

• FAMILY MEDICINE •

IMPACTS OF UNIVERSITY-BASED RESIDENCY TRAINING PROGRAMS



The enactment of Medicare and Medicaid (1965) created a sudden and significant national demand for medical services that the existing physician workforce could not meet. This demand was especially acute in non-metropolitan areas and in the primary care specialties, particularly in the emerging specialty of Family Medicine.

The public policy response of the Oklahoma Legislature was to:

- establish a new College of Osteopathic Medicine in Tulsa;
- create a primary care oriented branch of the University of Oklahoma College of Medicine in Tulsa; and
- establish several non-metropolitan Family Medicine residency training sites.

The legislation also encouraged the growth of primary care and Family Medicine residency programs by providing the bulk of stipend funding through the newly established Physician Manpower Training Commission. The initial intent was to provide 100% of resident stipend funding for Family Medicine residents and osteopathic internships; and 50% of resident stipend funding for Pediatric and Internal Medicine residents. The policy has been changed to only provide to Family Medicine residents and osteopathic internships.

This assessment is intended to quantify the outputs of the Family Medicine residency programs and to provide data and analysis for consideration as state policy makers reaffirm existing policy and plan for the future.

DATA SOURCES

Except where otherwise noted, all data presented have been provided by the cited residency programs or the Oklahoma Physician Manpower Training Commission.

OKLAHOMA LEGISLATURE

§697.1. Legislative Intent

The Legislature recognizes that there is a need to upgrade the availability of health care services for people of Oklahoma, and thus, there is a need to improve the balance of physician manpower distribution in the state both by type of practice and by geographic location.

Furthermore, the Legislature recognizes the need to accommodate the increasing number of graduates from the medical and osteopathic colleges of Oklahoma by retaining their services as practicing physicians in the state and by attracting graduates from schools outside the state.

Therefore, it is the intent of the Legislature to increase the number of internship and residency programs offered for the training of physicians throughout the state through the sharing by the state of the costs of such internships and residencies with hospitals and other clinical residency training establishments.

These programs shall be designed primarily to emphasize the training of primary health care and family practice physicians and to develop manpower programs to service directly the rural and non-metropolitan areas of the state.

PUBLIC FUNDING

The Oklahoma Physician Manpower Training Commission (PMTC) was established by the Legislature in 1975. The primary mission of the PMTC was, and remains, to increase the number of practicing physicians and nurses in Oklahoma, particularly in rural and underserved areas in the state. The Commission was created to administer three programs in Oklahoma, one of which was the Intern-Resident Cost Sharing Program. That program was to:

- Aid accredited physician-training facilities in the establishment of additional primary medical care and family practice internship and residency training programs by sharing the cost of these programs;

ISSUE DISCUSSION

This section will provide discussion of the following areas of interest and concern:

- Family Medicine residency support
- Economic impacts of the graduates

The state of Oklahoma determined that the most likely physicians to serve in rural areas were Family Medicine physicians; that federal policy precluded the rapid expansion of such programs; and that such programs would be the primary reason to establish additional state medical education programs.

Given these assumptions, the Oklahoma Legislature opted to provide significant sums of state appropriations to public, university-based Family Medicine residency programs. The public residency programs are operated by the University of Oklahoma and Oklahoma State University and osteopathic internships are operated by selected community hospitals.

The assumptions was borne out by the Council on Graduate Medical Education (COGME) in a 1994 report. That group said, "Family physicians are ... five times as likely as general internists or general pediatricians to practice in non-metropolitan areas. Further, family practitioners are the only physicians among all specialties who are as likely to settle in nonmetro areas as is the general population."

Public Investment

The PMTC was the vehicle chosen to distribute these funds directly to the universities sponsoring the residency programs. The programs would, in turn, pay resident stipends from funds received.

The PMTC has expended almost \$139 million to-date. Over \$100 million (72%) was expended supporting resident / intern stipends in these training programs. After a brief startup phase (1976-1980), the programs quickly reached annual funding levels of over \$3 million .

It is unrealistic to believe that teaching hospitals or private foundations would expend a fraction of that amount to sponsor ongoing Family Medicine education programs.

Public Return

There are 431 physician graduates of these programs practicing in Oklahoma. The state of Oklahoma expended \$100 million. The physicians have generated \$3.7 billion economic impact. If one conservatively estimates that only a 10% of these physicians chose an Oklahoma practice because of the public financing, that still yields a return to-date of \$370 million ... which would translate into an annual rate of economic return of almost 11%.

Another way to examine the impact is to calculate that Oklahoma has expended \$323,000 per each of the 431 physicians practicing in the state. Each physician will generate approximately \$29 million over a 30-year career. Assuming the conservative 10% influence factor, above, this yields a \$2.9 million per physician return over 30 years on an initial one-time investment of \$323,000. That annual return on investment is obvious and significant.

Overall Results

The return on investment seems large in economic terms, but is only relevant if the physicians were really necessary. The answer to that query is as complex as one chooses to make it, and is beyond the scope of this analysis.

However, a simple proxy may be used to see another overall impact. It is the percentage of Oklahoma physicians who are practicing in primary care specialties. The Oklahoma percentage is 41%. That is the second most favorable state percentage in the country ... and meets federal goals established 15 years ago. There is no question that such a percentage could not have been approached without the state fiscal catalyst provided from 1975 to present. There should be a general consensus that this is a positive result.

TABLE 1
PUBLIC FINANCING
INTERN-RESIDENT COST SHARING
DATA SOURCE: OKLAHOMA PHYSICIAN MANPOWER TRAINING COMMISSION

1976	\$179,857	1990	\$4,522,409
1977	449,872	1991	4,590,622
1978	710,989	1992	4,381,828
1979	849,833	1993	4,364,644
1980	2,160,758	1994	4,113,143
1981	3,175,159	1995	4,183,969
1982	4,170,211	1996	3,808,079
1983	4,705,412	1997	4,120,070
1984	5,065,133	1998	4,166,641
1985	4,500,063	1999	4,245,719
1986	5,137,583	2000	4,212,510
1987	4,486,948	2001	4,296,513
1988	4,410,043	2002	5,188,495
1989	4,275,956	Totals	\$100,472,459

TABLE 2

OKLAHOMA STATE UNIVERSITY COLLEGE OF OSTEOPATHIC MEDICINE (TULSA AND DURANT)

PRIMARY DATA SOURCE: GINNY MURPHY FOR THE OKLAHOMA STATE UNIVERSITY COLLEGE OF OSTEOPATHIC MEDICINE FAMILY MEDICINE RESIDENCY PROGRAM

The Oklahoma State University College of Osteopathic Medicine (Tulsa) sponsors a Family Medicine residency program that was established in the late 1980's. The first physicians were graduated in 1989. The affiliated Durant program produced its first graduates in 2000.

There have been 72 physician graduates since 1989 including 6 from the Durant program. Of these graduates, 53 are practicing in Oklahoma. This is an Oklahoma retention rate of 74%. Of those practicing in Oklahoma, 32% (17) practice in rural counties while 39% of Oklahomans live in rural counties.

Each year, these physicians are responsible for the generation of 1,914 jobs, and an associated payroll of \$52 million. On average each OSU physician graduate creates 36 jobs and \$982,250 of associated payroll.

These physicians have provided 234 physician-years of service in 33 separate communities and at Fort Sill. The cumulative economic impact of this service is estimated to be over \$236 million. The table below depicts the location where these graduates are serving:

STATES	PHYSICIANS	PCT
Oklahoma	53	74%
Other States	19	26%
Graduates	72	100%
OK REGIONS	PHYSICIANS	PCT
Metropolitan	27	51%
Suburban Metro	9	17%
Rural	17	32%
Total	53	100%
OK METRO	PHYSICIANS	PCT
Tulsa	21	78%
Broken Arrow	1	4%
Coweta	1	4%
Jenks		
Sand Springs	1	4%
Oklahoma City	1	2%
Bethany		
Choctaw		
Edmond		
Midwest City	1	4%
Enid	1	4%
Lawton		
Total	27	100%

APPLIES TO TABLES 2 THROUGH 6

The economic impact calculations in these tables are based upon the IMPLAN database information for Oklahoma's counties. The database is owned and administered by the OSU Cooperative Extension Service and utilized with their permission. The staffing and income assumptions are for family physicians only. The impacts are both direct and secondary.

The detailed methodology and explanation of calculations may be found at Appendices 16-18 of the Report 25+ Years: Oklahoma Physician Manpower Training Commission. This report was published in October 2001 by the Center for Health Policy Research at the Oklahoma State University Center for Health Sciences. Those appendices provide a detailed methodology and explanation of calculations.

ECONOMIC IMPACTS OF GRADUATES

CITY	CURRENT		ANNUAL		CUMULATIVE	
	POP	PHYS	JOBS	INCOME	YRS SVC	MILLIONS
Ada	15,270	1	42	\$1,193,381	10	\$11.9
Allen	1,050	1	42	1,193,381	4	4.8
Ardmore	24,100				2	2.2
Bartlesville	33,690	1	37	1,066,372	5	5.3
Bristow	4,400	1	58	1,282,781	1	1.3
Broken Arrow	75,340	1	26	856,943	5	4.3
Carnegie	1,740	1	44	1,067,636	1	1.1
Claremore	21,780	2	66	1,917,047	2	1.9
Copan	780	1	37	1,066,372	9	9.6
Coweta	7,380	1	85	1,549,229	6	9.3
Cushing	7,930	1	25	807,178	1	0.8
Durant	12,990	1	45	1,150,948	2	2.3
Enid	45,200	1	46	1,156,946	7	8.1
Fairfax	1,610				1	1.1
Fort Sill		1			2	
Gore	900	1	46	1,027,004	2	2.1
Hugo	5,900	1	48	1,333,236	1	1.3
Langley	610				6	6.1
Madill	3,140	1	2	1,356,374	2	2.7
Midwest City	54,170	1	26	842,695	5	4.2
Noble	5,350	1	36	970,745	9	8.7
Nowata	3,710	1	54	1,134,786	5	5.7
Oklahoma City	475,320	1	26	842,695	7	5.9
Okmulgee	13,720	2	98	2,345,054	10	11.7
Oologah	1,010	1	33	958,523	11	10.5
Perry	5,360				2	2.9
Poteau	7,790	1	47	1,258,980	1	1.3
Pryor	8,990	1	38	1,016,772	1	1.0
Sand Springs	18,430	1	26	856,943	6	5.1
Skiatook	5,670	2	97	2,120,911	4	4.2
Tahlequah	13,010	2	85	2,141,298	11	11.8
Thomas	1,150				2	2.5
Tulsa	381,580	21	554	17,995,801	82	70.3
Wagoner	7,390	1	85	1,549,229	9	13.9
TOTALS		53	1,914	\$52,059,260	234	\$236.0
Rural Counties		17	704	\$18,131,768	77	\$85.1
Urban Counties		36	1,210	\$33,927,492	157	\$151.0

HOW TO READ

Annual Economic Impact

Ada is currently being served by 1 physician who graduated from the Oklahoma State University College of Osteopathic Medicine Family Medicine Residency Program. This physician will annually generate 42 jobs in the Ada area. These jobs will generate an estimated \$1.2 million of income annually. All 53 graduates will generate 1,914 jobs creating \$52 million of annual income.

Cumulative Economic Impact

Ada has been served for 10 physician-years by a physician who graduated from the Oklahoma State University College of Osteopathic Medicine Family Medicine Residency Program. The cumulative economic impact has been jobs that generated an estimated \$11.9 million. All 53 graduates provided 234 physician-years of service that generated jobs creating \$236 million of income.

TABLE 3

UNIVERSITY OF OKLAHOMA COLLEGE OF MEDICINE (TULSA, BARTLESVILLE AND RAMONA)

PRIMARY DATA SOURCE: KAREN GREGOROVIC FOR THE UNIVERSITY OF OKLAHOMA COLLEGE OF MEDICINE-TULSA FAMILY MEDICINE RESIDENCY PROGRAM

The University of Oklahoma College of Medicine (Tulsa) Family Medicine residency program was established in the mid-1970's. The first physician was graduated in 1976.

There have been 348 physician graduates since 1975. This includes 298 from the Tulsa program and 46 from the Bartlesville (discontinued) program; and an additional 4 from the Ramona program.

There are 142 of 348 program graduates practicing in Oklahoma. This is an Oklahoma retention rate of 41%. Of those practicing in Oklahoma, 37% (53) practice in rural counties while 39% of Oklahomans live in rural counties.

Each year, these physicians are responsible for the generation of 5,074 jobs, and an associated payroll of \$141.4 million. On average each OU-Tulsa physician graduate creates 36 jobs and \$995,943 of associated payroll.

These physicians have provided 805 physician-years of service in 49 separate communities. The cumulative economic impact of this service is estimated to be over \$808 million. The table below depicts the type of county that these graduates are serving:

STATES	PHYSICIANS	PCT
Oklahoma	142	41%
Other States	206	59%
Total	348	100%
OK REGIONS	PHYSICIANS	PCT
Metropolitan	72	51%
Suburban Metro	17	12%
Rural	53	37%
Total	142	100%
OK METRO	PHYSICIANS	PCT
Tulsa	56	78%
Broken Arrow		
Coweta	1	1%
Jenks	3	4%
Sand Springs	1	1%
Oklahoma City	6	8%
Bethany	1	1%
Choctaw		
Edmond	2	3%
Midwest City		
Enid	2	3%
Lawton		
Total	72	100%

HOW TO READ

Annual Economic Impact

Elk City is currently being served by 3 physicians who graduated from the Family Medicine residency program at the University of Oklahoma College of Medicine-Tulsa. These physicians will annually generate 158 jobs in the Elk City area. These jobs will generate an estimated \$3.6 million of income annually. All 142 program graduates will generate 5,074 jobs creating over \$141 million of income.

Cumulative Economic Impact

Elk City has been served for 49 physician-years by physicians who graduated from the Family Medicine residency program at the University of Oklahoma College of Medicine-Tulsa. The cumulative economic impact has been jobs that generated an estimated \$59.5 million. All 142 graduates provided 805 physician-years of service that generated jobs creating \$808.2 million of income.

ECONOMIC IMPACTS OF GRADUATES

CITY	CURRENT		ANNUAL		CUMULATIVE	
	POP	PHYS	JOBS	INCOME	YRS SVC	MILLIONS
Altus	20,980	1	55	1,286,875	3	3.9
Bartlesville	33,690	7	261	7,464,606	40	42.7
Bethany	20,090	1	26	842,695	2	1.7
Blackwell	7,150	2	78	2,124,964	5	5.3
Catoosa	5,570	2	66	1,917,047	3	2.9
Claremore	21,780	6	197	5,751,141	40	38.3
Cleveland	3,010	1	50	1,167,598	1	1.2
Collinsville	4,140	2	53	1,713,886	1	0.9
Coweta	7,380	1	85	1,549,229	1	1.5
Dewey	3,290	1	37	1,066,372	2	2.1
Drumright	2,880	1	58	1,282,781	2	2.6
Duncan	21,800	2	126	2,762,992	7	9.7
Durant	12,990	1	45	1,150,948		0.0
Edmond	66,760	2	52	1,685,390	18	15.2
Elk City	11,120	3	158	3,643,938	49	59.5
Enid	45,200	2	92	2,313,892	9	10.4
Eufaula	3,490	1	58	1,151,866	2	2.3
Grove	5,540	2	98	2,358,632	26	30.7
Guymon	8,920	1	28	861,513	1	0.9
Hobart	3,730	1	50	1,137,090	2	2.3
Jay	2,460	1	49	1,179,316	11	13.0
Jenks	9,700	3	79	2,570,829	12	10.3
Kansas	690	1	49	1,179,316	20	23.6
Ketchum	290	1	166	3,746,114	1	3.7
Mangum	2,890	1	27	823,237	3	2.5
Miami	13,360	1	64	1,546,747	4	6.2
Muskogee	38,430	2	70	2,258,795	22	24.8
Newcastle	5,520	1	41	991,282	5	5.0
Norman	94,190	1	36	970,745	1	1.0
Nowata	3,710	2	109	2,269,572	12	13.6
Okeene	1,170	1	63	1,323,934	4	5.3
Oklahoma City	475,320	6	156	5,056,170	34	28.7
Okmulgee	13,720	1	49	1,172,527	1	1.2
Pauls Valley	5,660	1	52	1,242,098	1	1.2
Pawhuska	3,610	1	48	1,060,455	2	2.1
Ponca City	26,050	6	235	6,374,892	46	48.9
Poteau	7,790	2	94	2,517,959	26	32.7
Pryor	8,990	2	76	2,033,544	4	4.1
Purcell	5,270	1	41	991,282	14	13.9
Sand Springs	18,430	1	58	1,282,781	11	14.1
Skiatook	5,670	1	48	1,060,455	14	14.8
Stigler	2,470	1	53	1,163,014	15	17.4
Stillwater	38,440	2	50	1,614,356	1	0.8
Stillwell	3,380	2	63	1,841,027	19	17.5
Tahlequah	13,010	1	42	1,070,649		0.0
Tonkawa	2,980	1	39	1,062,482	19	20.2
Tulsa	381,580	56	1,476	47,988,803	287	245.9
Tuttle	4,220	1	31	916,438	2	1.8
Yukon	22,760	1	34	881,670		0.0
TOTALS		142	5,074	\$141,423,945	805	\$808.2
Rural Counties		53	2,428	\$61,513,412	349	\$399.0
Urban Counties		89	2,646	\$79,910,533	456	\$409.2

TABLE 4

UNIVERSITY OF OKLAHOMA COLLEGE OF MEDICINE (OKLAHOMA CITY, ENID AND SHAWNEE)

PRIMARY DATA SOURCE: ANDREA BARKER FOR THE UNIVERSITY OF OKLAHOMA COLLEGE OF MEDICINE FAMILY MEDICINE RESIDENCY PROGRAM

The University of Oklahoma College of Medicine (Oklahoma City) Family Medicine residency program was established in 1968. This analysis is limited to those physicians graduating in and after 1975.

There have been 339 physician graduates since 1975. This includes 246 from the Oklahoma City program and 93 from the Enid and Shawnee (discontinued) programs. Of these graduates, 236 are practicing in Oklahoma. This is an Oklahoma retention rate of 70%. Of those practicing in Oklahoma, 28% (66) practice in rural counties while 39% of Oklahomans live in rural counties.

Each year, these physicians are responsible for the generation of 8,342 jobs, and an associated payroll of \$234 million. On average each OU-OKC physician graduate creates 35 jobs and \$990,200 of associated payroll.

These physicians have provided 2,650 physician-years of service in 81 separate communities. The cumulative economic impact of this service is estimated to be over \$2.6 billion. The table below depicts the type of county that these graduates are serving:

STATES	PHYSICIANS	PCT
Oklahoma	236	70%
Other States	103	30%
Total	339	100%
OK REGIONS	PHYSICIANS	PCT
Metropolitan	145	61%
Suburban Metro	25	11%
Rural	66	28%
Total	236	100%
OK METRO	PHYSICIANS	PCT
Tulsa	6	4%
Broken Arrow	1	>1%
Coweta		
Jenks		
Sand Springs		
Oklahoma City	94	65%
Bethany	2	1%
Choctaw	2	1%
Edmond	10	7%
Midwest City	10	7%
Enid	16	11%
Lawton	4	3%
Total	145	100%

HOW TO READ

Annual Economic Impact

Ada is currently being served by 9 physicians who graduated from the Family Medicine residency program sponsored by the University of Oklahoma College of Medicine. These physicians will annually generate 378 jobs in the Ada area. These jobs will generate an estimated \$10.7 million of income annually. All 236 program graduates will generate 8,342 jobs creating over \$234 million of income.

Cumulative Economic Impact

Ada has been served for 114 physician-years by a physician who graduated from the Family Medicine residency program at the University of Oklahoma College of Medicine. The cumulative economic impact has been jobs that generated an estimated \$136 million. All 236 graduates provided 2,650 physician-years of service that generated jobs creating \$2.65 billion of income.

ECONOMIC IMPACTS OF GRADUATES

CITY	CURRENT		ANNUAL		CUMULATIVE	
	POP	PHYS	JOBS	INCOME	YRS SVC	MILLIONS
Ada	15,270	9	378	\$10,740,430	114	\$136.0
Altus	20,980				6	7.7
Alva	4,970	2	139	3,095,970	19	29.4
Anadarko	6,760	1	44	1,067,636	11	11.7
Antlers	2,590	1	71	1,712,839	16	27.4
Ardmore	24,100	1	43	1,120,299	4	4.5
Atoka	3,340				5	8.1
Bethany	20,090	2	52	1,685,390	52	43.8
Blackwell	7,150	1	39	1,062,482	12	12.7
Blanchard	2,860				2	2.0
Broken Arrow	75,340	1	26	856,943	4	3.4
Chandler	2,760	1	80	1,451,046	5	7.3
Cherokee	1,490	1	72	1,205,944	2	2.4
Chickasha	16,580	3	94	2,749,315	17	15.6
Choctaw	9,990	2	52	1,685,390	5	4.2
Claremore	21,780	1	33	958,523	14	13.4
Clinton	8,650	1	42	1,248,884	17	21.2
Coalgate	1,900				1	3.4
Cordell	2,710	1	116	1,840,386	2	3.7
Cushing	7,930	3	75	2,421,534	43	34.7
Davenport	1,000	1	80	1,451,046	16	23.2
Duncan	21,800	3	189	4,144,488	24	33.2
Durant	12,990	1	45	1,150,948	5	5.8
Edmond	66,760	10	259	8,426,951	109	91.9
El Reno	15,990	1	34	881,670	19	16.8
Elk City	11,120	1	53	1,214,646	20	24.3
Enid	45,200	16	737	18,511,135	226	261.5
Fairview	2,660				5	6.8
Glenpool	8,270				1	0.9
Granite	1,940				1	0.8
Guthrie	10,170	1	80	1,531,272	8	12.3
Guyman	8,920				1	0.9
Harrah	5,010				1	0.8
Hobart	3,730	1	50	1,137,090	8	9.1
Hooker	1,590				10	8.6
Kingfisher	4,280	2	129	2,973,797	14	20.8
Konawa	1,420				1	1.3
Lawton	79,930	4	160	5,092,066	35	44.6
Lexington	1,920				4	3.9
Madill	3,140				5	6.8
Mangum	2,890	2	55	1,646,474	32	26.3
Marlow	4,550	1	63	1,381,496	13	18.0
McAlester	17,420	1	36	1,072,493	4	4.3
McLoud	2,900	2	80	2,063,788	5	5.2
Miami	13,360				2	3.1
Midwest City	54,170	10	259	8,426,951	105	88.5
Muskogee	38,430				14	15.8
Mustang	12,890				5	4.4
Newcastle	5,520	2	82	1,982,563	9	8.9
Norman	94,190	5	181	4,853,723	40	38.8
Okarche	1,200				1	1.5
Oklahoma City	475,320	94	2,436	79,213,336	961	809.8
Okmulgee	13,720	1	49	1,172,527	6	7.0
Pawnee	2,110				1	1.2
Perry	5,360	2	135	2,917,324	26	37.9
Ponca City	26,050	1	39	1,062,482	2	2.1
Poteau	7,790	1	47	1,258,980	22	27.7
Prague	2,330				3	4.4
Purcell	5,270	2	82	1,982,563	27	26.8
Ratliff City	160				8	9.0
Seiling	710	1	45	1,025,693	20	20.5
Shattuck	1,370	1	43	1,189,691	7	8.3
Shawnee	27,980	4	160	4,127,575	45	46.4
Spencer	3,990				7	5.9
Stigler	2,470				2	2.3
Stillwater	38,440	3	75	2,421,534	23	18.6
Stillwell	3,380				13	12.0
Stratford	1,520				11	13.7
Stroud	2,920	1	80	1,451,046	1	1.5
Talihina	1,420				4	5.0
Tecumseh	5,870				4	4.1
Tulsa	381,580	6	158	5,141,657	102	87.4
Tuttle	4,220	1	31	916,438	12	11.0
Wagoner	7,390				4	6.2
Wakita	470				2	4.0
Watonga	3,010	1	63	1,323,934	25	33.1
Weatherford	9,760	3	126	3,746,653	44	55.0
Wewoka	3,860	2	145	2,694,058	32	43.1
Woodward	12,190	9	409	11,783,805	69	90.3
Wynnewood	2,290	1	52	1,242,098	22	27.3
Yukon	22,760	7	237	6,171,687	51	45.0
TOTALS		236	8,342	\$233,688,687	2,650	\$2,648.1
Rural Counties		71	3,425	\$85,050,779	855	\$1,020.6
Urban Counties		165	4,917	148,637,908	1,795	1,627.5

TABLE 5
ALL FAMILY MEDICINE RESIDENCY PROGRAMS IN OKLAHOMA

PRIMARY DATA SOURCES: RESPECTIVE RESIDENCY PROGRAMS

There are three publicly funded Family Medicine residency programs in Oklahoma. They are the University of Oklahoma programs in Oklahoma City and Tulsa, and the Oklahoma State University program in Tulsa. Each of the three programs has had, or currently sponsors, small rural satellite programs.

These programs have graduated 759 physicians since 1975. (See appendices 9, 21-23)

Of these graduates, 431 are practicing in Oklahoma. This is an Oklahoma retention rate of 57%. Of those practicing in Oklahoma, 136 (32%) practice in rural counties while 39% of Oklahomans live in rural counties.

These programs must collectively graduate 100 physicians to produce 18 physicians practicing in a rural county in Oklahoma.

Each year, these physicians are responsible for the generation of 15,361 jobs, and an associated payroll of \$428 million. On average each physician graduate creates 36 jobs and \$992,100 of associated payroll.

These physicians have provided 3,689 physician-years of service in 115 separate communities (see Appendix 25). The cumulative economic impact of this service is estimated to be \$3.7 billion. The table below depicts the type of county that these graduates are serving:

STATES	PHYS	PCT
Oklahoma	431	57%
Other States	328	43%
Total	759	100%

STATES	PHYS	PCT
Metropolitan	244	57%
Suburban Metro	51	12%
Rural	136	31%
Total	431	100%

WHICH COMMUNITIES BENEFIT ... HOW MUCH?
PHYSICIAN-TO-100K POPULATION RATIOS FOR RESIDENCY GRADUATES

HOW TO READ

Three (3) graduates of Oklahoma's university-based Family Medicine residency programs are practicing in Mangum. Given the population of Mangum, this represents a ratio of 103.8 physicians per 100,000 population. The communities are ranked in descending ratio order. The higher the ratio, the more favorably the community is served by these graduates.

CITY	POP	PHYS	RATIO	CITY	POP	PHYS	RATIO
Ketchum	290	1	344.8	Tonkawa	2,980	1	33.6
Kansas	690	1	144.9	Pryor	8,990	3	33.4
Seiling	710	1	140.8	Cleveland	3,010	1	33.2
Copan	780	1	128.2	Watonga	3,010	1	33.2
Gore	900	1	111.1	Madill	3,140	1	31.8
Mangum	2,890	3	103.8	Jenks	9,700	3	30.9
Davenport	1,000	1	100.0	Weatherford	9,760	3	30.7
Oologah	1,010	1	99.0	Dewey	3,290	1	30.4
Allen	1,050	1	95.2	Okmulgee	13,720	4	29.2
Okeene	1,170	1	85.5	Eufaula	3,490	1	28.7
Nowata	3,710	3	80.9	Pawhuska	3,610	1	27.7
Woodward	12,190	9	73.8	Coweta	7,380	2	27.1
Shattuck	1,370	1	73.0	Ponca City	26,050	7	26.9
McCloud	2,900	2	69.0	Bartlesville	33,690	8	23.7
Cherokee	1,490	1	67.1	Tahlequah	13,010	3	23.1
Ada	15,270	10	65.5	Durant	12,990	3	23.1
Stillwell	3,380	2	59.2	Duncan	21,800	5	22.9
Carnegie	1,740	1	57.5	Bristow	4,400	1	22.7
Purcell	5,270	3	56.9	Marlow	4,550	1	22.0
Newcastle	5,520	3	54.3	Tulsa	381,580	83	21.8
Hobart	3,730	2	53.6	OKC	475,320	101	21.2
Skiatook	5,670	3	52.9	Midwest City	54,170	11	20.3
Wewoka	3,860	2	51.8	Choctaw	9,990	2	20.0
Poteau	7,790	4	51.3	Noble	5,350	1	18.7
Cushing	7,930	4	50.4	Chickasha	16,580	3	18.1
Collinsville	4,140	2	48.3	Edmond	66,760	12	18.0
Tuttle	4,220	2	47.4	Pauls Valley	5,660	1	17.7
Kingfisher	4,280	2	46.7	Hugo	5,900	1	16.9
Wynnewood	2,290	1	43.7	Bethany	20,090	3	14.9
Enid	45,200	19	42.0	Anadarko	6,760	1	14.8
Blackwell	7,150	3	42.0	Shawnee	27,980	4	14.3
Claremore	21,780	9	41.3	Wagoner	7,390	1	13.5
Jay	2,460	1	40.7	Stillwater	38,440	5	13.0
Stigler	2,470	1	40.5	Clinton	8,650	1	11.6
Alva	4,970	2	40.2	Guymon	8,920	1	11.2
Antlers	2,590	1	38.6	Sand Springs	18,430	2	10.9
Perry	5,360	2	37.3	Guthrie	10,170	1	9.8
Cordell	2,710	1	36.9	Miami	13,360	1	7.5
Chandler	2,760	1	36.2	Norman	94,190	6	6.4
Grove	5,540	2	36.1	El Reno	15,990	1	6.3
Elk City	11,120	4	36.0	McAlester	17,420	1	5.7
Catoosa	5,570	2	35.9	Muskogee	38,430	2	5.2
Yukon	22,760	8	35.1	Lawton	79,930	4	5.0
Drumright	2,880	1	34.7	Altus	20,980	1	4.8
Stroud	2,920	1	34.2	Ardmore	24,100	1	4.1
				Broken Arrow	75,340	2	2.7
				State Total		431	

TABLE 6
ALL FAMILY MEDICINE RESIDENCY PROGRAMS IN OKLAHOMA
 PRIMARY DATA SOURCES: RESPECTIVE RESIDENCY PROGRAMS

ECONOMIC IMPACTS IN OKLAHOMA OF RESIDENCY PROGRAM GRADUATES													
CITY	CURRENT		ANNUAL		CUMULATIVE		CITY	CURRENT		ANNUAL		CUMULATIVE	
	POP	PHYS	JOBS	INCOME	YRS SVC	MILLIONS		POP	PHYS	JOBS	INCOME	YRS SVC	MILLIONS
Ada	15,270	10	420	11,933,811	124	148.0	Lexington	1,920				4	3.9
Allen	1,050	1	42	1,193,381	4	4.8	Madill	3,140	1	61	1,356,374	7	9.5
Altus	20,980	1	55	1,286,875	9	11.6	Mangum	2,890	3	82	2,469,711	35	28.8
Alva	4,970	2	139	3,095,970	19	29.4	Marlow	4,550	1	63	1,381,496	13	18.0
Anadarko	6,760	1	44	1,067,636	11	11.7	McAlester	17,420	1	36	1,072,493	4	4.3
Antlers	2,590	1	71	1,712,839	16	27.4	McLoud	2,900	2	80	2,063,788	5	5.2
Ardmore	24,100	1	43	1,120,299	6	6.7	Miami	13,360	1	64	1,546,747	6	9.3
Atoka	3,340				5	8.1	Midwest City	54,170	11	285	9,269,646	110	92.7
Bartlesville	33,690	8	298	8,530,979	45	48.0	Muskogee	38,430	2	70	2,258,795	36	40.7
Bethany	20,090	3	78	2,528,085	54	45.5	Mustang	12,890				5	4.4
Blackwell	7,150	3	118	3,187,446	17	18.1	Newcastle	5,520	3	123	2,973,845	14	13.9
Blanchard	2,860				2	2.0	Noble	5,350	1	36	970,745	9	8.7
Bristow	4,400	1	58	1,282,781	1	1.3	Norman	94,190	6	217	5,824,467	41	39.8
Broken Arrow	75,340	2	53	1,713,886	9	7.7	Nowata	3,710	3	163	3,404,358	17	19.3
Carnegie	1,740	1	44	1,067,636	1	1.1	Okarche	1,200				1	1.5
Catoosa	5,570	2	66	1,917,047	3	2.9	Okeene	1,170	1	63	1,323,934	4	5.3
Chandler	2,760	1	80	1,451,046	5	7.3	Oklahoma City	475,320	101	2,618	85,112,201	1,002	844.4
Cherokee	1,490	1	72	1,205,944	2	2.4	Okmulgee	13,720	4	197	4,690,109	17	19.9
Chickasha	16,580	3	94	2,749,315	17	15.6	Oologah	1,010	1	33	958,523	11	10.5
Choctaw	9,990	2	52	1,685,390	5	4.2	Pauls Valley	5,660	1	52	1,242,098	1	1.2
Claremore	21,780	9	296	8,626,711	56	53.7	Pawhuska	3,610	1	48	1,060,455	2	2.1
Cleveland	3,010	1	50	1,167,598	1	1.2	Pawnee	2,110				1	1.2
Clinton	8,650	1	42	1,248,884	17	21.2	Perry	5,360	2	135	2,917,324	28	40.8
Coalgate	1,900				1	3.4	Ponca City	26,050	7	275	7,437,375	48	51.0
Collinsville	4,140	2	53	1,713,886	1	0.9	Poteau	7,790	4	187	5,035,919	49	61.7
Copan	780	1	37	1,066,372	9	9.6	Prague	2,330				3	4.4
Cordell	2,710	1	116	1,840,386	2	3.7	Pryor	8,990	3	115	3,050,316	5	5.1
Coweta	7,380	2	170	3,098,458	7	10.8	Purcell	5,270	3	123	2,973,845	41	40.6
Cushing	7,930	4	100	3,228,712	44	35.5	Ratliff City	160				8	9.0
Davenport	1,000	1	80	1,451,046	16	23.2	Sand Springs	18,430	2	115	2,565,563	17	21.8
Dewey	3,290	1	37	1,066,372	2	2.1	Seiling	710	1	45	1,025,693	20	20.5
Drumright	2,880	1	58	1,282,781	2	2.6	Shattuck	1,370	1	43	1,189,691	7	8.3
Duncan	21,800	5	316	6,907,480	31	42.8	Shawnee	27,980	4	160	4,127,575	45	46.4
Durant	12,990	3	136	3,452,843	7	8.1	Skiatook	5,670	3	145	3,181,366	18	19.1
Edmond	66,760	12	311	10,112,341	127	107.0	Spencer	3,990				7	5.9
El Reno	15,990	1	34	881,670	19	16.8	Stigler	2,470	1	53	1,163,014	17	19.8
Elk City	11,120	4	210	4,858,584	69	83.8	Stillwater	38,440	5	125	4,035,889	24	19.4
Enid	45,200	19	875	21,981,973	242	280.0	Stillwell	3,380	2	63	1,841,027	32	29.5
Eufaula	3,490	1	58	1,151,866	2	2.3	Stratford	1,520				11	13.7
Fairfax	1,610				1	1.1	Stroud	2,920	1	80	1,451,046	1	1.5
Fairview	2,660				5	6.8	Tahlequah	13,010	3	127	3,211,947	11	11.8
Fort Sill		1			2		Talihina	1,420				4	5.0
Glenpool	8,270				1	0.9	Tecumseh	5,870				4	4.1
Gore	900	1	46	1,027,004	2	2.1	Thomas	1,150				2	2.5
Granite	1,940				1	0.8	Tonkawa	2,980	1	39	1,062,482	19	20.2
Grove	5,540	2	98	2,358,632	26	30.7	Tulsa	381,580	83	2,188	71,126,262	471	403.6
Guthrie	10,170	1	80	1,531,272	8	12.3	Tuffle	4,220	2	62	1,832,877	14	12.8
Guymon	8,920	1	28	861,513	2	1.7	Wagoner	7,390	1	85	1,549,229	13	20.1
Harrah	5,010				1	0.8	Wakita	470				2	4.0
Hobart	3,730	2	101	2,274,181	10	11.4	Watonga	3,010	1	63	1,323,934	25	33.1
Hooker	1,590				10	8.6	Weatherford	9,760	3	126	3,746,653	44	55.0
Hugo	5,900	1	48	1,333,236	1	1.3	Wewoka	3,860	2	145	2,694,058	32	43.1
Jay	2,460	1	49	1,179,316	11	13.0	Woodward	12,190	9	409	11,783,805	69	90.3
Jenks	9,700	3	79	2,570,829	12	10.3	Wynnewood	2,290	1	52	1,242,098	22	27.3
Kansas	690	1	49	1,179,316	20	23.6	Yukon	22,760	8	271	7,053,356	51	45.0
Ketchum	290	1	166	3,746,114	1	3.7	TOTALS	431		15,361	427,597,731	3,689	3,694.9
Kingfisher	4,280	2	129	2,973,797	14	20.8	Rural Counties	136		6,584	165,552,902	1,231	1,508.9
Konawa	1,420				1	1.3	Urban Counties	295		8,778	262,044,828	2,458	2,186.0
Langley	610				6	6.1							
Lawton	79,930	4	160	5,092,066	35	44.6							

TABLE 7

GRADUATES OF FAMILY MEDICINE RESIDENCY PROGRAMS IN OKLAHOMA

SOURCES: DEPARTMENTS OF FAMILY MEDICINE, UNIVERSITY OF OKLAHOMA COLLEGE OF MEDICINE (OKLAHOMA CITY); OFFICE OF STUDENT AND RESIDENT AFFAIRS, DEPARTMENTS OF FAMILY MEDICINE, UNIVERSITY OF OKLAHOMA COLLEGE OF MEDICINE (TULSA); DEPARTMENT OF FAMILY MEDICINE, OKLAHOMA STATE UNIVERSITY COLLEGE OF OSTEOPATHIC MEDICINE. DATA WAS NOT AVAILABLE FROM OSTEOPATHIC INTERNSHIP PROGRAMS.

	UNIVERSITY OF OKLAHOMA								OKLAHOMA STATE UNIVERSITY			TOTALS
	OKLAHOMA CITY				TULSA				TULSA	DURANT	ALL	
	OKC	ENID	SHAWNEE	ALL	TULSA	B'VILLE	RAMONA	ALL				
1965	0	-	-	0	-	-	-	-	-	-	-	0
1966	0	-	-	0	-	-	-	-	-	-	-	0
1967	0	-	-	0	-	-	-	-	-	-	-	0
1968	0	-	-	0	-	-	-	-	-	-	-	0
1969	1	-	-	0	-	-	-	-	-	-	-	1
1970	2	-	-	0	-	-	-	-	-	-	-	2
1971	1	-	-	0	-	-	-	-	-	-	-	1
1972	3	-	-	0	-	-	-	-	-	-	-	3
1973	3	-	-	0	-	-	-	-	-	-	-	3
1974	6	-	-	0	-	-	-	-	-	-	-	6
1975	5	-	-	5	-	-	-	-	-	-	-	5
1976	6	-	-	6	1	-	-	1	-	-	-	7
1977	4	-	-	4	5	-	-	5	-	-	-	9
1978	6	1	-	7	9	-	-	9	-	-	-	16
1979	7	3	-	10	7	-	-	7	-	-	-	17
1980	15	0	-	15	11	1	-	12	-	-	-	27
1981	12	4	3	19	13	2	-	15	-	-	-	34
1982	8	4	3	15	13	4	-	17	-	-	-	32
1983	6	6	1	13	14	3	-	17	-	-	-	30
1984	7	2	3	12	13	4	-	17	-	-	-	29
1985	8	4	3	15	13	2	-	15	-	-	-	30
1986	14	4	-	18	11	3	-	14	-	-	-	32
1987	15	3	-	18	12	5	-	17	-	-	-	35
1988	12	3	-	15	16	4	-	20	-	-	-	35
1989	10	4	-	14	11	4	-	15	2	-	2	31
1990	8	3	-	11	10	6	-	16	3	-	3	30
1991	11	4	-	15	18	4	-	22	2	-	2	39
1992	8	3	-	11	15	3	-	18	7	-	7	36
1993	7	1	-	8	11	1	-	12	1	-	1	21
1994	5	3	-	8	11	-	-	11	4	-	4	23
1995	5	4	-	9	8	-	-	8	6	-	6	23
1996	8	3	-	11	13	-	-	13	7	-	7	31
1997	11	5	-	16	11	-	-	11	8	-	8	35
1998	11	4	-	15	17	-	-	17	5	-	5	37
1999	13	5	-	18	16	-	3	19	5	-	5	42
2000	10	3	-	13	11	-	0	11	10	3	13	37
2001	14	4	-	18	8	-	1	9	6	3	9	36
Total	262	80	13	355	298	46	4	348	66	6	72	775

Data Revision: February 2002.

One year internship positions not included.