

The Economic Impact of the Health Sector on the East Central Oklahoma Family Health Clinic Medical Service Area

Hospitals



Nursing Homes



Community



Physicians, etc.

Other Services



Pharmacies

Oklahoma State Department of Health
Office of Rural Health

Oklahoma Cooperative Extension Service
Oklahoma State University

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on the East Central Oklahoma Family Health Center Medical Service Area

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Lara Brooks, Assistant Extension Specialist, OSU, Stillwater
Phone: 405-744-6083, Fax: 405-744-9835, Email: lara.brooks@okstate.edu

Brian Whitacre, Assistant Professor and Extension Economist, OSU, Stillwater
405-744-6083

Jack Frye, Area Extension Rural Development Specialist, OSU, Ada
580-332-4100

Aubie Keesee, Hughes County Extension Agent, Holdenville
405-379-5470

Corie Kaiser, Health Consultant, Oklahoma Center for Rural Health, Oklahoma City
405-945-9197

Val Schott, Director, Oklahoma Center for Rural Health, Oklahoma City & Tulsa
405-945-9197

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Medical facilities have a tremendous medical and economic impact on the community in which they are located. This is especially true with health care facilities, such as hospitals and nursing homes. These facilities not only employ a large number of people and have a significant payroll, but they also draw a large number of people from rural areas that need medical services into the community. The overall objective of this study is to measure the economic impact of the health sector on the East Central Oklahoma Family Health Center medical service area. The specific objectives of this report are to:

1. Review economic trends of the health sector for the U.S. and Hughes County;
2. Identify population for the medical service area of East Central Oklahoma Family Health Center;
3. Summarize the direct economic activities of the health sector;
4. Review concepts of community economics and multipliers; and
5. Estimate the secondary and total impacts of the health sector on the East Central Oklahoma Family Health Center medical service area.

No recommendations will be made in this report.

Health Services and Rural Development

The nexus between health care services and rural development is often overlooked. At least three primary areas of commonality exist. A strong health care system can help attract and maintain business and industry growth, and attract and retain retirees. A strong health care system can also create jobs in the local area. The following section looks at how the health care sector impacts these areas.

Services that Impact Rural Development

Type of Growth	Services Important to Attract Growth
Industrial and Business	Health and Education
Retirees	Health and Safety

Business and Industry Growth

Studies have found that quality-of-life (QOL) factors are playing a dramatic role in business and industry location decisions. Among the most significant of the QOL variables are health care services, which are important for at least three reasons.

First, as noted by a member of the Board of Directors of a community economic development corporation, the presence of good health and education services is imperative to industrial and business leaders as they select a community for location. Employees and participating management may offer strong resistance if they are asked to move into a community with substandard or inconveniently located health services.

Secondly, when a business or industry makes a location decision, it wants to ensure that the local labor force will be productive, and a key factor in productivity is good health. Thus, investments in health care services can be expected to yield dividends in the form of increased labor productivity.

The cost of health care services is the third factor that is considered by business and industry in development decisions. Research shows that corporations take a serious look at health care costs in determining site locations. Sites that provide health care services at a lower cost are given higher consideration for new industry than sites with much higher health care costs.

Health Services and Attracting Retirees

A strong and convenient health care system is important to retirees, a special group of residents whose spending and purchasing can be a significant source of income for the local economy. Many rural areas have environments (e.g., moderate climate and outdoor activities) that enable them to be in a good position to attract and retain retirees. The amount of spending embodied in this population, including the purchasing power associated with Social Security, Medicare, and other transfer payments, is substantial. Additionally, middle and upper income retirees often have substantial net worth. Although the data are limited, several studies suggest health services may be a critical variable that influences the location decision of retirees. For example, one study found that four items were the best predictors of retirement locations: safety, recreational facilities, dwelling units, and health care. Another study found that nearly 60 percent of potential retirees said health services were in the “must have” category when considering a retirement community. Only protective services were mentioned more often than health services as a “must have” service.

Health Services and Job Growth

A factor important to the success of rural economic development is job creation. *The health care sector is an extremely fast growing sector, and based on the current demographics, there is every reason to expect this trend to continue.* Data in **Table 1** provide selected health expenditures and employment data for the United States. Several highlights from the national data are:

- In 1970, health care services as a share of the national gross domestic product (GDP) were 7.2 percent. This increased to 16.2 percent in 2007;
- Per capita health expenditures increased from \$356 in 1970 to \$7,421 in 2007;
- Employment in the health sector increased almost 324.0 percent from 1970 to 2007; and

- Annual increases in employment from 2003 to 2007 ranged from 2.0 percent to 2.7 percent.

In addition, the Bureau of Labor Statistics projects substantial increases in health care expenditures from 2008 through 2017. In fact, the U. S. Department of Health and Human Services, Centers for Medicare and Medicaid Services predict that health care expenditures will account for 18.4 percent of GDP by 2014 and increase to 19.5 percent of GDP in 2017. Per capita health care expenditures are projected to increase to \$11,043 in 2014 and to \$13,101 in 2017. Total health expenditures are projected to increase to almost \$4.3 trillion in 2017.

Table 1
United States Health Expenditures and Employment Data
1970-2007; Projected for 2008, 2011, 2014 & 2017

United States Data					
Year	Total Health Expenditures (\$Billions)	Per Capita Health Expenditures (\$)	Health as % of GDP (%)	Health Sector Employment (000)	Ave. Yrly. Increase in Employment (%)
1970	\$74.9	\$356	7.2%	3,052 ^a	
1980	253.4	1,100	9.1%	5,278 ^a	7.3%
1990	714.1	2,814	12.3%	7,814 ^a	4.8%
2000	1,353.2	4,789	13.8%	10,858 ^a	3.9%
2001	1,469.4	5,149	14.5%	11,188 ^a	3.0%
2002	1,602.3	5,560	15.3%	11,536 ^a	3.1%
2003	1,734.9	5,967	15.8%	11,817 ^b	N/A
2004	1,854.8	6,319	15.9%	12,055 ^b	2.0%
2005	1,980.6	6,687	15.9%	12,314 ^b	2.1%
2006	2,112.7	7,062	16.0%	12,602 ^b	2.3%
2007	2,241.2	7,421	16.2%	12,946 ^b	2.7%
Projections					
2008	2,394.3	7,868	16.6%		
2011	2,905.1	9,322	17.4%		
2014	3,523.6	11,043	18.4%		
2017	4,277.1	13,101	19.5%		

SOURCES: Bureau of Labor Statistics; 2009 Bureau of Economic Analysis; 2009 Centers for Medicare & Medicaid Services, National Health Expenditures 1970-2007 and National Health Expenditure Projections 2007-2017 (<http://www.cms.hhs.gov/NationalHealthExpendData> [January 2009]).

N/A - Not Available.

^a Based on Standard Industrial Classification (SIC) codes for health sector employment.

^b Based on North American Industrial Classification System (NAICS) for health sector employment.

Figure 1 illustrates 2007 health expenditures by percent of gross domestic product and by type of health service. The largest health service type was hospital care, representing 31.0 percent of the total. The next largest type of health services was physician services with 21.0 percent of the total.

Hughes County Economic Trends

Data relative to the health sector for Hughes County are provided in **Table 2**. Data in **Table 2** are from the U. S. Census Bureau County Business Patterns, based on the North American Industry Classification System (NAICS). The table is based on employment and payroll for both health services and total county services and health services as a percent of total county services for Hughes County. Also, health services for the state of Oklahoma are illustrated as a percent of total state employment and payroll for comparison to the county data. This table states how health services have changed over time. Health services employment in Hughes County increased 87.1 percent from 379 employees in 2000 to 709 employees in 2007 (**Table 2**). During the same time period, the total county employment also increased 17.7 percent. County health services employment as a percent of total county employment increased from 20.0 percent in 2000 to 31.7 percent in 2007, while the state health services employment as a percent of total state employment increased from 14.1 percent in 2000 to 15.3 percent in 2007. The county saw an increase of 15.3 percent over this seven year period, while the state grew only 1.2 percent.

The county health services payroll also saw significant increases over time. Hughes County's health services payroll increased 69.3 percent from about \$6.1 million in 2000 to about \$10.4 million in 2007; this compares to an increase of 46.4 percent for the total county payroll (**Table 2**). During this same time period, the state health services payroll increased from 14.0 percent to 15.3 percent. County health services payroll as a percent of total county payroll increased from 20.5 percent in 2000 to 23.7 percent in 2007.

Table 2
East Central Oklahoma Family Health Center
Employment and Payroll for County Business Patterns*
Hughes County and the State of Oklahoma

Employment				
Based on	Health Services	Total County	Hlth Svcs as a % of Total County	Hlth Svcs as a % of Total State
NAICS ¹	Employment	Employment	Employment	Employment
2000	379	1,898	20.0%	14.1%
2001	508	2,076	24.5%	14.3%
2002	571	2,022	28.2%	15.1%
2003	457	2,014	22.7%	15.2%
2004	441	1,936	22.8%	15.4%
2005	458	2,034	22.5%	15.4%
2006	450	2,010	22.4%	15.1%
2007	709	2,234	31.7%	15.3%
% Change '00 - '07	87.1%	17.7%		

Payroll				
Based on	Health Services Payroll	Total County Payroll	Hlth Svcs as a % of Total County Payroll	Hlth Svcs as a % of Total State Payroll
NAICS ¹	(\$1000s)	(\$1000s)	County Payroll	State Payroll
2000	\$6,133.00	\$29,983.00	20.5%	14.0%
2001	\$8,308.00	\$33,369.00	24.9%	14.5%
2002	\$8,172.00	\$33,154.00	24.6%	15.2%
2003	\$7,474.00	\$32,506.00	23.0%	15.2%
2004	\$7,452.00	\$34,807.00	21.4%	15.7%
2005	\$8,308.00	\$38,147.00	21.8%	15.5%
2006	\$9,061.00	\$40,253.00	22.5%	15.1%
2007	\$10,382.00	\$43,887.00	23.7%	15.3%
% Change '00 - '07	69.3%	46.4%		

Source: U.S. Census Bureau, County Business Patterns; 2000-2007 data (www.census.gov [November 2009]).

¹ The Health Care and Social Assistance NAICS sector comprises establishments providing health care and social assistance for individuals. The sector includes both health care and social assistance because it is sometimes difficult to distinguish between the boundaries of these two activities. Industries in this sector are arranged on a continuum starting with those establishments providing medical care exclusively, continuing with those providing health care and social assistance, and finally finishing with those providing only social assistance. The services provided by establishments in this sector are delivered by trained professionals. All industries in the sector shared this commonality of process, namely, labor inputs of health practitioners or social workers with the requisite expertise. Many of the industries in the sector are defined based on the educational degree held by the practitioners included in the industry.

* Data from County Business Patterns exclude self-employed persons, employees of private households, railroad employees, agricultural production workers, and for most government employees (except for those working in wholesale liquor establishments, retail liquor stores, Federally-chartered savings institutions, Federally-chartered credit unions, and hospitals).

Basic economic indicators of the Hughes County economy are illustrated in **Table 3**.

Based on Bureau of Economic Analysis data, the 2007 per capita income for Hughes County of \$22,449 is lower than the per capita income for the state of Oklahoma and the United States.

Table 3
Economic Indicators for Hughes County,
the State of Oklahoma and the Nation

Indicator	County	State	U.S.
Total Personal Income (2007)	\$304,764,000	\$126,272,950,000	\$11,634,322,000,000
Per Capita Income (2007)	\$22,449	\$34,997	\$38,615
Employment (2008)	4,764	1,681,854	145,362,000
Unemployment (2008)	282	66,562	8,924,000
Unemployment Rate (2008)	5.6%	3.8%	5.8%
Employment (September 2009)	4,929*	1,664,080	138,864,000
Unemployment (September 2009)	589*	116,813	15,142,000
Unemployment Rate (September 2009)	10.7%*	6.6%	9.8%
Percentage of People in Poverty (2008)	24.3%	15.7%	13.2%
Percentage of Under 18 in Poverty (2008)	32.2%	22.0%	18.2%
Transfer Dollars (2007)	\$105,684,000	\$21,218,050,000	\$1,712,794,000,000
Transfer Dollars as Percentage of Total Personal Income (2007)	34.7%	16.8%	14.7%

*Employment data for Hughes County for September 2009 should be considered preliminary
SOURCES: 2009 Bureau of Labor Statistics; 2009 Bureau of Economic Analysis; 2009 U.S. Census Bureau.

According to the Bureau of Labor Statistics, the unemployment rate for Hughes County was 5.6 percent for 2008, which was the higher than the state (3.8 percent) but lower than the national (5.8 percent) rates. Moreover, in September 2009, the preliminary unemployment rate

estimate for Hughes County had increased to 10.7 percent, which was higher than the state (6.6 percent) and the nation (9.8 percent). However, the number of people employed in Hughes County increased 3.5 percent from 2008 to September 2009, while the number of people unemployed increased 109 percent during that same time period. The unemployment and employment estimates from September 2009 are considered preliminary.

From the U. S. Census Bureau, the percent of people in poverty in Hughes County was 24.3 percent in 2008, as compared to 15.7 percent for the state and 13.2 percent nationally. The percentage of people under age 18 in poverty in 2008 followed similar trends, with Hughes County being higher than both the state and the nation. Another economic indicator is the percent of personal income that is from transfer payments. Based on Bureau of Economic Analysis data, Hughes County had 34.7 percent of total personal income from transfer payments, which is higher than both the state and the nation. Transfer payments represent that portion of total personal income whose source is state and federal funds. These typically include social security, Medicare, and retirement / disability payments.

A growing concern across the country is the number of uninsured. **Figure 2** displays the percentage of uninsured individuals per county under the age of 65. This percentage includes both sexes and all income levels. Hughes County is in the 25-30 percent range of uninsured under the age of 65. This is higher than the state percentage of 21.0 percent.

Demographic Trends for the East Central Oklahoma Family Health Center Medical Service Area and Hughes County

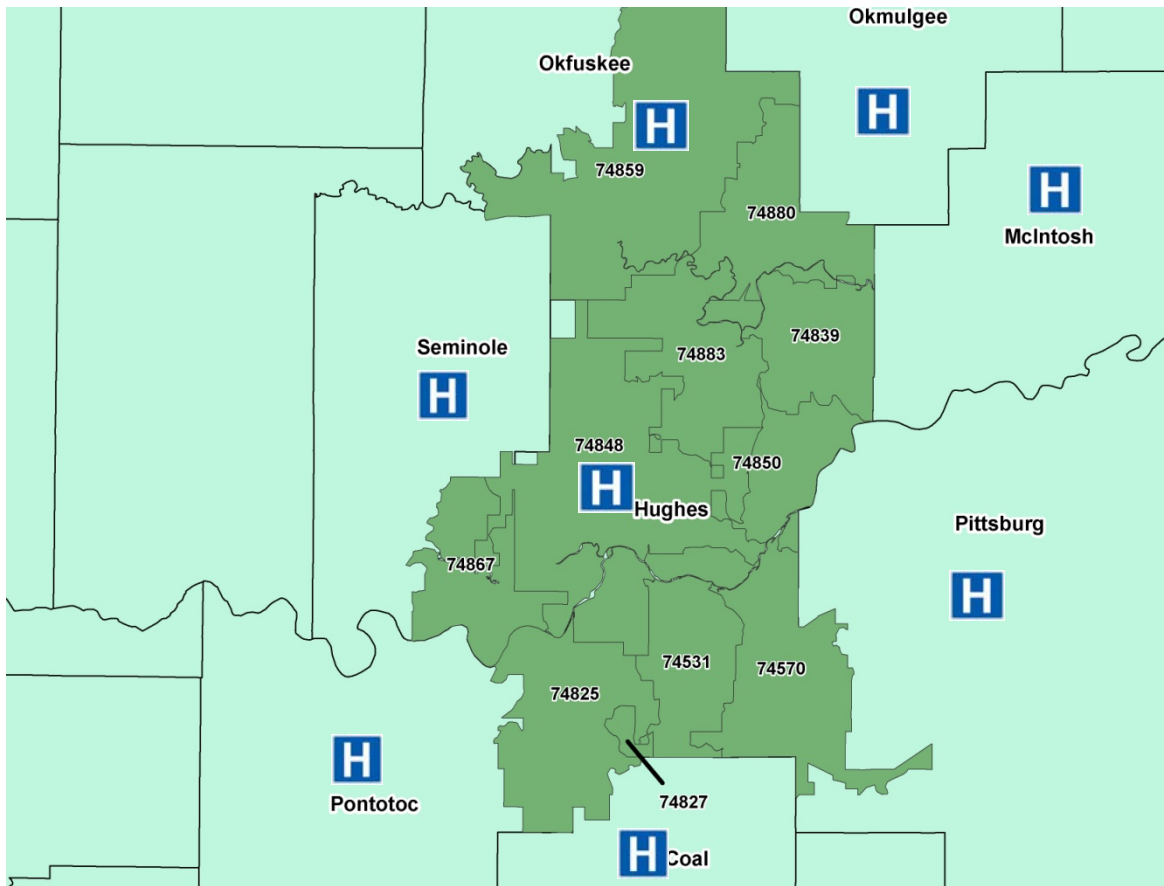
The East Central Oklahoma Family Health Center medical service area is delineated in **Figure 3**. The primary medical service area is the immediate area surrounding Wetumka including the zip code areas of Wetumka, 74883; Calvin, 74531; Dustin, 74839; Sasakwa, 74867; Stuart, 74570; Holdenville, 74848; Allen, 74825; Lamar, 74850; Weleetka, 74880; Atwood, 74827; and Okemah, 74859. According to the U.S. Census Bureau, the 2000 census population of this primary medical service area was 25,817 (**Table 4a**).

Since the U. S. Census Bureau only has zip code population for the 2000 census year, another source for more current populations by zip code was researched. ESRI, a company specializing in geographic information systems software, has illustrated zip code populations for the 2000 census year and projected zip code populations for 2008 and projections for 2013. The zip code populations do not match exactly due to a variance in zip code boundaries and based on the methodology for determining population by zip code. However, when comparing the 2000 census and the 2000 ESRI data, total populations for the medical service area do not vary considerably. The ESRI projection of the primary medical service area shows an decrease in population of 2.8 percent from 2000 to 2008 and a projected 4.4 percent decrease from 2000 to 2013 (**Table 4a**).

Table 4b also shows population trends for the state of Oklahoma, Hughes County, and numerous cities in the primary medical service are of East Central Oklahoma Family Health Center for the years 1990, 2000, and 2008. From 1990 to 2000, Hughes County had a population increase of 8.68 percent. The state experienced a population growth of 9.70 percent. During the same time period, Lamar and Calvin reported the highest increases in population of 77.32 percent and 11.16 percent, respectively. Dustin and Wetumka also reported an increase in population during this

same time period. Many communities did report a decline in population. Weleetka had the largest decline of 8.81 percent followed by Stuart with a decline of 3.51 percent. From 2000 to 2008, Hughes County saw a population decrease of 3.74 percent. The state of Oklahoma experienced an increase of 5.56 percent. Holdenville experienced an increase of 14.48 percent, and they were the only community to increase in population during this time period. Weleetka had the largest decrease of 8.68 percent followed by Calvin with a decrease of 7.53 percent. Wetumka experienced a decrease of 3.17 percent during this same time period. It should also be noted that the population for the town of Sasakwa was unavailable in the Census 1990 data, Census 2000 data and Census 2008 estimates data.

Figure 2
East Central Oklahoma Family Health Center Medical Service Area



 Primary Medical Services Area

City	County	Hospital	No. of Beds
Coalgate	Coal	Mary Hurley Hospital	20
Holdenville	Hughes	Holdenville General Hospital	32
Eufaula	McIntosh	EPIC Medical Center	33
Okemah	Okfuskee	Creek Nation Community Hospital	25
Henryetta	Okmulgee	Henryetta Medical Center	41
McAlester	Pittsburg	McAlester Regional Health Center	193
Ada	Pontotoc	Valley View Regional Hospital	156
Seminole	Seminole	INTEGRIS Seminole Medical Center	32

Table 4a
Population of East Central Oklahoma Family Health Center
Medical Service Area

Population by Zip Code	City	Populations			
		2000 Census	2000 ESRI	2008 ESRI	2013 ESRI
<i>Primary Medical Service Area</i>					
74883	Wetumka	2,570	2175	2044	1991
74531	Calvin	948	1,031	1,006	994
74839	Dustin	895	893	847	831
74867	Sasakwa	913	730	711	707
74570	Stuart	1,118	758	776	774
74848	Holdenville	8,228	8,394	8,369	8,271
74825	Allen	2,305	4,491	4,356	4,345
74850	Lamar	296	281	270	265
74880	Weleetka	2,266	2,383	2,232	2,155
74827	Atwood	450	688	666	657
74859	Okemah	5,828	5,758	5,529	5,380
Total		25,817	27,582	26,806	26,370
% Change from 2000 ESRI				-2.8%	-4.4%

Table 4b
Population Trends for Hughes County and Oklahoma

	1990 Population	2000 Population	2008 Population	% Change 1990-2000	% Change 200-2008
State of Oklahoma	3,145,585	3,450,654	3,642,361	<u>9.70%</u>	<u>5.56%</u>
Hughes County	13,023	14,154	13,625	<u>8.68%</u>	<u>-3.74%</u>
<i>Population by City</i>					
Wetumka	1,427	1,451	1,405	1.68%	-3.17%
Calvin	251	279	258	11.16%	-7.53%
Dustin	429	452	441	5.36%	-2.43%
Sasakwa	n/a	n/a	n/a	n/a	n/a
Stuart	228	220	209	-3.51%	-5.00%
Holdenville	4,792	4,732	5,417	-1.25%	14.48%
Allen	n/a	n/a	n/a	n/a	n/a
Lamar	97	172	168	77.32%	-2.33%
Weleetka	1,112	1,014	926	-8.81%	-8.68%
Atwood	n/a	113	109	n/a	-3.54%
Okemah	3,085	3,038	2,911	-1.52%	-4.18%
Cities Total	<u>11,421</u>	<u>11,471</u>	<u>11,844</u>		

SOURCE: Population data from the U.S. Bureau of Census, 1990, 2000; U. S. Bureau of the Census, Population Estimates Branch, 2008; Community Sourcebook of Zip Code Demographics, 21st Edition, 2008, ESRI, ESRI 2000 census population and 2008 and 2013 projected populations.

Tables 5 and 6 provide further details about the demographic trends of Hughes County.

Table 5 presents the breakdown by age group for Hughes County and the State of Oklahoma from the census years 1990 and 2000 and the 2008 census estimates. The lowest age group, age 0-14, experienced a decrease from 1990-2000 and 2008 on both the state and county level. The age group of 45-64, however, has seen a consistent increase over time. In Hughes County, those age 45-64 made up 21.8 percent of the total population in 1990, and this went up to 23.4 percent in 2008. This same trend holds true for the state of Oklahoma as well.

Table 6 shows the race and ethnic group percentages for Hughes County and the state of Oklahoma for the census years 1990 and 2000 and the 2008 census estimates. The state has experienced a significant increase in people of Hispanic origin, increasing from 2.7 percent in 1990 to 7.6 percent in 2008. Hughes County has experienced a similar trend. In 1990, those of Hispanic origin made up 1.0 percent of the population. In 2000, this number increased to 2.5 percent. This number again increased in the 2008 estimates to 3.4 percent.

Table5
Age Groups -
for Population Numbers and Percent of Total Population
Hughes County and the State of Oklahoma

Age Groups	Hughes County		State of Oklahoma	
	Number	Percent	Number	Percent
1990 Census				
0-14	2,587	19.9%	702,537	22.3%
15-19	931	7.1%	233,093	7.4%
20-24	605	4.6%	222,766	7.1%
25-44	3,105	23.8%	961,560	30.6%
45-64	2,844	21.8%	601,416	19.1%
65+	2,951	<u>22.7%</u>	<u>424,213</u>	<u>13.5%</u>
Totals	13,023	100.0%	3,145,585	100.0%

2000 Census				
0-14	2,650	18.7%	732,907	21.2%
15-19	965	6.8%	269,373	7.8%
20-24	791	5.6%	247,165	7.2%
25-44	3,843	27.2%	975,169	28.3%
45-64	3,279	23.2%	770,090	22.3%
65+	2,626	18.6%	455,950	13.2%
Totals	14,154	100.0%	3,450,654	100.0%

2008 Estimates				
0-14	2,036	16.3%	753,870	20.7%
15-19	824	6.6%	251,880	6.9%
20-24	1,066	8.5%	270,201	7.4%
25-44	3,768	30.2%	957,085	26.3%
45-64	2,916	23.4%	918,688	25.2%
65+	1,865	14.9%	490,637	13.5%
Totals	12,475	100.0%	3,642,361	100.0%

SOURCE: U.S. Census Bureau, Census data for 1990 and 2000, estimated population for 2008 (www.census.gov [November 2009]).

Table6
Race and Ethnic Groups -
for Population Numbers and Percent of Total Population
Hughes County and the State of Oklahoma

Race/Ethnic Groups	Hughes County		State of Oklahoma	
	Number	Percent	Number	Percent
1990 Census				
White	10,283	79.0%	2,583,512	82.1%
Black	381	2.9%	233,801	7.4%
Native American ¹	2,205	16.9%	252,420	8.0%
Other ²	18	0.1%	75,852	2.4%
Two or more Races ³	n/a	n/a	n/a	n/a
Hispanic Origin ⁴	136	1.0%	86,160	2.7%
<hr/>				
2000 Census				
White	10,164	71.8%	2,721,554	78.9%
Black	632	4.5%	264,235	7.7%
Native American ¹	2,242	15.8%	275,558	8.0%
Other ²	35	0.2%	50,686	1.5%
Two or more Races ³	728	5.1%	138,621	4.0%
Hispanic Origin ⁴	353	2.5%	179,304	5.2%
<hr/>				
2008 Estimates				
White	9,405	69.0%	2,600,115	71.4%
Black	649	4.8%	280,290	7.7%
Native American ¹	2,250	16.5%	278,659	7.7%
Other ²	37	0.3%	63,856	1.8%
Two or more Races ³	816	6.0%	140,821	3.9%
Hispanic Origin ⁴	468	3.4%	278,620	7.6%

SOURCE: U.S. Census Bureau, Census data for 1990 and 2000, estimated population for 2008 (www.census.gov [November 2009]).

¹ Native American includes American Indians and Alaska Natives.

² Other is defined as Asian Americans, Native Hawaiians, Pacific Islanders and all others.

³ Two or more races indicate a person is included in more than one race group.

⁴ Hispanic population is not a race group but rather a description of ethnic origin; Hispanics are included in the five race groups.

n/a - Not available; 1990 census did not report this category

The Direct Economic Activities

The health sector creates employment and payroll impacts, which are important direct economic activities for the East Central Oklahoma Family Health Center service area. The health sector is divided into the following six components:

- Hospital
- Physicians, Dentists, and Other Medical Professionals
- Nursing and Protective Care
- Home Health
- Pharmacies
- Other Medical and Health Services

The health sector in the East Central Oklahoma Family Health Center medical service area employs 60 full-time and part-time employees and has an estimated payroll of \$2,718,642 (**Table 7**). The health sector in Wetumka is made up of one health clinic, one home health service, one EMS unit (in Horntown), one mental health service, and one pharmacy.

The Physicians, Dentists, and Other Medical Professionals component employs 17 total full-time and part-time employees with an estimated annual payroll of \$960,659 (including benefits¹). The Home Health, Other Medical and Health Services and Pharmacies component, which includes one home health service, one EMS unit, one mental health service, and one pharmacy employs 43 total full-time and part-time employees and has an estimated annual payroll of \$1,757,983.

The health sector is vitally important as both a community employer and a source of income to the community's economy. As demonstrated in **Table 7**, the health sector employs a large number of residents.

¹ The ratios for benefits are derived from the 2002 Economic Census Data-Oklahoma Health Care and Social Assistance by industry, U.S. Census Bureau.

Table 7
Direct Economic Activities of the Health Sector
in the East Central Oklahoma Family Health Center Medical Service Area

Component	Full-Time & Part-Time Employment	Total Payroll with Benefits
Physicians, Dentists, & Other Medical Professionals Includes East Central Oklahoma Family Health Center	17	\$960,659
Home Health/Other Medical & Health Services/Pharmacies One Home Health Service, One EMS Unit, One Mental Health Service, and One Pharmacy	<u>43</u>	<u>\$1,757,983</u>
Totals	<u>60</u>	<u>\$2,718,642</u>

SOURCE: Local survey and estimates from research.

These residents, along with businesses in the health sector, purchase a large amount of goods and services from businesses in the East Central Oklahoma Family Health Center medical service area. These impacts are referred to as secondary impacts or benefits to the economy. Before the secondary impacts of the health sector are discussed, the basic concepts of community economics will be reviewed.

Basic Concepts of Community Economics and Income and Employment Multipliers

Figure 3 illustrates the major flows of goods, services, and dollars of any economy. The foundations of a community's economy are those businesses that sell some or all of their goods and services to buyers outside of the community. Such a business is a basic industry. The two arrows in the upper right portion of

Figure 3 represent the flow of products out of, and dollars into, a community. To produce these goods and services for "export" outside the community, the basic industry purchases inputs from outside of the community (upper left portion of **Figure 3**), labor from the residents or "households" of the community (left side of **Figure 3**), and inputs from service industries located within the community (right side of

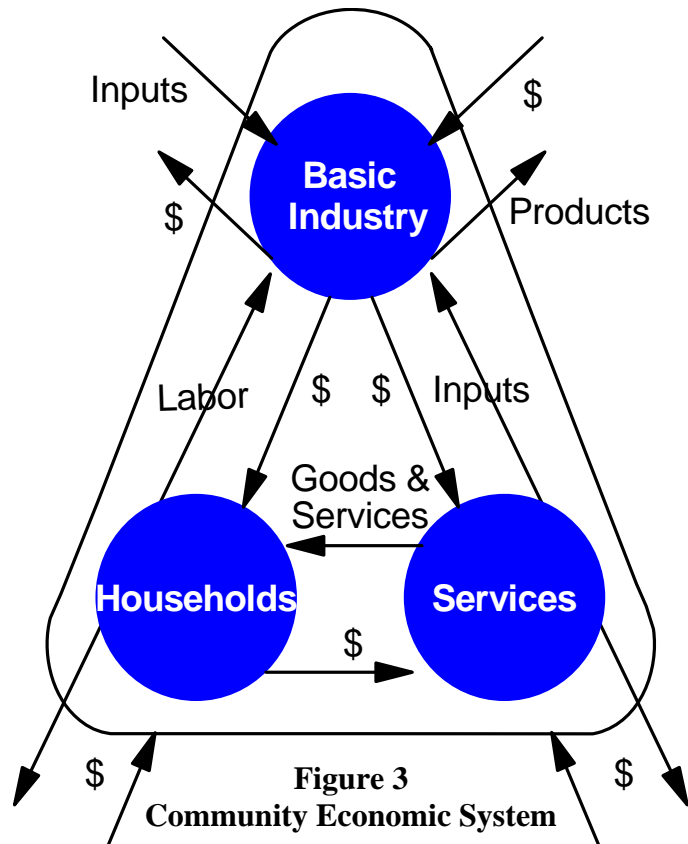


Figure 3). Households using their earnings to purchase goods and services from the community's service industries complete the flow of labor, goods, and services in the community (bottom of **Figure 3**). It is evident from the relationships illustrated in **Figure 3** that a change in any one segment of a community's economy will cause reverberations throughout the entire economic system of the community.

Consider, for instance, the closing of a hospital. The services section will no longer pay employees and the dollars flowing into households from these jobs will stop. Likewise, the hospital will not purchase goods from other businesses, and the dollar flow to other businesses will stop. This decreases income in the "households" segment of the economy. Since earnings would decrease, households decrease their purchases of goods and services from businesses within the "services" segment of the economy. This, in turn, decreases the amount of labor and input that these businesses' purchase. Thus, the change in the economic base works its way throughout the entire local economy. The total impact of a change in the economy consists of direct, indirect, and induced impacts. Direct impacts are the changes in the activities of the impacting industry, such as the closing of a hospital. The impacting business, such as the hospital, changes its purchase of inputs as a result of the direct impact. This produces an indirect impact in the business sectors.

Both the direct and indirect impacts change the flow of dollars to the community's households. The households alter their consumption accordingly. The effect of this change in household consumption upon businesses in a community is referred to as an induced impact. A measure is needed that yields the effects created by an increase or decrease in economic activity. In economics, this measure is called the multiplier effect. The multipliers used in this report are defined as:

“...the ratio between direct employment (or income), or that employment (or income) used by the industry initially experiencing a change in final demand and the direct, indirect, and induced employment (or income).”

An employment multiplier of 3.0 indicates that if one job is created by a new industry, 2.0 jobs are created in other sectors due to business (indirect) and household (induced) spending.

Secondary Impacts of the Health Sector on the Economy of East Central Oklahoma Family Health Center

Employment and income multipliers for the area have been calculated by use of the IMPLAN model. This model was developed by the U.S. Forest Service² and allows for the development of multipliers for various sectors of an economy. The employment multipliers for the components of the health sector are shown in **Table 8**, column 3. The employment multiplier for the Physicians, Dentists, and Other Medical Professionals component is 1.27. This indicates that for each job in that component, an additional 0.27 jobs are created throughout the area due to business (indirect) and household (induced) spending. The employment multipliers for the other health sector components are also shown in **Table 8**, column 3.

Applying the employment multipliers to the employment for each component yields an estimate of the impact on the economy (**Table 8**, columns 2, 3, and 4). For example, the component of Physicians, Dentists, and Other Medical Professionals has a direct employment of 17 full-time and part-time employees; applying the employment multiplier of 1.27 to the employment number of 17 brings the total employment impact of the hospital to 22 employees. The Home Health, Other Medical and Health Services, and Pharmacies component has 43 full-time and part-time employees and an employment multiplier of 1.37, for a total employment impact of 59. The total employment impact of the health sector in East Central Oklahoma Family Health Center medical service area is estimated to be 80 employees (**Table 8**, total of column 4).

² For complete details of model, see [1], [2], and [3].

Table 8
East Central Oklahoma Family Health Center Medical Service Area Health Sector Impact
on Employment and Income, and Retail Sales and Sales Tax

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Health Sectors	Employment			Income			Retail	1 Cent
	Employed	Multiplier	Impact	Income	Multiplier	Impact	Sales	Sales Tax
Physicians, Dentists, & Other Medical Professionals	17	1.27	22	\$960,659	1.14	\$1,095,151	\$219,687	\$2,197
Home/Health/Other Medical & Health Services/Pharmacies	<u>43</u>	<u>1.37</u>	<u>59</u>	<u>\$1,757,983</u>	<u>1.15</u>	<u>\$2,029,358</u>	<u>\$407,089</u>	<u>\$4,071</u>
Total	60		80	\$2,718,642		\$3,124,509	\$626,777	\$6,268

SOURCE: 2008 IMPLAN database, Minnesota IMPLAN Group, Inc.; Local data for employment, employee compensation and proprietor's income; income estimated based on state average incomes if local data not available

* Based on the ratio between Hughes County retail sales and income (20.06%) – from 2008 County Sales Tax Data and 2007 Personal Income Estimates from the Bureau of Economic Analysis.

Applying the income multipliers to the income (payroll including benefits) for each of the health sector components yields an estimate of each component's income impact on the East Central Oklahoma Family Health Center medical service area (**Table 8**, columns 5, 6, and 7). The income multiplier for the Physicians, Dentists, and Other Medical Professionals component is 1.14 (**Table 8**, column 6). This indicates that for each dollar in that component, an additional 0.14 dollars are created throughout the area due to business (indirect) and household (induced) spending. The Physicians, Dentists, and Other Medical Professionals component has a total payroll of \$960,659; applying the income multiplier of 1.14 brings the total Physicians, Dentists, and Other Medical Professionals component income impact to \$1,095,151. The income multipliers for the other health sector components are also shown in **Table 8**, column 6. The Home Health, Other Medical and Health Services, and Pharmacies component has a total payroll of \$1,757,983 and an income multiplier of 1.15 leading to a total income impact of \$2,029,353. The total income impact of the health sector on the economy of East Central Oklahoma Family Health Center medical service area is projected to be \$3,124,509 (**Table 8**, total of column 7).

Income also has an impact on retail sales, and the health sector has its own distinct effect on these retail sales. The local retail sales capture ratio is used to estimate the effect of the health sector on retail sales. This ratio indicates the percentage of personal income spent locally on items that generate local sales tax. If the county ratio between retail sales and income continues as it has in the past several years (around 20.06 percent), then direct and secondary retail sales generated by the health sector equals \$626,777 (**Table 8**, total of column 8). Each of the components' income impacts is utilized to determine the retail sales and a one-cent sales tax collection for each component. A one-cent sales tax collection is estimated to generate \$6,268 in the East Central Oklahoma Family Health Center medical service area economy as a result of the health sector income impact (**Table 8**, total of column 9). This estimate is probably low, as many health care employees tend to spend a larger portion of their income in local establishments that

collect sales tax. The bottom line is that the health sector in East Central Oklahoma Family Health Center medical service area not only contributes greatly to the medical health of the community, but also to the economic health of the community.

Summary

The economic impact of the health sector on the economy of East Central Oklahoma Family Health Center medical service area is tremendous. The health sector employs a large number of residents, similar to a large industrial firm. The secondary impact occurring in the community is extremely large and is a testament to the importance of the health sector. If the health sector increases or decreases in size, the medical health of the community, as well as the economic health of the community, is greatly affected. For the attraction of industrial firms, businesses, and retirees, it is crucial that the area have a quality health sector. The fact that a prosperous health sector also contributes to the economic health of the community is often overlooked.

References

- [1] IMPLAN Professional Version 2.0 Social Accounting & Impact Analysis Software – USER’S GUIDE, ANALYSIS GUIDE, DATA GUIDE, MIG, Minnesota IMPLAN Group, 2nd Edition, June 2000.
- [2] Palmer, Charles and Eric Siverts, IMPLAN ANALYSIS GUIDE. U.S. Department of Agriculture, Forest Service Land Management Planning Systems Section, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado, 1985.
- [3] Siverts, Eric, Charles Palmer, Ken Walters, and Greg Alward, IMPLAN USER'S GUIDE, U.S. Department of Agriculture, Forest Service, Systems Application Unit, Land Management Planning, Fort Collins, Colorado, 1983.