

The Economic Impact of the Health Sector on the Mercy Health/Love County Hospital and Clinic Medical Service Area

Hospitals



Nursing Homes



Community



Physicians, etc.

Other Services



Pharmacies



**Oklahoma Office of Rural Health
OSU Center for Rural Health**

**Oklahoma Cooperative Extension Service
Oklahoma State University**

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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 Mercy Health/Love County Hospital and Clinic medical service area. The specific objectives of this report are to:

1. Review economic trends of the health sector for the U.S. and Love County;
2. Identify the population for the medical service area of Love County;
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 Mercy Health/Love County Hospital and Clinic 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 17.6 percent in 2009;
- Per capita health expenditures increased from \$356 in 1970 to \$8,086 in 2009;
- Employment in the health sector increased almost 344.0 percent from 1970 to 2009; and

- Annual increases in employment from 2003 to 2009 ranged from 1.9 percent to 2.7 percent.

In addition, the Bureau of Labor Statistics projects substantial increases in health care expenditures from 2010 through 2020. 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 18.6 percent of GDP by 2016 and increase to 19.8 percent of GDP in 2020. Per capita health care expenditures are projected to increase to \$11,099 in 2016 and to \$13,709 in 2020. Total health expenditures are projected to increase to \$4.6 trillion in 2020.

Table 1
United States Health Expenditures and Employment Data
1970-2009; Projected for 2010, 2013, 2016, 2019, & 2020

Year	Total Health Expenditures (\$Billions)	Per Capita Health Expenditures (\$)	Health as % of GDP (%)	Health Sector Employment (000)	Avg. Annual Increase in Employment (%)
1970	\$74.8	\$356	7.2%	3,052 ^a	
1980	255.7	1,110	9.2%	5,278 ^a	7.3%
1990	724.0	2,853	12.5%	7,814 ^a	4.8%
2000	1,378.0	4,878	13.8%	10,858 ^a	3.9%
2001	1,495.3	5,240	14.5%	11,188 ^a	3.0%
2002	1,637.0	5,682	15.4%	11,536 ^a	3.1%
2003	1,772.2	6,098	15.9%	11,817 ^b	N/A
2004	1,894.7	6,458	16.0%	12,055 ^b	2.0%
2005	2,021.0	6,827	16.0%	12,314 ^b	2.1%
2006	2,152.1	7,198	16.1%	12,602 ^b	2.3%
2007	2,283.5	7,561	16.2%	12,947 ^b	2.7%
2008	2,391.4	7,845	16.6%	13,290 ^b	2.6%
2009	2,486.3	8,086	17.6%	13,543 ^b	1.9%
Projections					
2010	2,584.2	8,327	17.6%		
2013	2,980.4	9,349	17.6%		
2016	3,632.0	11,099	18.6%		
2019	4,346.5	12,952	19.4%		
2020	4,638.4	13,709	19.8%		

SOURCES: Bureau of Labor Statistics (www.bls.gov [August 2011]); U.S. Department of Health & Human Services, Centers for Medicare & Medicaid Services, National Health Expenditures 1970-2009 and National Health Expenditure Projections 2010-2020 (<http://www.cms.hhs.gov/nationalhealthexpenddata> [August 2011]).

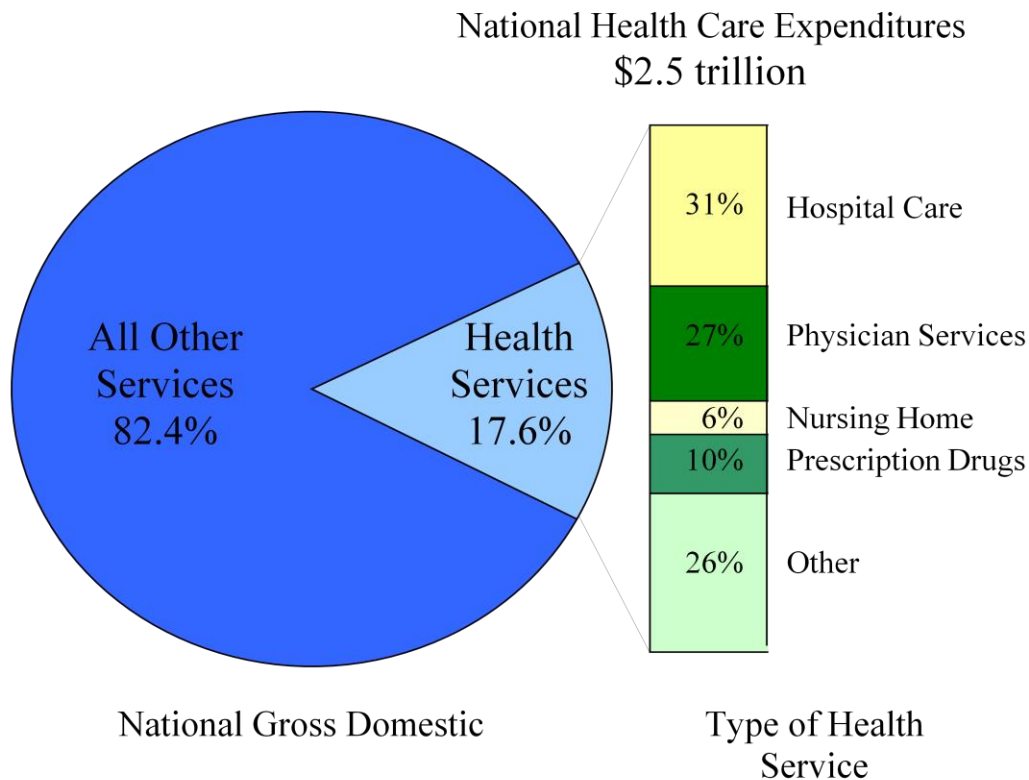
N/A - Not Available.

^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 that health services accounted for 17.6% of all national expenditures (as reported by the gross domestic product). This figure also breaks the amount spent on health services into various categories. 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 27.0 percent of the total. Community health centers, home health services, and other medical services are allocated in “other” category, which accounts for 26.0 percent.

Figure 1.
National Health Expenditures
as a Percent of Gross Domestic Product
and by Health Service Type, 2009



Love County Economic Trends

Data relative to the health sector for Love 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 shows employment and payroll for both health services and total county services for Love County. Further, it indicates the percentage of total employment and payroll that health services make up, at the county and state level. This table demonstrates how health services have changed over time. Health services employment in Love County increased 24.3 percent from 144 employees in 2002 to 179 employees in 2009 (**Table 2**). During the same time period, the total county employment increased 138.3 percent. County health services employment as a percent of total county employment decreased from 9.7 percent in 2002 to 5.0 percent in 2009, while the state health services employment as a percent of total state employment increased from 15.1 percent in 2002 to 16.0 percent in 2009. The county saw a substantial decrease of 47.8 percent over this eight year period, while the state grew 0.9 percent.

The county health services payroll experienced a slightly more dramatic trend compared to employment. Love County's health services payroll increased 31.9 percent from about \$2.5 million in 2002 to about \$3.3 million in 2009; this compares to an increase of 117.4 percent for the total county payroll (**Table 2**). State health services payroll as a percent of state payroll increased 10.6 percent from 2002 to 2009. County health services payroll as a percent of total county payroll decreased from 7.7 percent in 2002 to 4.7 percent in 2009. Although the percentage of health care's contribution to total county jobs and payroll has been declining, total health service jobs and payroll are still increasing – the data simply demonstrates that other jobs have been coming to the area as well.

Table 2
 Mercy Health/Love County Hospital and Clinic
 Employment and Payroll for County Business Patterns*
 Love County and the State of Oklahoma

Employment				
Based on NAICS ¹	Health Services Employment	Total County Employment	Hlth Svcs as a % of Total County Employment	Hlth Svcs as a % of Total State Employment
2002	144	1,489	9.7%	15.1%
2003	133	1,447	9.2%	15.2%
2004	142	1,195	11.9%	15.4%
2005	141	1,162	12.1%	15.4%
2006	144	1,257	11.5%	15.1%
2007	158	2,725	5.8%	15.3%
2008	177	2,720	6.5%	15.3%
2009	179	3,549	5.0%	16.0%
% Change '02-'09	24.3%	138.3%	-47.8%	6.4%

Payroll				
Based on NAICS ¹	Health Svcs Payroll (\$1000s)	Total County Payroll (\$1000s)	Hlth Svcs as a % of Total County Payroll	Hlth Svcs as a % of Total State Payroll
2002	\$2,491	\$32,412	7.7%	15.2%
2003	\$2,178	\$31,432	6.9%	15.2%
2004	\$2,282	\$27,634	8.3%	15.7%
2005	\$2,331	\$25,345	9.2%	15.5%
2006	\$2,421	\$27,651	8.8%	15.1%
2007	\$2,843	\$53,789	5.3%	15.3%
2008	\$3,122	\$63,835	4.9%	15.2%
2009	\$3,286	\$70,468	4.7%	16.8%
% Change '02-'09	31.9%	117.4%	-39.3%	10.6%

Source: U.S. Census Bureau, County Business Patterns; 2002-2009 data (www.census.gov [September 2011]).

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 Love County economy are illustrated in **Table 3**. Based on Bureau of Economic Analysis data, the 2009 per capita income for Love County of \$35,856 is slightly higher than the per capita income for the state of Oklahoma and the United States.

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

Indicator	County	State	U.S.
Total Personal Income (2009)	\$327,147,000	\$132,132,355,000	\$12,168,161,000,000
Per Capita Income (2009)	\$35,856	\$35,837	\$39,635
Employment (2010)	5,174	1,630,925	139,064,000
Unemployment (2010)	284	123,765	14,825,000
Unemployment Rate (2010)	5.2%	7.1%	9.6%
Employment (July 2011)*	5,302	1,643,823	140,384,000
Unemployment (July 2011)*	258	100,863	14,428,000
Unemployment Rate (July 2011)*	4.6%	5.8%	9.3%
Percentage of People in Poverty (2009)	14.1%	16.1%	14.3%
Percentage of Under 18 in Poverty (2009)	21.6%	22.1%	20.0%
Transfer Dollars (2009)	\$71,714,000	\$25,988,390,000	\$2,131,880,000,000
Transfer Dollars as Percentage of Total Personal Income (2009)	21.9%	19.7%	17.5%

*County and State estimates are considered preliminary

SOURCES: 2011 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 Love County was 5.2% percent for 2010, which was lower than the state (7.1 percent) rate and the national (9.6 percent) rate. Moreover, preliminary estimates for July 2011 indicate the unemployment rate for Love County had decreased to 4.6 percent, which was again lower than the state (5.8 percent)

and significantly lower than the nation (9.3 percent). Also, the number of people employed in Love County increased 2.5 percent from 2010 to July 2011. This is a common trend across the state. The number of people unemployed in Love County decreased 9.2 percent during that same time period.

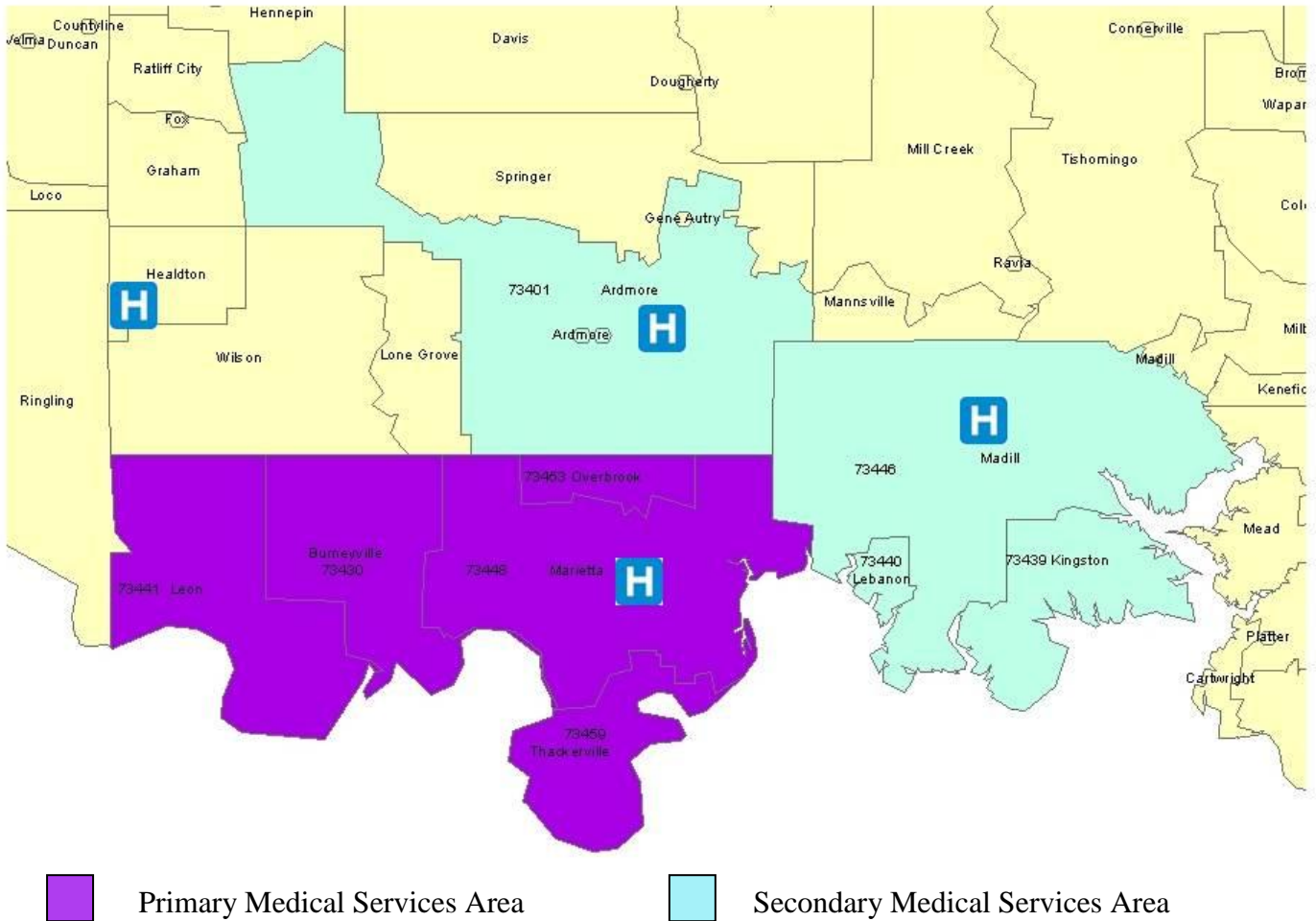
From the U. S. Census Bureau, the percent of people in poverty in Love County was 14.1 percent in 2009, as compared to 16.1 percent for the state and 14.3 percent nationally. The percentage of people under age 18 in poverty in 2009 shows Love County being right around the state average but higher than the national average. Another economic indicator is the percent of personal income that is from transfer payments. Based on Bureau of Economic Analysis data, Love County had 21.9 percent of total personal income from transfer payments, which is higher than 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 Mercy Health/Love County Hospital and Clinic Medical Service Area and Love County

The Mercy Health/Love County Hospital and Clinic medical service area is delineated in **Figure 3**, which also shows the location of nearby hospitals. The primary medical service area is the immediate area surrounding the hospital including the towns of Marietta, Thackerville, Leon and the remainder of Love County. According to the U.S. Census Bureau, the 2000 Census population of this primary medical service area was 8,831 (**Table 4a**). This area experienced an increase in population to 9,423 for the 2010 Census population (an increase of 6.7 percent). Mercy Health/Love County Hospital and Clinic also serves a secondary medical service area, which consists of the towns of Ardmore in Carter County and Madill and Kingston in Marshall County. According to the U.S. Census Bureau, the 2000 Census population of this secondary medical service area was 28,511 (**Table 4a**). The secondary medical services area also experienced an increase from the 2000 census to the 2010. The 2010 Census reflects a population of 29,654 for this area (an increase of 4.01 percent).

Table 4b also shows population trends for the state of Oklahoma and Love County for the years 1990, 2000, and 2010. From 1990 to 2000, Love County had a population increase of 13.39 percent, which is greater the state's rate of 9.70 percent. From 2000 to 2010, Love County saw a population increase of 6.70 percent, while the state also saw a positive increase of 8.71 percent.

Figure 3. Mercy Health/Love County Hospital and Clinic
Primary and Secondary Medical Services Area



City	County	Hospital	No. of Beds
Marietta	Love	Mercy Health / Love County	25
Ardmore	Carter	Mercy Memorial Health Center	166
Healdton	Carter	Healdton Municipal Hospital	25
Madill	Marshall	INTEGRIS Marshall County Medical Center	25

Table 4a
Population of Mercy Health/Love County Hospital and Clinic
Medical Service Area

Population by Place	Populations			% Change 1990-2000	% Change 2000-2010
	1990 Census	2000 Census	2010 Census		
<i>Primary Medical Service Area</i>					
Marietta	2,430	2,445	2,626	0.62%	7.40%
Thackerville	290	404	445	39.31%	10.15%
Leon	101	96	91	-4.95%	-5.21%
Rest of County	4,967	5,886	6,261	18.50%	6.37%
Total	7,788	8,831	9,423	13.39%	6.70%
<i>Secondary Medical Service Area</i>					
Ardmore	23,079	23,711	24,283	2.74%	2.41%
Madill	3,069	3,410	3,770	11.11%	10.56%
Kingston	1,237	1,390	1,601	12.37%	15.18%
Total	27,385	28,511	29,654	4.11%	4.01%

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

	1990 Population	2000 Population	2010 Population	% Change 1990-2000	% Change 2000-2010
State of Oklahoma	3,145,585	3,450,654	3,751,351	<u>9.70%</u>	<u>8.71%</u>
Love County	7,788	8,831	9,423	<u>13.39%</u>	<u>6.70%</u>
				-	

SOURCE: Population data from the U.S. Bureau of Census, 1990, 2000, 2010.

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

Table 5 presents the breakdown by age group for Love County and the State of Oklahoma from the census years 2000 and 2010. The lowest age group, age 0-14, experienced a slight increase from 2000-2010, whereas the next age group, 15-19 experienced a decrease. The age group of 45-64 has seen a steady increase from 2000-2010. In Love County, those aged 45-64 made up 25.7% percent of the total population in 2000, and this went up to 27.7 percent in 2010. This same trend holds true for the state of Oklahoma as well. However, it is interesting to note that the 65+ age group made up 17.2% of the 2010 total population in Love County compared to 13.5% of the total state population in that year. This represents a common trend in rural areas.

Table 6 shows the race and ethnic group percentages for Love County and the state of Oklahoma for the census years 2000 and 2010. The state has experienced a significant increase in people of Hispanic origin, increasing from 5.2 percent in 2000 to 8.9 percent in 2010. Love County has experienced this same trend. In 2000, those of Hispanic origin made up 6.6 percent of the population. In 2010, this number increased to 10.6 percent.

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

Age Groups	Love County		State of Oklahoma	
	Number	Percent	Number	Percent
2000 Census				
0-14	1,816	20.6%	732,907	21.2%
15-19	657	7.4%	269,373	7.8%
20-24	413	4.7%	247,165	7.2%
25-44	2,246	25.4%	975,169	28.3%
45-64	2,271	25.7%	770,090	22.3%
65+	<u>1,428</u>	<u>16.2%</u>	<u>455,950</u>	<u>13.2%</u>
Totals	<u>8,831</u>	<u>100.0%</u>	<u>3,450,654</u>	<u>100.0%</u>

2010 Census				
0-14	1,914	20.3%	777,126	20.7%
15-19	580	6.2%	264,484	7.1%
20-24	485	5.1%	269,242	7.2%
25-44	2,219	23.5%	967,692	25.8%
45-64	2,607	27.7%	966,093	25.8%
65+	<u>1,618</u>	<u>17.2%</u>	<u>506,714</u>	<u>13.5%</u>
Totals	<u>9,423</u>	<u>100.0%</u>	<u>3,751,351</u>	<u>100.0%</u>

SOURCE: U.S. Census Bureau, Census data for 2000, and 2010 (www.census.gov [November 2011]).

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

Race/Ethnic Groups	Love County		State of Oklahoma	
	Number	Percent	Number	Percent
2000 Census				
White	7,431	78.6%	2,556,368	74.1%
Black	193	2.0%	257,981	7.5%
Native American ¹	566	6.0%	266,158	7.7%
Other ²	340	3.6%	50,594	1.5%
Two or more Races ³	301	3.2%	140,249	4.1%
Hispanic Origin ⁴	619	6.6%	179,304	5.2%
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2010 Census				
White	7,426	70.5%	2,575,381	68.7%
Black	168	1.6%	272,071	7.3%
Native American ¹	586	5.6%	308,733	8.2%
Other ²	781	7.4%	71,085	1.9%
Two or more Races ³	462	4.4%	192,074	5.1%
Hispanic Origin ⁴	1,113	10.6%	332,007	8.9%

SOURCE: U.S. Census Bureau, Census data for 2000, and 2010 (www.census.gov [November 2011]).

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.

The Direct Economic Activities

The health sector creates employment and payroll impacts, which are important direct economic activities for the Mercy Health/Love County Hospital and Clinic medical service area.

The health sector is divided into the following six components:

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

The health sector in Marietta and Love County employs 219 full-time and part-time employees and has an estimated payroll of \$11,846,792 (**Table 7**). The health sector in Love County is comparable to other counties of its size, with one hospital, one mid-level physician office, one dental office, one optometrist office, one nursing home, one county health office and two pharmacies.

The Hospital component provides 135 full and part-time jobs with an estimated annual payroll of \$8,441,844 (including benefits¹). The Physicians, Dentists, and Other Medical Professionals sector employs 10 total full and part-time employees with an estimated payroll of \$781,505. The Nursing and Protective Care component employs 59 total full-time and part-time employees with an estimated annual payroll of \$1,787,694. The Other Health Services & Pharmacies component which includes one county health office and two pharmacies employs 15 total full-time and part-time employees and has an estimated annual payroll of \$835,748.

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.

Table 7
Direct Economic Activities of the Health Sector
in the Mercy Health/Love County Hospital and Clinic Medical Service Area

Component	Full-Time & Part-Time Employment	Total Payroll with Benefits
Hospital Includes Mercy Health/Love County Hospital and Clinic and specialties	135	\$8,441,844
Physicians, Dentists, & Other Medical Professionals Includes one mid-level physician office, one dental office, and one optometrist office	10	\$781,505
Nursing and Protective Care Includes one nursing home	59	\$1,787,694
Other Health Services & Pharmacies Includes one county health office and two pharmacies	15	\$835,748
Totals	<u>219</u>	<u>\$11,846,792</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 Mercy Health/Love County Hospital and Clinic 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 4 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 4 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 4**), labor from the residents or "households" of the community (left side of **Figure 4**), and inputs from service industries located within the community (right side of

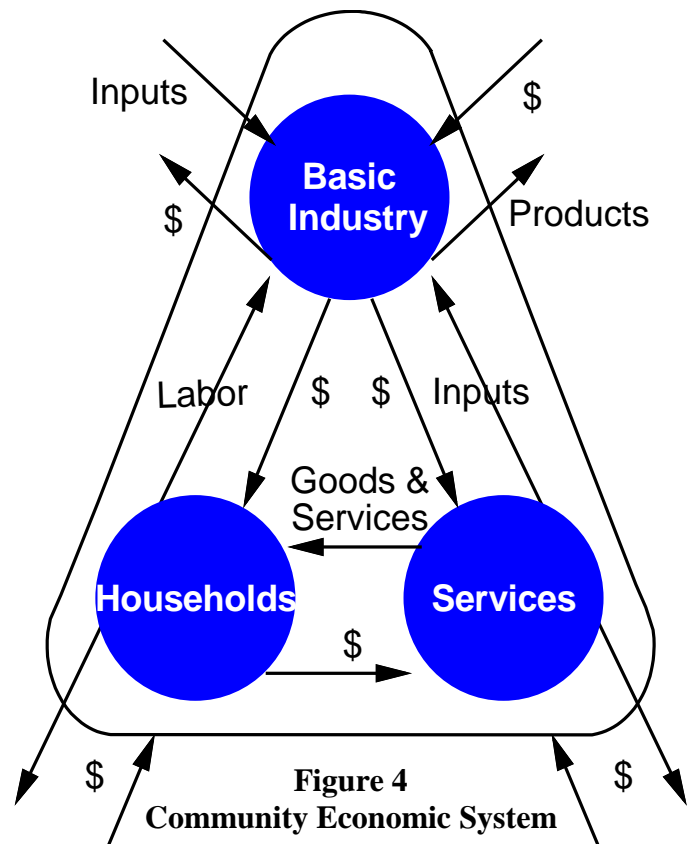


Figure 4). Households using their earnings to purchase goods and services from the community's service industries complete the flow of labor, goods, and services in the community (bottom of **Figure 4**). It is evident from the relationships illustrated in **Figure 4** that a change in any one segment 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 Mercy Health/Love County Hospital and Clinic Medical Service Area

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 1.24. This indicates that for each job in that component, an additional 0.24 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 135 full-time and part-time employees; applying the employment multiplier of 1.24 to the employment number of 135 brings the total employment impact of the hospital to 167 employees. The Physicians, Dentists, and Other Professionals component employs 10 people; however, the total impact is 12 employees once the multiplier of 1.17 is applied. The Nursing and Protective Care component has a total employment of 66 after the multiplier of 1.11 is applied to the direct employment of 59. The Other Medical and Health Services, Home Health & Pharmacies component has 15 full-time and part-time employees and an employment multiplier of 1.09, for a total employment impact of 16. The total employment impact of the health sector in the Mercy Health/Love County Hospital and Clinic medical service area is estimated to be 260 employees (**Table 8**, total of column 4). This suggests that an additional 14 employees are supported by the jobs in the local health care sector.

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

Table 8
Mercy Health/Love County Hospital and Clinic 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	135	1.24	167	\$8,441,844	1.14	\$9,660,205	\$1,003,038	\$10,030
Physicians, Dentists, & Other Medical Professionals	10	1.17	12	\$781,505	1.12	\$873,526	\$90,700	\$907
Nursing and Protective Care	59	1.11	66	\$1,787,694	1.10	\$1,961,966	\$203,715	\$2,037
Other Medical & Health Services & Pharmacies	<u>15</u>	<u>1.09</u>	<u>16</u>	<u>\$835,748</u>	<u>1.08</u>	<u>\$904,654</u>	<u>\$93,932</u>	<u>\$939</u>
Total	219		260	\$11,846,792		\$13,400,350	\$1,391,384	\$13,914

SOURCE: 2009 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 Love County retail sales and income (10.38%) – from 2009 County Sales Tax Data and 2009 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 Mercy Health/Love County Hospital and Clinic medical service area (**Table 8**, columns 5, 6, and 7). The income multiplier for the Hospital 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 Hospital component has a total payroll of \$8,441,844; applying the income multiplier of 1.14 brings the total Hospital component income impact to \$9,660,205. The income multipliers for the other health sector components are also shown in **Table 8**, column 6. The Physicians, Dentists, and Other Medical Professionals component has a total income impact of \$873,526 based on the application of the income multiplier of 1.12 to the \$781,505 payroll. The Other Medical & Health Services & Pharmacies component has a total payroll of \$835,748 and an income multiplier of 1.08 leading to a total income impact of \$904,654. The total income impact of the health sector on the economy of Mercy Health/Love County Hospital and Clinic medical service area is projected to be \$13,400,350 (**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 is currently (around 10.38 percent), then direct and secondary retail sales generated by the health sector equals \$1,391,384 (**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 \$13,914 in the Mercy Health/Love County Hospital and Clinic medical service area economy as a result of the health sector income impact (**Table 8**, total of column 9). Love County attracts shoppers, retail

activity, and potentially employees from outside of the county and these people are attracted to many of the amenities that are created through the multiplied health impact. The bottom line is that the health sector in the Mercy Health/Love County Hospital and Clinic 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 Mercy Health/Love County Hospital and Clinic medical service area is substantial. The health sector employs a large number of residents, similar to an industrial firm. The secondary impact occurring in the community is considerably 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.
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- [4] Brooks, L. and Whitacre, B. E., Critical Access Hospitals and Retail Activity: An Empirical Analysis in Oklahoma. *The Journal of Rural Health*, no. doi: 10.1111/j.1748-0361.2010.00336.x