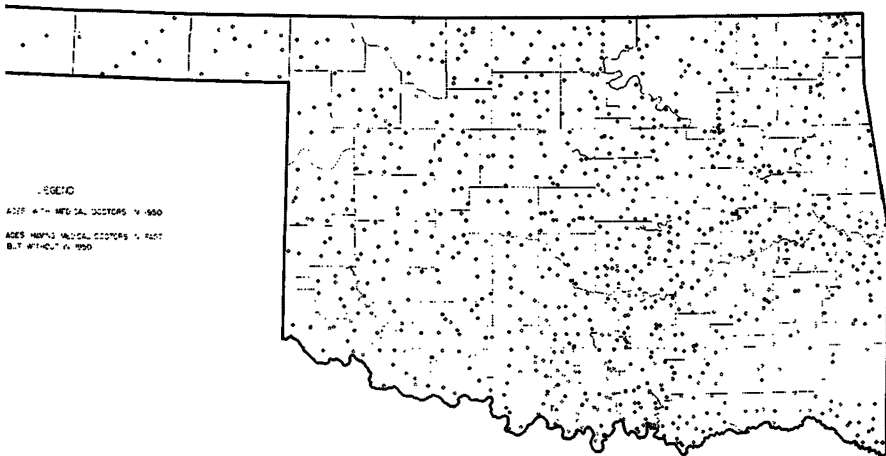
⁶ Benedict Elder, *General Statutes of Oklahoma, 1908* (Kansas City: Pipes-Reed Book Company, 1908). Section 5642, pp. 1150-1157.

ber of towns with M.D.'s dropped somewhat by 1921, to 623; and from that date the decline has been more rapid (see Table 3). By 1950, there were only 298 towns having doctors. There are 392 places no longer listed in the Census of Oklahoma that at one time had a physician, indicating that many of these small towns no longer exist. In addition, 235 of the towns listed in the 1950 census do not have medical doctors today. There are over 600 places in Oklahoma which at one time had a doctor, but do not at present. Figure 1 clearly demonstrates the extent to which M.D.'s have concentrated in a smaller number of centers.

Number of M.D.'s by Size of Town.—In 1909 a large percentage of the doctors in the state were located in places having popula-

tions under 500. There were 823 doctors in 548 towns having less than 500 people, and 918 doctors in the 46 towns with populations of 2,500 or more (Table 3). By 1950, there were only 80 M.D.'s in towns having under 500 population but 1801 in the 83 urban centers having 2,500 population or more. The percentage of doctors in the urban centers has increased from 34 percent of all physicians in the state in 1909 to 83 percent in 1950.

Number of M.D.'s in Towns Listed by Census in both 1910 and 1950.—Table 4 shows the distribution of physicians in the 382 towns in Oklahoma which were listed by the census in both 1910 and 1950. In 1910, every town with a population of above 500 had at least one physician, and an average for the group of about four. By 1950, there



During the past fifty years, Oklahoma doctors have concentrated in fewer and fewer towns. This map compares the number of towns with doctors in 1910 with the number of doctors in 1950. Note the large number of 1950-towns with no doctor.

were 23 towns with populations above 500 without a medical practitioner. Not only do fewer of the smaller towns have M.D.'s today, but those that do, have a smaller number than in the past. In 1910, only twelve of 176 towns with populations below 500 had no physician. By 1950, only 33 of 163 towns of this size had a doctor. The 382 towns in 1910 had 79 percent of the physicians in the state but 95 percent in 1950. Since practically all of the larger towns in Oklahoma are incorporated, these figures indicate that a sizable proportion of all doctors resided in unincorporated hamlets in 1910, whereas by 1950 nearly all physicians in the state were in the larger incorporated centers, including some which have incorporated since 1910.

Average Age of Physicians by Size of Towns—Table 1 shows a definite relationship between the size of town and age of doctors in 1950. The average age of physicians in towns having under 250 population is 70.3 and the average age steadily declines to 53.9 years for cities above 2,500. In the latter group, the average age of doctors in Tulsa is 48.3 years and 47.7 years in Oklahoma City. These data indicate that recent graduates of medical schools are locating almost wholly in places of above 1,000 population and especially in the larger cities in the state. Few young men currently practice in the smaller towns. For example, in 1950, 19 of the 20 doctors in towns having populations under 250 were above the age of 65. (The one young man in this group had moved elsewhere by 1952.) The trends in the number of doctors in the various age groups by size of

towns indicate that in another generation only an occasional physician will be located in towns having populations under 1,000.

Distribution of Physicians by Counties.—Table 5 shows the number of physicians by county through the years, and the population per physician for 1910, 1920, 1930, 1940 and 1950. In computing the number of people for each doctor, the reports of the United States Census have been related to the data given in the American Medical Directory nearest the census period. The principal findings to be had from this table are:

1. There has been a general decline in the number of doctors throughout the state. Of the 77 counties in Oklahoma, only seven had more doctors in 1950 than in 1910. These are: Cleveland, Garfield, Oklahoma, Payne, Pontotoc, Tulsa, and Washington. Among these seven counties only Oklahoma and Tulsa had more doctors in 1950 than at any earlier period.

2. The counties with increases in the number of doctors, tend to be those with large cities. Each of the seven counties having more doctors in 1950 than in 1909 contains one of the larger cities of the state.

3. The more rural the county, the greater the loss of physicians. There were 15 counties in 1950 having no town with as many as 2,500 residents. These counties had 278 doctors in 1909, but only 78 in 1950.

4. In 1910, there was not much variation among counties in the number of persons per doctor, most

counties having from 500 to 1,000 people for each practitioner. The range was much greater in 1950 being from a low of 582 in Oklahoma County (the most urban county in the state) to 4,589 in Cimarron (one of the more rural counties).

5. Because of the decline in the number of physicians in the state and the greater population now than in 1910, the physician-population ratio has tended to rise throughout Oklahoma.

6. If present trends continue, doctors retiring or taken by death, especially in the more rural counties, will not be replaced, further increasing the number of people per physician.

7. The greater average age of the medical men residing in the more rural counties means that these counties can be expected to lose many of their practitioners within a few years because of deaths or retirement.

Factors Affecting Trends in Distribution

The shift of medical doctors from smaller towns to the cities is related to numerous economic and cultural changes in Oklahoma. Some of these changes are:

1. Changes in medical practice.
2. A general population shift, including medical practitioners, from rural to urban areas;
3. Increased nonfarm population per doctor as the size of town increases;
4. Loss by small towns and villages of many functions they used to have, including banking, certain types of merchandising, and medical services; and
5. Preference of doctors to practice in towns of about the same size as those in which they were reared, with most medical students coming from the larger cities.

Changes in Medical Practice.—Modern medicine is vastly different from that of the past. A hundred years ago the physician was practically the only dispenser of health services. He went to the home in his buggy carrying a small

black satchel containing almost his total armamentarium.⁷ He had done his duty when he counted the pulse, took the temperature, listened to the heart and lungs, and examined the urine of his patient. Although he took to his patients the best that medical science had to offer, it was quite meager compared with the offerings of medicine today. One doctor was about as competent as another.⁸ Consequently, the positive benefits for society from medical care were not great. In fact, it has been estimated that not until around 1910 did an average patient with an average disease consulting a doctor chosen at random stand better than a 50-50 chance of benefiting from the encounter.⁹

Medical practice has been revolutionized within the last two generations. The modern physician

7. President's Commission on the Health Needs of the Nation, *Building America's Health*, Volume I (Washington: U.S. Government Printing Office, 1953), pp. 115.

8. David Diesman, *Medicine in Modern Society*, (Princeton: Princeton University Press, 1939), pp. 149.

9. President's Commission on the Health Needs of the Nation, *op. cit.*, Vol. 2, pp. 23.

10. *Ibid.*, pp. 116.

is much better trained than his predecessor. He is assisted in his practice by nurses, laboratory technicians, specialists, and others. He is dependent upon the laboratory for diagnosis and treatment.

"The laboratory studies required and often expected by our patients are as a rule beyond the doctor's equipment and training. He must call in the X-ray expert, the technician to make studies of the blood, the electrocardiographer, the basal metabolism technician, the bacteriologist, the allergist, the urologist—the number of specialistic studies is constantly on the increase."¹¹

All of these facilities and workers cannot be taken to the home. Consequently, the patient must come to the doctor. If seriously ill, and he is to receive all the advantages of modern medicine, he must go to the hospitals. Hospitals and specialists cannot be located in every hamlet. They tend to be in larger cities. To utilize these services, the physician locates near where they are to be found.

General Population Shift.—An important but often ignored phenomenon associated with the disappearance of medical personnel from the smaller towns of the state is a general population shift from rural areas to the cities. The doctor moved in the same direction as the rest of the population. The rural farm population of Oklahoma in 1950 was only half of what it had been in 1930 declining to 553,255 from 1,021,174. By contrast, the urban population, people

living in towns of 2,500 or more, increased from 739,025 in 1930 to 1,107,252 in 1950.

Most of the towns and villages having a medical doctor in the past, but not today, have either disappeared or suffered population losses. When the number of inhabitants in a given locality is small, the doctor often moves elsewhere. When a practitioner dies or moves away from a small community, it is almost impossible to replace him with a well-trained doctor.

Non-farm Population per Doctor.—Although many of a rural doctor's patients do come from the farming area near the town where he is located, the larger portion tend to come from the town itself. A tabulation showing the number of people per doctor in towns of various size would thus indicate the potentials for making a living by the practice of medicine.

Table 4 shows that in 1910 the number of people for each doctor increased with the size of town for the 382 towns in Oklahoma listed by the U.S. Census in both 1910 and 1950. Only in towns with populations above 2,500 was the number of people even approaching a figure sufficient to support a full-time practitioner in 1910. By 1950 the number of people per doctor had increased in all sizes of towns and much of the past inequality had disappeared. However, in general, the smaller the town, the fewer persons for each physician. Doctors can, therefore, be expected to leave the smaller towns for the cities.

11. Riesman. *op. cit.*, pp. 149.

12. David Riesman. *op. cit.*, pp. 199.

Reduced Functions of Small Towns.—At the time of Statehood in Oklahoma, each town and village could be considered the center of a self-sufficient community. Horse transportation restricted travel to a relatively small radius about each population center. But in each town practically all the goods and services desired were available. Almost every village had a bank, lumber yard, hardware store, churches, general stores, and one or more medical doctors.

With the coming of the automobile, it was predicted that all the small towns and villages would disappear and the rural population would obtain all the necessities of life in large towns with greatly expanded trade areas. Although many smaller places have disappeared, the major change has been that small towns have lost many of their functions of the past and can no longer satisfy all of a family's needs. Rural residents today go to several towns of varying size, fulfilling different functions in each. In general as the size of a town increases the greater variety and more specialized the functions and services it offers. A hamlet with a population of less than 250 will perhaps have only a church or a school and a combination filling station and grocery store. It is not until the size of the village reaches 1,000 that a medical doctor is apt to be found.¹³

When the rural resident needs medical attention for minor ailments he goes to the nearest center

where a doctor is located. For obstetrical care, his wife will probably go to a nearby town having a hospital. If specialized medical attention is needed, he will go to a large metropolitan center.

Along with the banker, the proprietor of a lumber yard, the minister, the attorney, and at times the school teacher, the physician left the formerly self-sufficient village and moved to a larger town, and the rural resident goes to the men in these centers via automobile.

Residence Preference of Physicians.—Most physicians prefer to practice in towns about the same size in which they were reared.¹⁴ The vast majority of medical students comes from larger cities and only a small percentage comes from the more isolated rural areas. This results in a further concentration of doctors in urban centers. Medical schools can do little to change the ratio of rural to urban backgrounds among their students because few products of rural schools have the training needed for admission to medical school nor do rural youth usually have sufficient financial support to obtain a medical education.¹⁵

Even though the young practitioner may have a rural background, the chances are great that his wife is from the city and her background may be a more important determinant of where a doctor locates than his own. Many people, especially products of the city, feel that only in urban areas

13. For a description of goods and services provided by different size of towns, see: John H. Kolb and Edmund deS. Brunner, *A Study of Rural Society* (Boston: Houghton Mifflin Company, 1932), pp. 209-236 and Carl C. Taylor et. al., *Rural Life in the United States* (New York: Alfred A. Knopf, 1950) pp. 78-91.

14. President's Commission on the Health Needs of the Nation, *Building America's Health*, (Washington, D. C., U.S. Government Printing Office, 1953), Vol. 2, pp. 118.

15. *Ibid.*, pp. 119.

can they find the social contacts, educational and cultural advantages they desire.

Still other factors associated with the increased concentration of med-

ical doctors in cities could be mentioned, but these reasons which have been discussed are among the more significant.

Probable Future Trends in Distribution

Effect of Normal Mortality of Physicians.—Since the average age of physicians increases as the size of town decreases, it is to be expected that deaths will take greater proportions of the doctors in the smaller towns over the next few years leaving an even greater concentration than exists today in the larger cities. To indicate the probable number of deaths among the medical doctors in Oklahoma, tabulations were made of the age of the doctors in each county in Oklahoma and for towns of different sizes. Standard mortality rates for white males in the United States have been applied to these data.¹⁶ Mortality rates for medical doctors are not significantly different than for the average white male in the United States.¹⁷ Resulting projections of expected deaths among physicians for three periods (1950-1960, 1950-1965, and 1950-1970) are presented in Tables 6 and 7. These figures are based on average mortality rates and will, of course, differ somewhat from the actual number of deaths. The data do accurately indicate that as the size of the town decreases the number of expected deaths increases rapidly because doctors in smaller towns

are older. By 1970, 85 percent of the practitioners in towns with populations under 250 will have died as contrasted with only 43 percent in cities with more than 2,500 residents.

Table 7 gives projected deaths among physicians by county. In the twenty year period between 1950 and 1970, expected mortality rates vary from about 25 percent to 100 percent. Again because of the age differentials, more deaths are to be expected in the rural counties are already deficient in medical personnel. Consequently, the normal death rate among physicians will bring about a further concentration of practitioners in cities.

Effect of Diminishing Functions of Small Towns.—There is nothing to indicate that the physician will ever return to the small population centers. When the present generation retires or dies, it will not be replaced. It may be predicted that no town in Oklahoma with a population of 500 or under will have a medical doctor in 1975. In fact, there will probably be very few towns having less than 1,000 residents with a doctor. People today are used to going to larger towns for medical care. There seems to be no reason for this habit to change.

16. The source of these mortality rates is: National Office of Vital Statistics, *Abridged Life Tables, United States, 1950*, National Summaries, Vol. 37, Number 12.

17. L. I. Dublin and M. Spiegelman, "The Longevity and Mortality of American Physicians, 1938-1942," *Journal of the American Medical Association*, 134 (August 9, 1947), pp. 1211.

Effect of Increased Number of Medical Graduates.—The potential number of graduates each year at the University of Oklahoma Medical School is now 100. The spring of 1955, the first class under this expanded enrollment graduated. On the basis of past experience, at least 50 of them can be expected to practice medicine in Oklahoma.¹⁸

Table 7 shows that 1018 of the 2164 physicians in Oklahoma in 1950 will be decreased by 1970. Thus, on the average, somewhat over 50 new medical doctors will be needed each year if present numbers are maintained. There should be more than enough graduates of the State Medical School remaining in the state to replace those dying. In addition, graduates of other medical schools may be expected to come to Oklahoma. It may be estimated that the total

number of physicians in Oklahoma will increase by approximately this number coming from other states.

It seems probable that if the total number of medical doctors in Oklahoma increases, many of them will go to towns with populations between 1,000 and 2,500, replacing those taken by death and retirements, and perhaps even increasing the number of practitioners in towns of this size.

The trend for physicians to concentrate in larger cities in Oklahoma may be reaching its climax and a reversal could start within a few years. This statement is supported by the efforts of state medical societies, including that of Oklahoma, to inform young medical doctors of the opportunities for the practice of medicine in smaller communities.¹⁹

18. A recent study showed that 56 percent of all University of Oklahoma Medical School graduates remained in Oklahoma. This figure compares with a national average of 50 percent of physicians practicing in the state where medical training was secured. See: John E. Deitrich and Robert C. Berson, *Medical Schools in the United States* (New York: McGraw-Hill Book Company, Inc., 1953), pp. 224.

19. Elmer Hess, M.D. in the Introduction to *Physicians Placement Service Programs*, Council on Medical Service, American Medical Association, February, 1953, pp. 3.

Table 1. Average age of Physicians in Oklahoma by size of Town, 1950

Size of Town	Number of Towns	Average age of Physicians	Number of Physicians
Under 250	20	70.3	20
250 - 499	46	69.2	60
500 - 749	50	68.9	66
750 - 999	19	61.7	34
1000 - 1499	38	59.8	77
1500 - 1999	23	60.3	67
2000 - 2499	19	54.9	49
Above 2500	83	53.9	1801
Tulsa	--	48.3	307
Oklahoma City	--	47.7	543
State Total	298		

Table 2. Number of Physicians (active and inactive), and Population Per Physician; Oklahoma and United States for Selected Years, 1909-1950.

YEAR	OKLAHOMA			UNITED STATES		
	Number of Physicians	Population (000)	Population per Physician	Number of Physicians	Population (000)	Population per Physician
1909	2,703	1,585	587	134,402	90,492	673
1912	2,620	1,671	638	137,199	95,331	695
1914	2,612	1,824	698	142,332	99,118	696
1916	2,634	1,907	724	145,241	101,966	702
1918	2,672	1,969	737	147,812	104,550	707
1921	2,622	2,108	804	145,404	108,541	746
1923	2,600	2,159	830	145,966	111,950	767
1925	2,524	2,216	878	147,010	115,832	788
1927	2,458	2,306	938	149,521	119,038	796
1929	2,435	2,372	974	152,503	121,770	798
1931	2,484	2,404	968	156,406	124,040	793
1934	2,409	2,394	994	161,359	126,374	783
1936	2,380	2,367	994	165,163	128,053	775
1938	2,364	2,325	983	169,628	129,825	765
1940	2,352	2,336	993	175,163	132,114	754
1942	2,284	2,213	969	180,496	134,831	747
1950	2,164	2,230	1030	203,933	151,689	744

Sources: American Medical Association, *American Medical Directory*, 1950 (Chicago: American Medical Association, 1950), p. 10, population estimates from publications of the United States Census Bureau, and the President's Commission on the Health Needs of the Nation, *Building America's Health*, Vol. 3 (Washington: U. S. Gov't. Print. Office) p. 135.

Table 3. Number of Towns with Physicians, and Number of Physicians by size of town, 1909 to 1950.

Size of Town	1950		1940		1931		1921		1909	
	Towns	Physicians	Towns	Physicians	Towns	Physicians	Towns	Physicians	Towns	Physicians
2500 and over	83	1801	75	1724	69	1642	62	1306	46	918
2000 - 2499	19	44	22	98	29	139	24	155	11	96
1500 - 1999	23	66	23	81	27	99	30	160	21	164
1000 - 1499	38	75	46	128	45	141	43	169	41	231
750 - 999	19	33	33	56	36	80	37	122	35	147
500 - 749	50	67	63	99	60	105	59	148	64	224
250 - 499	46	58	96	114	119	160	153	266	162	349
under 250	20	20	45	52	99	118	224	296	387	574
TOTAL	298	2164	403	2352	484	2484	632	2622	767	2703

Table 4. Changing Number of Physicians and Population: Physician Ratios by Size of Town for 382 Towns in Oklahoma Listed by U. S. Census for 1910 and 1950.

Size of Town	1950				1910			
	Number of Towns Without Doctors	Towns with Doctors			Number of Towns Without Doctors	Towns with Doctors		
		Number of Towns	Number of Doctors	Population Per Doctor		Number of Towns	Number of Doctors	Population Per Doctor
2500 and over	0	77	1772	603	0	46	918	348
2000 - 2499	0	16	41	868	0	12	102	255
1500 - 1999	1	19	58	565	0	20	166	208
1000 - 1499	5	29	66	534	0	39	222	217
750 - 999	1	17	30	501	0	34	144	201
500 - 749	16	38	49	492	0	55	212	158
250 - 499	63	26	40	248	4	123	283	157
Under 250	67	7	7	154	8	41	78	94
Total	153	229	2063	592	12	370	2125	256
		382				382		

Table 5. Number of Physicians in Oklahoma and Number of People per Physician for 1910, 1920, 1930, 1940, and 1950 by County

State	1950		1940		1930		1920		1910		
	Number of Physicians 2164	Average age of Physicians	Number of People per Physician 1030	Number of Physicians 2352	Number of People per Physician 993	Number of Physicians 2484	Number of People per Physician 968	Number of Physicians 2622	Number of People per Physician 804	Number of Physicians 2103	Number of People per Physician 587
OKLAHOMA											
Adair	5	62.2	2983.6	9	1750.6	8	1844.5	9	1522.6	10	1053.5
Alfalfa	12	45.8	891.6	14	1009.2	14	1087.7	21	773.9	26	697.6
Atoka	7	53.7	2038.4	4	4675.5	5	2906.6	15	1390.8	15	920.5
Beaver	4	64.3	1852.8	7	1235.4	9	1272.4	10	1404.8	13	1048.5
Beckham	20	48.9	1081.4	22	1007.7	28	1035.4	23	825.6	29	679.0
Blaine	13	51.8	1157.6	18	1030.2	18	1136.2	18	881.9	27	665.2
Bryan	23	62.2	1260.8	28	1362.1	35	922.2	61	667.2	64	466.5
Claddo	25	58.7	1396.5	34	1222.6	36	1410.5	45	760.2	49	728.2
Canadian	22	52.6	1165.6	27	1012.2	23	1222.4	28	796.0	31	758.1
Carter	43	57.2	847.8	44	983.9	48	862.9	56	718.7	62	409.0
Cherokee	8	59.2	2373.6	12	1752.5	12	1455.8	12	1656.0	19	883.0
Choctaw	9	56.6	2267.2	10	2835.8	12	2011.8	32	1004.5	37	590.8
Cimarron	1	59.0	4589.0	3	1218.0	4	1352.0	1	3436.0	2	2276.5
Cleveland	38	50.4	1090.6	42	660.2	37	674.3	28	692.5	28	672.9
Coal	3	74.6	2685.3	4	3202.8	7	1645.9	18	1022.6	29	545.4
Comanche	31	53.5	1779.5	66	590.7	53	647.5	56	475.5	79	525.2
Cotton	6	55.3	1696.6	1	12884.0	2	7721.0	6	2779.8	79	*
Craig	16	57.2	1141.4	15	1405.5	18	1002.9	23	833.0	26	669.4
Creek	26	58.4	1659.3	39	1423.2	50	1282.3	71	880.0	51	514.2
Custer	25	52.9	843.9	31	744.1	23	1196.4	21	892.2	30	774.4
Delaware	7	69.7	2104.8	6	3098.7	6	2561.7	4	3467.0	7	1638.4
Dewey	7	62.1	1255.5	6	1996.8	10	1325.0	13	956.5	22	642.4
Ellis	6	54.5	1221.0	7	1209.4	9	1171.2	11	1061.2	17	904.4

* Cotton County was organized from Comanche County in 1912.
 Source of Data: *American Medical Directory*, editions for 1909, 1921, 1931, 1940, and 1950. Chicago American Medical Association and reports of the United States Census Bureau. Population data were compared with the *American Medical Directory* published nearest the taking of the census for each decade.

Table 5. Continued

State	1950			1940		1930		1920		1910	
	Number of Physicians 2164	Average age of Physicians	Number of People per Physician 1050	Number of Physicians 2352	Number of People per Physicians 993	Number of Physicians 2484	Number of People per Physicians 968	Number of Physicians 2622	Number of People per Physicians 804	Number of Physicians 2103	Number of People per Physicians 587
Garfield	53	55.5	996.6	59	770.9	63	723.6	59	635.6	50	661.0
Garvin	20	54.0	1475.0	23	1354.3	30	1046.7	36	901.3	42	632.0
Grady	35	56.1	996.3	41	1002.8	43	1107.9	41	827.9	60	505.2
Grant	9	67.1	1162.3	12	1094.0	14	1010.7	22	730.5	23	815.7
Greer	12	53.2	979.1	12	1212.5	18	1126.8	21	754.1	29	567.2
Harmon	6	61.0	1346.5	10	1001.9	9	1537.1	10	1126.1	6	1888.0
Harper	3	65.3	1992.3	7	922.0	6	1293.5	8	952.9	8	1023.6
Haskell	5	60.0	2662.6	6	2887.3	10	1621.6	17	1141.0	27	699.1
Hughes	17	54.4	1215.5	25	1167.6	24	1263.9	32	813.9	47	511.5
Jackson	20	56.1	1004.1	16	1419.3	26	1111.9	23	962.7	29	818.5
Jefferson	8	53.6	1390.3	10	1510.7	15	1159.5	23	768.0	30	581.0
Johnston	4	70.0	2652.0	9	1773.3	10	1308.2	22	914.8	51	328.1
Kay	46	52.1	1062.9	52	905.5	53	946.9	45	775.7	52	509.4
Kingfisher	14	56.2	918.6	15	1041.1	17	938.8	24	652.9	31	607.3
Kiowa	15	53.3	1261.7	19	1200.9	26	1139.6	29	796.3	38	724.4
Latimer	7	62.3	1384.3	6	2063.3	5	2236.8	11	1260.5	14	808.6
Le Flore	21	65.2	1679.8	35	1310.4	33	1299.9	47	909.9	45	647.3
Lincoln	15	58.3	1473.5	19	1554.2	26	1297.6	37	902.9	56	621.1
Logan	22	62.0	1007.7	27	935.0	36	771.1	38	725.0	55	577.1
Love	4	70.3	1930.3	5	2286.6	8	1204.8	13	956.4	22	465.3
McClain	7	49.6	2097.3	10	1920.5	10	2157.5	13	1486.6	22	711.8
McCurtain	18	65.0	1754.9	23	1796.4	31	1121.3	44	861.5	20	1034.1
McIntosh	10	58.7	1782.9	13	1853.6	16	1557.8	25	1056.2	29	722.8
Major	4	64.7	2569.7	7	1706.7	9	1356.2	16	776.6	13	1172.9
Marshall	5	56.0	1635.4	8	1548.0	8	1378.3	23	630.0	30	387.3
Mayes	5	63.2	3948.6	15	1444.5	10	1788.3	18	934.9	18	755.3
Murray	13	59.1	828.8	16	865.1	16	775.6	20	655.8	37	344.4
Muskogee	67	58.3	978.7	81	813.8	92	722.0	102	605.0	99	532.8

Table 5. Continued

State	1950		1940		1930		1920		1910		
	Number of Physicians 2164	Average age of Physicians	Number of People per Physician 1080	Number of Physicians 2352	Number of Physicians 993	Number of Physicians 2484	Number of Physicians 968	Number of Physicians 2622	Number of Physicians 804	Number of Physicians 2103	Number of People per Physician 587
Noble	10	56.9	1215.6	12	1235.5	10	1513.9	13	1043.1	19	786.6
Nowata	7	56.8	1819.1	10	1577.4	10	1361.1	22	722.7	15	948.2
Okfuskee	13	65.1	1303.7	20	1313.9	22	1318.9	29	863.8	32	624.8
Oklahoma	559	47.7	582.0	468	521.7	424	523.0	250	465.2	203	419.9
Okmulgee	38	59.4	1172.7	42	1192.9	63	897.7	90	611.9	35	603.3
Osage	20	56.7	1653.6	31	1338.8	37	1279.3	33	1107.2	21	957.2
Ottawa	30	57.6	1073.9	39	919.2	49	786.6	53	775.6	32	491.0
Pawnee	11	63.8	1237.8	13	1338.1	15	1325.5	26	735.6	24	722.2
Payne	39	49.5	1190.5	35	1030.2	34	1085.4	39	773.8	33	719.2
Pittsburg	35	54.7	1172.3	44	1113.3	51	995.6	74	710.4	67	711.2
Pontotoc	41	52.0	753.0	42	947.4	34	954.9	37	836.5	35	695.2
Pottawatomie	34	56.0	1279.9	43	1264.6	58	1147.8	52	885.2	97	449.4
Pushmataha	6	74.1	2000.2	10	1946.6	10	1474.4	10	1751.4	9	1124.2
Roger Mills	4	40.0	1848.8	4	2684.0	6	2360.7	12	886.5	12	1071.8
Rogers	11	59.0	1775.6	18	1171.0	15	1263.7	27	652.0	31	572.1
Seminole	22	55.9	1848.7	49	1249.0	57	1396.9	26	915.7	29	688.4
Squoyah	8	68.4	2471.6	10	2313.8	14	1393.2	28	956.6	38	658.0
Stephens	24	51.0	1419.6	28	1110.4	32	1033.4	33	748.2	50	445.0
Texas	13	48.5	1095.0	11	899.6	10	1410.0	15	931.7	16	890.6
Tillman	10	60.7	1759.8	16	1297.1	22	1108.6	28	801.3	30	621.7
Tulsa	325	50.2	774.4	285	678.5	280	669.9	198	550.6	81	432.0
Wagoner	6	64.1	2790.2	11	1967.5	12	1869.0	22	971.4	27	818.0
Washington	35	55.8	939.4	31	985.8	36	771.6	40	675.1	32	546.4
Washita	9	62.6	1961.9	15	1485.3	17	1731.5	25	889.5	32	782.3
Woods	10	51.5	1452.6	14	1065.3	15	1133.7	16	996.2	19	924.6
Woodward	22	55.9	653.8	21	774.8	20	7922.0	23	637.5	27	614.5

Table 6. Projected Number of Physicians in Oklahoma From 1950 to 1960, 1965, and 1970 By Size of Town

Size of Town	Number of Physicians 1950	Projected Number of Physicians					
		1960		1965		1970	
		Surviving from 1950	Deceased since 1950	Surviving from 1950	Deceased since 1950	Surviving from 1950	Deceased since 1950
2500 and over	1801	1410	391	1210	591	1030	771
2000 - 2499	44	30	14	24	20	20	24
1500 - 1999	66	42	24	33	33	26	40
1000 - 1499	75	48	27	37	38	29	46
750 - 999	33	22	11	16	17	12	21
500 - 749	67	34	33	23	44	15	52
250 - 499	58	29	29	19	39	11	47
Under 250	20	10	10	6	14	3	17
TOTAL	2164	1625	539	1368	796	1146	1018

Table 7.—Number of Physicians in Oklahoma by Counties for 1950 and Projections based on 1950 Data to 1960, 1965, & 1970

	Number of Physicians 1950	Projected Number of Physicians ²					
		1960		1965		1970	
		Surviving from 1950	Deceased since 1950	Surviving from 1950	Deceased since 1950	Surviving from 1950	Deceased since 1950
State	2164	1625	539	1368	796	1146	1018
Adair	5	3	2	2	3	2	3
Alfalfa	12	10	2	9	3	8	4
Atoka	7	5	2	4	3	4	3
Beaver	4	2	2	2	2	1	3
Beckham	20	16	4	14	6	12	8
Blaine	13	10	3	8	5	7	6
Bryan	23	15	8	11	12	8	15
Caddo	25	17	8	13	12	10	15
Canadian	22	16	6	14	8	12	10
Carter	43	29	14	24	19	20	23
Cherokee	7	4	3	4	3	3	4
Choctaw	9	7	2	5	4	4	5
Cimarron	1	1	0	1	0	0	1
Cleveland	38	31	7	27	11	23	15
Coal	3	1	2	1	2	0	3
Comanche	29	22	7	19	10	16	13
Cotton	6	4	2	4	2	3	3
Craig	16	12	4	9	7	7	9
Creek	26	17	9	14	12	11	15
Custer	25	20	5	17	8	14	11
Delaware	8	4	4	3	5	2	6
Dewey	7	4	3	3	4	2	5
Ellis	6	4	2	4	2	3	3
Garfield	55	40	15	33	22	27	28
Garvin	20	15	5	12	8	10	10
Grady	35	24	11	20	15	16	19
Grant	9	5	4	3	6	2	7
Greer	12	9	3	7	5	6	6
Harmon	6	4	2	3	3	2	4
Harper	3	2	1	1	2	1	2
Haskell	5	3	2	3	2	2	3
Hughes	17	13	4	11	6	9	8
Jackson	20	14	6	12	8	9	11
Jefferson	8	6	2	5	3	4	4
Johnston	4	2	2	1	3	1	3
Kay	46	36	10	31	15	26	20
Kingfisher	14	10	4	8	6	7	7
Kiowa	15	11	4	9	6	8	7
Latimer	7	4	3	3	4	2	5
Le Flore	21	12	9	8	13	6	15
Lincoln	15	10	5	8	7	6	9
Logan	22	14	8	10	12	8	14
Love	4	2	2	1	3	1	3

1. Source of Information: American Medical Directory, 1950 (Chicago American Medical Association, 1950)
2. These projections were obtained by subtracting expected deaths from the number of physicians in each county in 1950.

Table 7.—Continued.

	Number of Physicians ¹ 1950	Projected Number of Physicians ²					
		1960		1965		1970	
		Surviving from 1950	Deceased since 1950	Surviving from 1950	Deceased since 1950	Surviving from 1950	Deceased since 1950
McCain	7	6	1	5	2	4	3
McCurtain	19	11	8	7	12	5	14
McIntosh	10	6	4	5	5	4	6
Major	4	2	2	2	2	1	3
Marshall	5	4	1	3	2	2	3
Mayes	5	3	2	2	3	2	3
Murray	13	9	4	7	6	6	7
Muskogee	66	45	21	36	30	29	37
Noble	10	7	3	6	4	5	5
Nowata	7	5	2	4	3	3	4
Okfuskee	13	8	5	5	8	4	9
Oklahoma	557	463	94	412	145	359	198
Okmulgee	38	24	14	19	19	16	22
Osage	20	14	6	11	9	9	11
Ottawa	28	19	9	15	13	12	16
Pawnee	11	6	5	5	6	3	8
Paync	39	31	8	27	12	24	15
Pittsburg	35	26	9	21	14	17	18
Pontotoc	41	31	10	26	15	22	19
Pottawatomie	34	25	9	20	14	17	17
Pushmataha	6	3	3	1	5	1	5
Rogcr Mills	4	4	0	3	1	3	1
Rogers	11	7	4	6	5	4	7
Seminole	22	16	6	13	9	10	12
Sequoyah	8	4	4	3	5	2	6
Stephens	24	19	5	16	8	13	11
Texas	12	9	3	8	4	7	5
Tillman	10	7	3	5	5	4	6
Tulsa	330	265	65	230	100	195	135
Wagoner	6	3	3	2	4	2	4
Washington	35	25	10	20	15	16	19
Washita	9	6	3	4	5	4	5
Woods	10	7	3	6	4	6	4
Woodward	22	15	7	12	10	10	12

1. Source of Information: American Medical Directory, 1950 (Chicago American Medical Association, 1950)
 2. These projections were obtained by subtracting expected deaths from the number of physicians in each county in 1950.