

The Economic Impact of the Health Sector on the Okeene Municipal Hospital Medical Service Area

Hospitals



Nursing Homes



Community



Physicians, etc.



Pharmacies

Other Services



**Oklahoma State Department of Health
Office of Rural Health**

**Oklahoma Cooperative Extension Service
Oklahoma State University**

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**Community Health Engagement Process documents available online at:
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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 Okeene Municipal Hospital medical service area. The specific objectives of this report are to:

1. Review economic trends of the health sector for the U.S. and Blaine County;
2. Identify population for the medical service area of Okeene Municipal Hospital;
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 Okeene Municipal Hospital 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.

Blaine County Economic Trends

Data relative to the health sector for Blaine 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 Blaine 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 Blaine County decreased 42 percent from 674 employees in 1999 to 391 employees in 2006 (**Table 2**). During the same time period, the total county employment also decreased 7.1 percent. County health services employment as a percent of total county employment decreased from 25.1 percent in 1999 to 15.7 percent in 2006, while the state health services employment as a percent of total state employment increased from 14.2 percent in 1999 to 15.1 percent in 2006. The county saw a decrease of 9.4 percent over this seven year period, while the state grew 0.9 percent.

The county health services payroll also saw significant decreases over time. Blaine County's health services payroll decreased 32.9 percent from about \$9.3 million in 1999 to about \$6.3 million in 2006; this compares to an increase of 18.8 percent for the total county payroll (**Table 2**). During this same time period, the state health services payroll increased from 14.1 percent to 15.1 percent. County health services payroll as a percent of total county payroll decreased from 18.1 percent in 1999 to 10.2 percent in 2006.

Table 2
Okeene Municipal Hospital
Employment and Payroll for County Business Patterns*
Blaine County and the State of Oklahoma

Based on NAICS ¹	Employment			
	Health Services Employment	Total County Employment	Hlth Svcs as a % of Total County Employment	Hlth Svcs as a % of Total State
1999	674	2,684	25.1%	14.2%
2000	646	2,742	23.6%	14.1%
2001	641	2,565	25.0%	14.3%
2002	349	2,293	15.2%	15.1%
2003	355	2,248	15.8%	15.2%
2004	308	2,382	12.9%	15.4%
2005	339	2,389	14.2%	15.4%
2006	391	2,493	15.7%	15.1%
% Change '99 - '06	-42.0%	-7.1%		

Based on NAICS ¹	Payroll			
	Health Services Payroll (\$1000s)	Total County Payroll (\$1000s)	Hlth Svcs as a % of Total County Payroll	Hlth Svcs as a % of Total State Payroll
1999	\$9,343	\$51,649	18.1%	14.1%
2000	\$9,290	\$55,929	16.6%	14.0%
2001	\$10,001	\$51,201	19.5%	14.5%
2002	\$6,069	\$48,689	12.5%	15.2%
2003	\$5,676	\$51,051	11.1%	15.2%
2004	\$5,624	\$54,298	10.4%	15.7%
2005	\$6,133	\$56,610	10.8%	15.5%
2006	\$6,268	\$61,362	10.2%	15.1%
% Change '99 - '06	-32.9%	18.8%		

Source: U.S. Census Bureau, County Business Patterns; 1999-2006 data (www.census.gov [February 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 Blaine County economy are illustrated in **Table 3**.

Based on Bureau of Economic Analysis data, the 2006 per capita income for Blaine County of \$20,408 is lower than the per capita income for the state of Oklahoma and the United States.

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

Indicator	County	State	U.S.
Total Personal Income (2006)	\$254,736,000	\$115,881,184,000	\$10,968,393,000,000
Per Capita Income (2006)	\$20,408	\$32,391	\$36,714
Employment (2007)	4,651	1,732,703	146,046,667
Unemployment (2007)	226	74,739	7,077,667
Unemployment Rate (2007)	4.6%	4.3%	4.6%
Employment (October 2008)	4,944	1,701,426	145,543,000
Unemployment (October 2008)	208	73,890	9,469,000
Unemployment Rate (October 2008)	4.0%	4.2%	6.1%
Percentage of People in Poverty (2007)	19.0%	15.8%	13.0%
Percentage of Under 18 in Poverty (2007)	24.2%	22.2%	18.0%
Transfer Dollars (2006)	\$65,253,000	\$19,836,764,000	\$1,612,935,000,000
Transfer Dollars as Percentage of Total Personal Income (2006)	25.6%	17.1%	14.7%

SOURCES: 2008 Bureau of Labor Statistics; 2008 Bureau of Economics Analysis; 2008 U.S. Census Bureau.

According to the Bureau of Labor Statistics, the unemployment rate for Blaine County was 4.6 percent for 2007, which was the higher than the state (4.3 percent) but even with the national (4.6 percent) rates. Moreover, in October 2008, the unemployment rate for Blaine County had decreased to 4.0 percent, which was lower than the state (4.2 percent) and the nation

(6.1 percent). Also, the number of people employed in Blaine County increased 6.3 percent from 2007 to October 2008, while the number of people unemployed decreased 8 percent during that same time period.

From the U. S. Census Bureau, the percent of people in poverty in Blaine County was 19 percent in 2007, as compared to 15.8 percent for the state and 13.0 percent nationally. The percentage of people under age 18 in poverty in 2007 followed similar trends, with Blaine County being slightly 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, Blaine County had 25.6 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.

Demographic Trends for the Okeene Municipal Hospital Medical Service Area and Blaine County

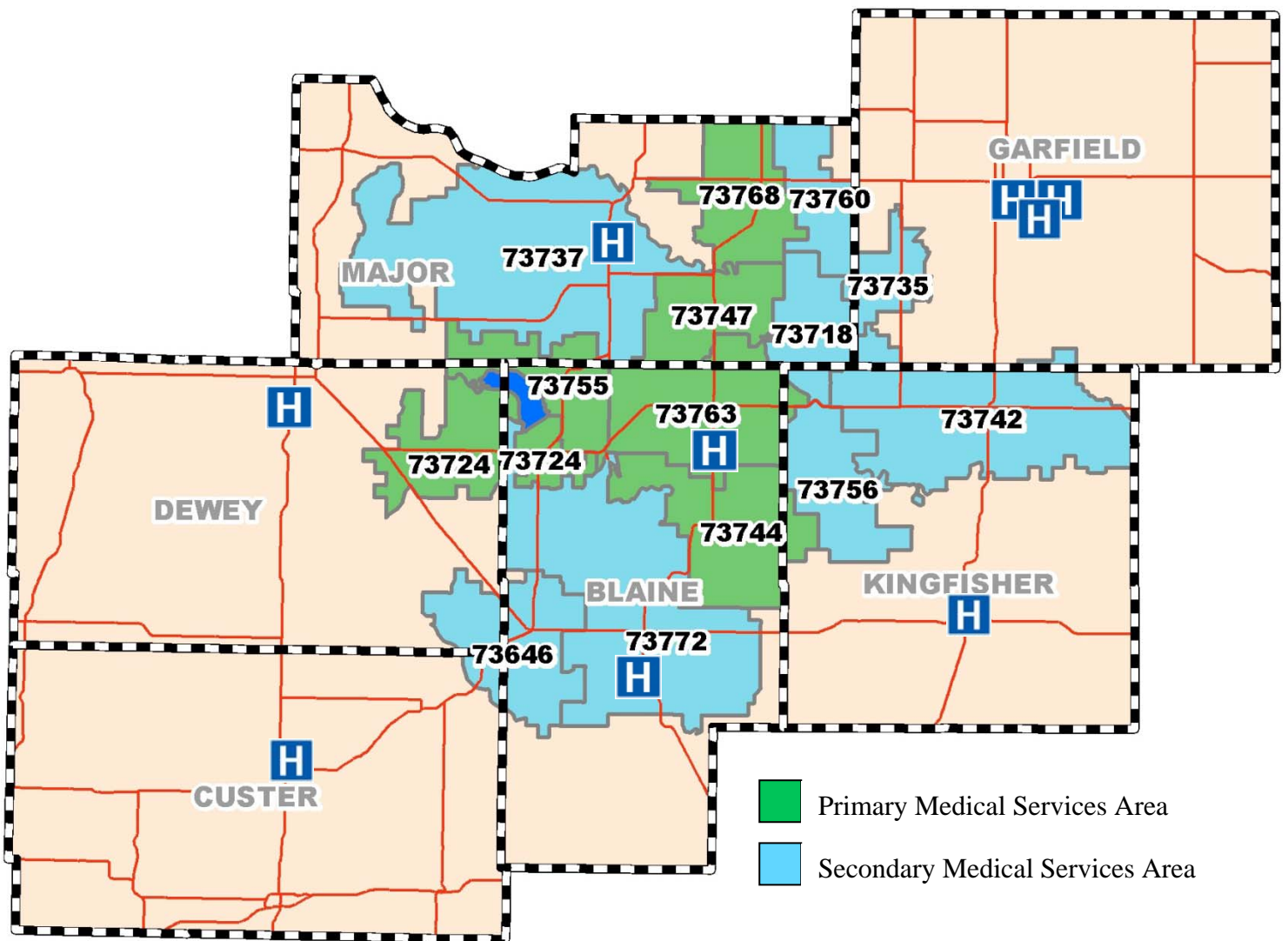
The Okeene Municipal Hospital medical service area is delineated in **Figure 2**. The primary medical service area is the immediate area surrounding Okeene including the zip code areas of Okeene, 73763; Canton, 73724; Hitchcock, 73744; Longdale, 73755; Isabella, 73747; Ringwood, 73768; and Southard, 73770. According to the U.S. Census Bureau, the 2000 census population of this primary medical service area was 5,712 (**Table 4a**). It must be noted that there was no zip code level population data available for Southard from the U.S Census Bureau. Okeene Municipal Hospital also serves a secondary medical service area, which consists of the zip code areas of Fairview, 73737; Watonga, 73772; Ames, 73718; Meno, 73760; Fay, 73646;

Drummond, 73735; Hennessey, 73742; and Loyal, 73756. According to the U.S. Census Bureau, the 2000 census population of this secondary medical service area was 15,189 (**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 3.1 percent from 2000 to 2008 and a projected 4.7 percent decrease from 2000 to 2013 (**Table 4a**).

Table 4b also shows population trends for the state of Oklahoma, Blaine County, and numerous cities in the primary and secondary medical service are of Okeene Municipal Hospital for the years 1990, 2000, and 2007. From 1990 to 2000, Blaine County had a population increase of 4.41 percent. The state experienced a population growth of 9.70 percent. During the same time period, Watonga experienced the largest increase of 36.68 percent. Meno followed with an increase of 25.81 percent. Many communities also reported a decline in population. Ames had the largest decrease in population of 25.75 percent. Okeene followed with a decline of 7.67 percent, and Fairview also reported a decrease of 6.91 percent. From 2000 to 2007, Blaine County saw another population increase of 4.17 percent. The state of Oklahoma at experienced an increase of 1.84 percent.

Figure 2
Okeene Municipal Hospital Medical Service Area



City	County	Hospital	No. of Beds
Okeene	Blaine	Okeene Municipal Hospital	17
Watonga	Blaine	Watonga Municipal Hospital	25
Clinton	Custer	INTEGRIS Clinton Regional Hospital	56
Seiling	Dewey	Seiling Municipal Hospital	18
Enid	Garfield	INTEGRIS Bass Baptist Health Center	183
Enid	Garfield	INTEGRIS Bass Pavilion	24
Enid	Garfield	St. Mary's Regional Medical Center	245
Kingfisher	Kingfisher	Kingfisher Regional Medical Center	25
Fairview	Major	Fairview Regional Medical Center	25

Watonga and Loyal both experienced an increase during this same time period. Watonga had the highest growth of 17.67 percent, and Loyal followed with a growth of 2.47 percent. During this same time period, Canton experienced the largest decrease in population of 7.28 percent. Fairview followed with a decline of 6.55 percent, and Okeene reported a decrease of 6.21 percent. It should also be noted that the population for the towns of Isabella, Southard, and Fay were unavailable in the Census 1990 data, Census 2000 data and Census 2007 estimates data.

Table 4a
Population of Okeene Municipal
Medical Service Area

Population by	City	Populations			
		2000 Census	2000 ESRI	2008 ESRI	2013 ESRI
<i>Primary Medical Service Area</i>					
73763	Okeene	1,609	1,644	1,550	1,514
73724	Canton	1,143	1,142	1,108	1,090
73744	Hitchcock	378	242	234	230
73755	Longdale	901	686	668	659
73747	Isabella	400	353	347	343
73768	Ringwood	1,281	1,327	1,320	1,307
73770	Southard	n/a	9	9	8
Total		5,712	5,403	5,236	5,151
	% Change from 2000 ESRI			-3.1%	-4.7%
<i>Secondary Medical Service Area</i>					
73737	Fairview	3,587	3,785	3,681	3,619
73772	Watonga	5,992	6,139	7,182	7,133
73718	Ames	497	508	499	492
73760	Meno	421	518	517	512
73646	Fay	60	110	107	106
73735	Drummond	726	791	764	759
73742	Hennessey	3,617	4,138	4,309	4,443
73756	Loyal	289	136	143	149
Total		15,189	16,125	17,202	17,213
	% Change from 2000 ESRI			6.7%	6.3%

Table 4b
Population Trends for Blaine County and the State of Oklahoma

	1990 Census	2000 Census	2007 Estimate	% Change 1990-2000	% Change 2000-2007
State of Oklahoma	3,145,585	3,450,654	3,617,316	<u>9.70%</u>	<u>4.83%</u>
Blaine County	11,470	11,976	12,475	<u>4.41%</u>	<u>4.17%</u>
<i>Population by City</i>					
Okeene	1,343	1,240	1,163	-7.67%	-6.21%
Canton	632	618	573	-2.22%	-7.28%
Hitchcock	139	141	137	1.44%	-2.84%
Longdale	281	310	305	10.32%	-1.61%
Isabella	n/a	n/a	n/a	n/a	n/a
Ringwood	394	424	410	7.61%	-3.30%
Southard	n/a	n/a	n/a	n/a	n/a
Fairview	2,936	2,733	2,554	-6.91%	-6.55%
Watonga	3,408	4,658	5,481	36.68%	17.67%
Ames	268	199	191	-25.75%	-4.02%
Meno	155	195	187	25.81%	-4.10%
Fay	n/a	n/a	n/a	n/a	n/a
Drummond	408	405	387	-0.74%	-4.44%
Hennessey	1,902	2,058	2,039	8.20%	-0.92%
Loyal	76	81	83	6.58%	2.47%
Cities Total	<u>11,674</u>	<u>13,062</u>	<u>13,319</u>		

SOURCE: Population data from the U.S. Bureau of Census, 1990, 2000; U. S. Bureau of the Census, Population Estimates Branch, 2007; 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 Blaine County.

Table 5 presents the breakdown by age group for Blaine County and the State of Oklahoma from the census years 1990 and 2000 and the 2007 census estimates. The lowest age group, age 0-14, experienced a decrease from 1990-2000 and 2007. The age group of 45-64, however, has seen a consistent increase over time. In Blaine County, those age 45-64 made up 19.5 percent of the total population in 1990, and this went up to 23.4 percent in 2007. This same trend holds true for the state of Oklahoma as well.

Table 6 shows the race and ethnic group percentages for Blaine County and the state of Oklahoma for the census years 1990 and 2000 and the 2007 census estimates. The state has experienced a significant increase in people of Hispanic origin, increasing from 2.7 percent in 1990 to 7.2 percent in 2007. Blaine County has experienced this same trend. In 1990, those of Hispanic origin made up 2.5 percent of the population. In 2000, this number increased to 6.6 percent. This number again increased in the 2007 estimates to 8.8 percent.

Table 5
Age Groups -
for Population Numbers and Percent of Total Population
Blaine County and the State of Oklahoma

Age Groups	Blaine County		State of Oklahoma	
	Number	Percent	Number	Percent
1990 Census				
0-14	2,682	23.4%	702,537	22.3%
15-19	774	6.7%	233,093	7.4%
20-24	578	5.0%	222,766	7.1%
25-44	2,984	26.0%	961,560	30.6%
45-64	2,240	19.5%	601,416	19.1%
65+	<u>2,212</u>	<u>19.3%</u>	<u>424,213</u>	<u>13.5%</u>
Totals	11,470	100.0%	3,145,585	100.0%
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2000 Census				
0-14	2,336	19.5%	732,907	21.2%
15-19	867	7.2%	269,373	7.8%
20-24	762	6.4%	247,165	7.2%
25-44	3,429	28.6%	975,169	28.3%
45-64	2,567	21.4%	770,090	22.3%
65+	<u>2,015</u>	<u>16.8%</u>	<u>455,950</u>	<u>13.2%</u>
Totals	11,976	100.0%	3,450,654	100.0%
<hr style="border-top: 1px dashed black;"/>				
2007 Estimates				
0-14	2,036	16.3%	744,594	20.6%
15-19	824	6.6%	253,894	7.0%
20-24	1,066	8.5%	272,799	7.5%
25-44	3,768	30.2%	959,592	26.5%
45-64	2,916	23.4%	906,297	25.1%
65+	<u>1,865</u>	<u>14.9%</u>	<u>480,140</u>	<u>13.3%</u>
Totals	12,475	100.0%	3,617,316	100.0%

SOURCE: U.S. Census Bureau, Census data for 1990 and 2000, estimated population for 2007 (www.census.gov [February 2009]).

Table 6
Race and Ethnic Groups -
for Population Numbers and Percent of Total Population
Blaine County and the State of Oklahoma

Race/Ethnic Groups	Blaine County		State of Oklahoma	
	Number	Percent	Number	Percent
1990 Census				
White	9,697	84.5%	2,583,512	82.1%
Black	483	4.2%	233,801	7.4%
Native American ¹	979	8.5%	252,420	8.0%
Other ²	24	0.2%	75,852	2.4%
Two or more Races ³	n/a	n/a	n/a	n/a
Hispanic Origin ⁴	287	2.5%	86,160	2.7%
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2000 Census				
White	8,822	73.7%	2,721,554	78.9%
Black	782	6.5%	264,235	7.7%
Native American ¹	1,018	8.5%	275,558	8.0%
Other ²	162	1.4%	50,686	1.5%
Two or more Races ³	399	3.3%	138,621	4.0%
Hispanic Origin ⁴	793	6.6%	179,304	5.2%
<hr style="border-top: 1px dashed black;"/>				
2007 Estimates				
White	8,433	67.6%	2,597,918	71.8%
Black	1,049	8.4%	278,417	7.7%
Native American ¹	1,078	8.6%	277,276	7.7%
Other ²	259	2.1%	67,087	1.9%
Two or more Races ³	563	4.5%	138,412	3.8%
Hispanic Origin ⁴	1,093	8.8%	261,635	7.2%

SOURCE: U.S. Census Bureau, Census data for 1990 and 2000, estimated population for 2007 (www.census.gov [February 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 Okeene Municipal Hospital 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 Okeene Hospital medical service area employs 130 full-time and part-time employees and has an estimated payroll of \$5,391,650 (**Table 7**). The health sector in Blaine County is fairly typical of counties of its size, with two hospitals (we will only be looking at Okeene Municipal Hospital), one dental office, one nursing home, one EMS service, one physical therapy office, and one pharmacy.

The Hospital component provides 70 full and part-time jobs with an estimated annual payroll of \$3,258,378 (including benefits¹). The Physicians, Dentists, and Other Medical Professionals/Nursing and Protective Care component employs 49 total full-time and part-time employees with an estimated annual payroll of \$1,629,922. The Other Medical and Health Services and Pharmacies component, which includes one EMS service, one physical therapy office, and one pharmacy employs 11 total full-time and part-time employees and has an estimated annual payroll of \$503,349.

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 Okeene Municipal Hospital Medical Service Area

Component	Full-Time & Part-Time Employment	Total Payroll with Benefits
Hospital Includes Okeene Municipal Hospital	70	\$3,258,378
Physicians, Dentists, & Other Medical Professionals/Nursing and Protective Care Includes one dental office and one nursing home	49	\$1,629,922
Other Medical & Health Services/Pharmacies One EMS service, one physical therapy office and one pharmacy	<u>11</u>	<u>\$503,349</u>
Totals	<u>130</u>	<u>\$5,391,650</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 Okeene Municipal Hospital 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

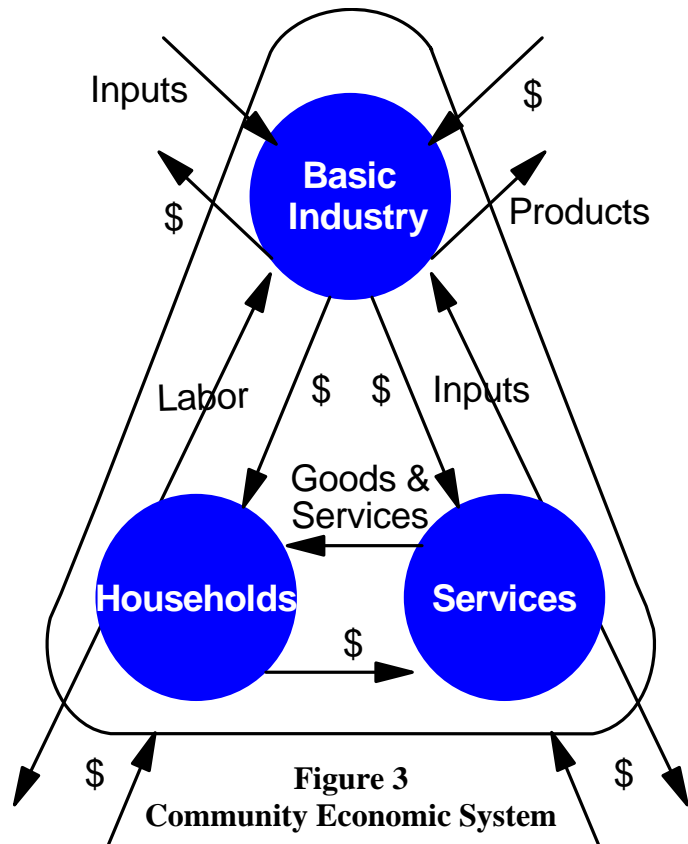


Figure 3). Households using their earnings to purchase goods and services from the community's service industries complete the flow of labor, goods, and services in the community (bottom of **Figure 3**). It is evident from the relationships illustrated in **Figure 3** that a change in any one segment 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 Okeene Municipal Hospital

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 Hospital component is 1.29. This indicates that for each job in that component, an additional 0.29 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 hospital has a direct employment of 70 full-time and part-time employees; applying the employment multiplier of 1.29 to the employment number of 70 brings the total employment impact of the hospital to 90 employees. The Physicians, Dentists, and Other Professionals/Nursing and Protective Care component employs 49 people; however, the total impact is 54 employees once the multiplier of 1.10 is applied. The Other Medical and Health Services and Pharmacies component has 11 full-time and part-time employees and an employment multiplier of 1.13, for a total employment impact of 12. The total employment impact of the health sector in Okeene Municipal Hospital medical service area is estimated to be 156 employees (**Table 8**, total of column 4).

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

Table 8
Okeene Municipal Hospital 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
Hospitals	70	1.29	90	\$3,258,378	1.18	\$3,834,854	\$880,866	\$8,809
Physicians, Dentists, & Other Medical Professionals/Nursing and Protective Care	49	1.10	54	\$1,629,922	1.19	\$1,939,607	\$445,528	\$4,455
Other Medical & Health Services/Pharmacies	<u>11</u>	<u>1.13</u>	<u>12</u>	<u>\$503,349</u>	<u>1.23</u>	<u>\$619,120</u>	<u>\$142,212</u>	<u>\$1,422</u>
Total	130		156	\$5,391,650		\$6,393,581	\$1,468,606	\$14,686

SOURCE: 2004 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 Blaine County retail sales and income (22.97%) – from 2006 County Sales Tax Data and 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 Okeene Municipal Hospital medical service area (**Table 8**, columns 5, 6, and 7). The income multiplier for the Hospital component is 1.18 (**Table 8**, column 6). This indicates that for each dollar in that component, an additional 0.18 dollars are created throughout the area due to business (indirect) and household (induced) spending. The Hospital component has a total payroll of \$3,258,378; applying the income multiplier of 1.18 brings the total Hospital component income impact to \$3,834,854. The income multipliers for the other health sector components are also shown in **Table 8**, column 6. The Physicians, Dentists, and Other Medical Professionals/Nursing and Protective Care component has a total income impact of \$1,629,922, based on the application of the income multiplier of 1.19 to the \$1,939,607 payroll. The Other Medical and Health Services and Pharmacies component has a total payroll of \$503,349 and an income multiplier of 1.23 leading to a total income impact of \$619,120. The total income impact of the health sector on the economy of Okeene Municipal Hospital medical service area is projected to be \$6,393,581 (**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 22.97 percent), then direct and secondary retail sales generated by the health sector equals \$1,468,606 (**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 \$14,686 in the Okeene Municipal Hospital 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 Okeene Municipal Hospital 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 Okeene Municipal Hospital 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.