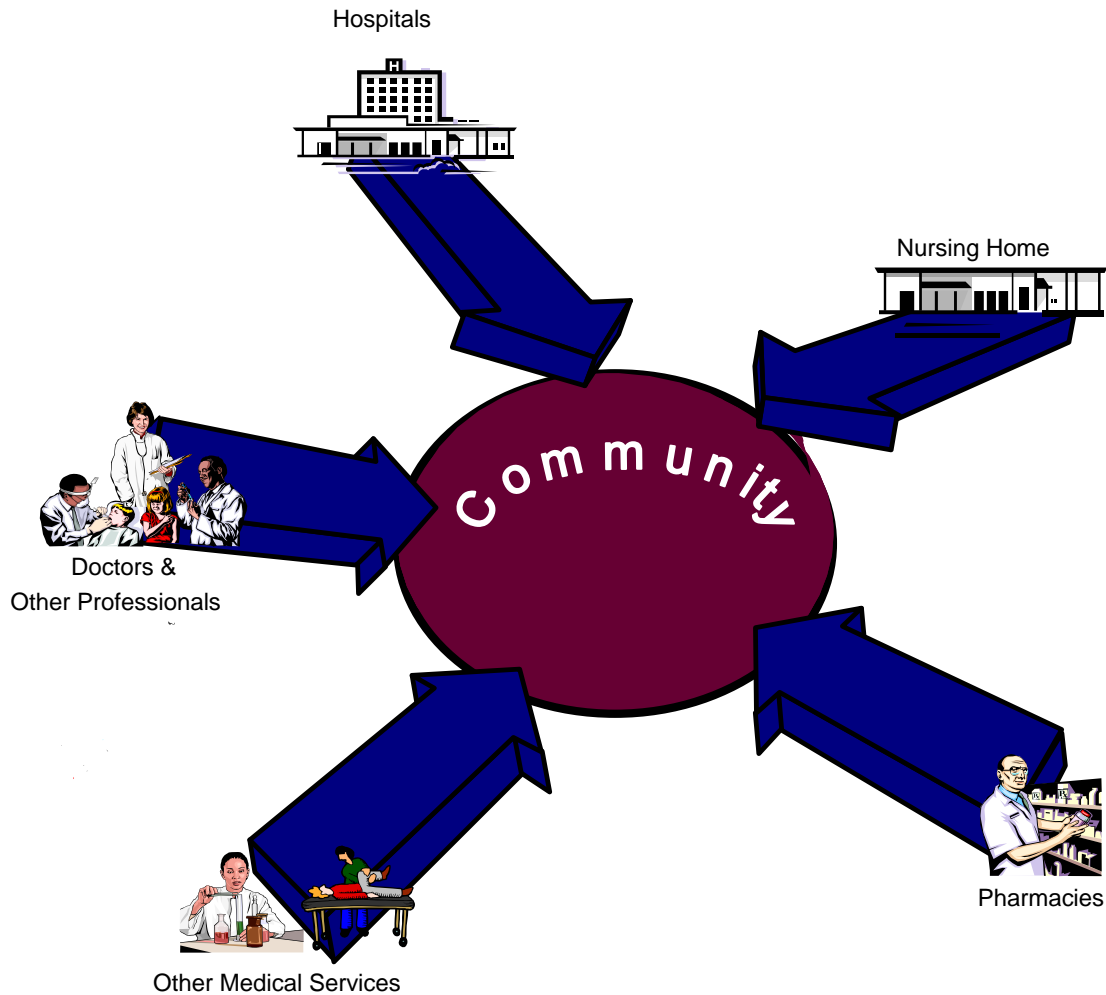


# The Economic Impact of the Health Sector on the Perry Memorial Hospital Medical Service Area



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

**Oklahoma Cooperative Extension Services  
Oklahoma State University**

March 2007

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**Community Health Engagement Process documents available online at:  
[www.okruralhealthworks.org](http://www.okruralhealthworks.org)**

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## **The Economic Impact of the Health Sector on the Perry Memorial Hospital Medical Service Area**

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 Perry Memorial 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 Noble County;
2. Identify population for the medical service area of Perry Memorial 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 Perry Memorial Hospital medical service area.

No recommendations will be made in this report.

### **National Trends in Health Care**

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 expenditure and employment data for the United States. Several highlights from the national data are:

**Table 1**  
**United States Health Expenditures and Employment Data**  
**1970-2004; Projected for 2005, 2010 & 2015**

United States Data									
Year	Total Health Expenditures (\$\$ Billions)	Per Capita Health Expenditure (\$\$)	Health Expenditures as % of GDP (%)	Health Sector Employment (000)	Ave. Annual Employment Increase (%)	Health & Social Asst. Employment (000)	Ave. Yrly Employment Increase (%)		
1970	\$75.1	\$357	7.2%	3,052					
1980	254.9	1,106	9.1%	5,278	7.3%				Emp.
1990	717.3	2,821	12.4%	7,814	4.8%	N/A	N/A		Based
2000	1,358.5	4,729	13.8%	10,103	2.9%	N/A	N/A		on
2001	1,474.2	5,079	14.6%	10,381	2.8%	N/A	N/A		SIC <sup>1</sup>
2002	1,607.9	5,485	15.4%	10,673	2.8%	N/A	N/A		
2003	1,740.6	5,879	15.9%	N/A	N/A	14,759	N/A		Emp.
2004	1,877.6	6,280	16.0%	N/A	N/A	15,052	2.0%		Based
Projections									
2005	2,016.0	6,683	16.2%						on
2010	2,879.4	9,148	18.0%						NAICS <sup>2</sup>
2015	4,031.7	12,320	20.0%						

SOURCES: Bureau of Labor Statistics; Bureau of Economic Analysis; Centers for Medicare & Medicaid Services, National Health Expenditures 1970-2004 and National Health Expenditure Projections 2005-2015, website:

<http://www.cms.hhs.gov/NationalHealthExpendData>, data as of February 2006

N/A - Not Available

<sup>1</sup> Based on Standard Industrial Classification (SIC) codes for health sector employment and health & social assistance employment.

<sup>2</sup> Based on North American Industrial Classification System (NAICS) for health and social assistance employment.

- In 1970, health care services as a share of the national gross domestic product (GDP) were 7.2 percent. This increased to 16.0 percent in 2004;
- Per capita health expenditures increased from \$357 in 1970 to \$6,280 in 2004; and
- Employment in the health sector increased 250 percent from 1970 to 2002.

In addition, the Center for Medicare and Medicaid Services, National Health Expenditures, projects substantial increases in health care expenditures from 2004 through 2015; in fact, it is predicted that health care expenditures will account for 18.0 percent of GDP by 2010 and increase up to 20.0 percent of GDP in 2015. Per capita health care expenditures are projected to increase to almost \$9,148 in 2010 and up to \$12,320 in 2015. Total health expenditures are projected to increase to over \$4 trillion in 2015. Of the 16.0 percent of GDP or \$1.9 trillion spent on health care in 2004, 30 percent of the expenditures were for hospital care and another 21 percent were for physician services (**Figure 1**).

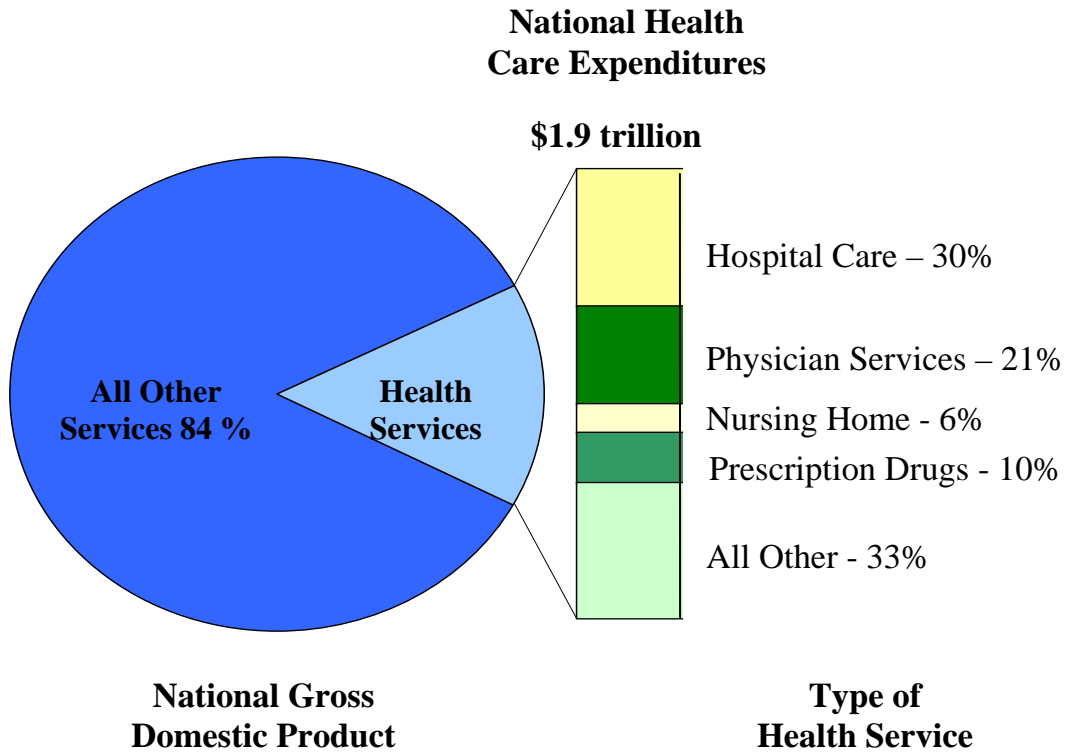
### **Noble County Trends in Health Care**

Noble County is located in north central Oklahoma (**Figure 2**). Data relative to the health sector for the Noble County are provided in **Tables 2** through **4**. Two secondary data sources are utilized to show trends in the health sector which illustrate the magnitude of the importance of the health sector on the Noble County economy. These sources are based on different data definitions and thus cannot be directly compared with each other. However, both sources demonstrate the importance of the health sector and hospitals on the Noble County economy.

Data in **Table 2** are from the U. S. Census Bureau, County Business Patterns, to illustrate how the health sector is growing over time in Noble County. The classification system for all industries changed from the Standard Industrial Classification (SIC) (1987 – 1997) to the North American Industry Classification System (NAICS) (1998 – 2004).

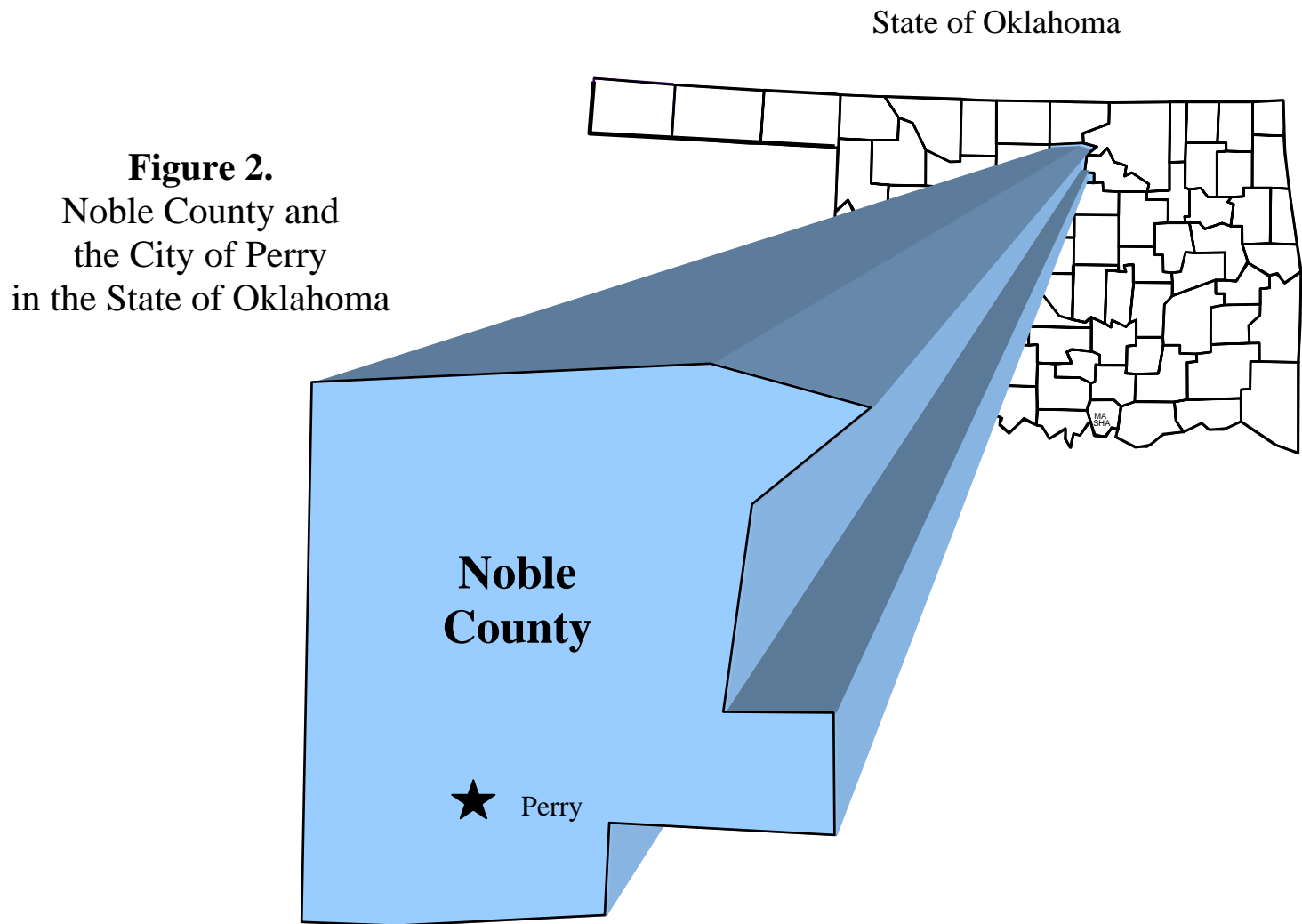
**Figure 1.**

**National Health Expenditures  
as a Percent of GDP and by Health Service Type, 2004**



SOURCE: National Health Expenditures 1970-2004; website:

<http://www.cms.hhs.gov/NationalHealthExpendData>, data as of February 2006



**Table 2**  
**Employment and Payroll for Noble County, Oklahoma**

	Employment			Payroll (1000s)			
	Health Services	% of Total	Total County	Health Services	% of Total	Total County	
Based on SIC <sup>1</sup>	1987	233	8.8%	2,652	\$2,394	4.9%	\$48,511
	1988	231	7.9%	2,939	\$2,451	5.1%	\$48,208
	1989	226	7.3%	3,086	\$2,609	5.1%	\$51,465
	1990	237	8.1%	2,944	\$2,791	4.7%	\$59,453
	1991	238	8.4%	2,822	\$2,973	5.7%	\$51,780
	1992	276	9.8%	2,805	\$3,396	6.6%	\$51,638
	1993	370	12.4%	2,974	\$5,124	8.1%	\$62,971
	1994	389	11.6%	3,344	\$5,557	7.8%	\$71,517
	1995	399	11.0%	3,615	\$5,816	7.8%	\$74,884
	1996	412	10.6%	3,874	\$6,214	8.0%	\$77,866
1997	417	12.1%	3,459	\$6,738	8.5%	\$79,464	
% Change from 1987 to 1997	79.0%		30.4%	181.5%		63.8%	
Based on NAICS <sup>2</sup>	1998	489	13.6%	3,606	\$7,363	8.5%	\$86,219
	1999	455	13.0%	3,498	\$7,405	7.3%	\$100,896
	2000	451	12.7%	3,563	\$7,555	6.8%	\$110,940
	2001	477	12.9%	3,693	\$8,225	8.7%	\$94,787
	2002	410	13.0%	3,155	\$9,114	10.8%	\$84,467
	2003	401	12.0%	3,344	\$8,099	9.8%	\$82,825
	2004	441	13.6%	3,254	\$8,552	8.6%	\$99,765
% Change from 1998 to 2004	-9.8%		-9.8%	16.1%		15.7%	

SOURCE: U.S. Census, County Business Patterns; 1987-1997 based upon SIC and 1998-2004 based upon NAICS.

<sup>1</sup> The major (SIC) group includes establishments primarily engaged in furnishing medical, surgical, and other health services to persons. Establishments of associations or groups, such as Health Maintenance Organizations (HMOs), primarily engaged in providing medical or other health services to members are included but those which limit their services to the provision of insurance against hospitalization or medical costs are classified in Insurance, Major Group 63. Hospices are also included in this major group and are classified according to the primary service provided.

<sup>2</sup> 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 are excluded for 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-charted credit unions, and hospitals).

From 1987 through 1997 under SIC, the health services sector employment grew 79.0 percent as compared to the total county employment, which increased by 30.4 percent. From 1998 through 2004 under NAICS, employment in health services in Noble County decreased 9.8 percent while employment in total county services also decreased 9.8 percent. Health services employment made up 8.8 percent of total county employment in 1987 and increased to 12.1 percent of total county employment in 1997. Health services employment was 13.6 percent of total county employment in 1998 and remained the same in 2004. From 1987 to 1997 under SIC, the health services payroll increased 181.5 percent and total county payroll increased by 63.8 percent. From 1998 through 2004 under NAICS, health services payroll increased 16.1 percent while total county payroll increased by 15.7 percent. Interestingly, although employment in the Noble County health sector declined between 1998 and 2004, the amount of payroll generated by this sector increased dramatically. The health services payroll generated \$7.3 million in total county payroll in 1998 and increased to almost \$8.6 million in total county payroll in 2004.

Data in **Tables 3** and **4** are from the Regional Economic Information System, Bureau of Economic Analysis, for the year 2004 and are based on the North American Industry Classification System (NAICS). This data source has a broader definition of employment than does the U. S. Census Bureau County Business Patterns. The purpose of **Tables 3** and **4** is to demonstrate the importance of the health sector as compared to the entire economy. In 2004, the health care sector (which includes hospitals) accounted for 359 full-time and part-time employees or 8.4 percent of the private employment in Noble County (**Table 3**). This is a little lower than the state average for the health care sector (11.8 percent). The health care sector was the second largest sector of the private employment. Retail Trade was the largest private

**Table 3**  
**Full-Time and Part-Time Employment by Type of Employment and by Major Industry**  
**(NAICS)<sup>1</sup> for Noble County and the State of Oklahoma 2004**

Employment Categories	Noble County			State of Oklahoma		
	No. of Jobs	% of Total	% of Private	No. of Jobs	% of Total	% of Private
<b>Total FT &amp; PT</b>	6,319	<u>100.0%</u>		2,027,801	<u>100.0%</u>	
Wage & salary	4,146	65.6%		1,555,392	76.7%	
Proprietors'	2,173	<u>34.4%</u>		472,409	<u>23.3%</u>	
Farm proprietors'	852	39.2%		84,373	17.9%	
Nonfarm proprietors' <sup>2</sup>	1,321	60.8%		388,036	82.1%	
<b>By Industry:</b>						
Farm	918	14.5%		94,583	4.7%	
Nonfarm	5,401	<u>85.5%</u>		1,933,218	<u>95.3%</u>	
Private	4,281	79.3%	<u>100.0%</u>	1,594,741	82.5%	<u>100.0%</u>
For, fshng, rel <sup>3</sup>	(D)		**	8,545		0.5%
Mining	(D)		**	64,623		4.1%
Utilities	(D)		**	10,964		0.7%
Construction	(D)		**	111,031		7.0%
Manufacturing	(D)		**	149,233		9.4%
Wholesale trade	87		2.0%	60,462		3.8%
Retail trade	469		11.0%	224,505		14.1%
Transp & wrhsng	(D)		**	57,139		3.6%
Information	29		0.7%	36,012		2.3%
Finance & ins	218		5.1%	81,418		5.1%
RE rental & leasing	116		2.7%	64,650		4.1%
Prof & techn svcs	(D)		**	96,291		6.0%
Mgmt of cos & enterp	0		0.0%	13,292		0.8%
Admin & waste svcs	(D)		**	123,828		7.8%
Educational svcs	17		0.4%	25,741		1.6%
<b>Hlth care &amp; soc assist</b>	<b>359</b>		<b>8.4%</b>	<b>188,799</b>		<b>11.8%</b>
Arts, entert, & rec	(D)		**	26,865		1.7%
Accomm & food svcs	(D)		**	127,906		8.0%
Other svcs, not pub admin	345		8.1%	123,437		7.7%
<i>Sum of (D) Categories<sup>4</sup></i>	<i>2,641</i>		<i>61.7%</i>			
Govt & govt enterprises	1,120	20.7%		338,477	17.5%	

SOURCE: 2006 Regional Economic Information System, Bureau of Economic Analysis, 2004 data.

<sup>1</sup> The estimates are based on the North American Industry Classification System (NAICS).

<sup>2</sup> Excludes limited partners.

<sup>3</sup> "Other" consists of the number of jobs held by U.S. residents employed by international organizations and foreign embassies and consulates in the U.S.

<sup>4</sup> All (D) categories have been totalled to show the total amount of missing data from private employment.

(D) Not shown to avoid disclosure of confidential information, but the estimates for this item are included in the

\*\* Due to nondisclosure of confidential data, no percentages are available.

**Table 4**  
**Personal Income, Earnings by Place of Work and by Industry (NAICS)<sup>1</sup>**  
**for Noble County and the State of Oklahoma, 2004**

Employment Categories	Noble County			State of Oklahoma		
	Income (\$1,000s)	% of Total	% of Private	Income (\$1,000s)	% of Total	% of Private
<b>Total Personal Income</b>	263,065	<u>100.0%</u>		98,095,384	<u>100.0%</u>	
Total earnings by place of work	175,860	<u>66.9%</u>		73,134,429	<u>74.6%</u>	
Wage & salary disbursements	126,242	71.8%		47,319,851	64.7%	
Proprietors' income <sup>2</sup>	10,377	5.9%		12,863,564	17.6%	
Other	39,241	18.5%		12,951,014	17.8%	
<b>Earnings by Industry</b>						
Total by industry	175,860	<u>100.0%</u>		73,134,429	<u>100.0%</u>	
Farm	836	0.5%		916,677	1.3%	
Nonfarm	175,024	<u>99.5%</u>		72,217,752	<u>98.7%</u>	
Private	137,204	78.4%	<u>100.0%</u>	56,528,967	78.3%	<u>100.0%</u>
For, fshng, rel <sup>3</sup>	(D)		**	176,877		0.3%
Mining	(D)		**	4,548,668		8.0%
Utilities	(D)		**	1,443,800		2.6%
Construction	(D)		**	3,532,651		6.2%
Manufacturing	(D)		**	10,456,904		18.5%
Wholesale trade	1,390		1.0%	2,937,524		5.2%
Retail trade	6,945		5.1%	5,096,142		9.0%
Transp & wrhsng	(D)		**	2,776,343		4.9%
Information	638		0.5%	1,906,942		3.4%
Finance & ins	4,757		3.5%	3,105,177		5.5%
RE rental & leasing	1,542		1.1%	1,372,199		2.4%
Prof & techn svcs	(D)		**	4,068,728		7.2%
Mgmt of cos & enterp	0		0.0%	887,556		1.6%
Admin & waste svcs	(D)		**	2,706,181		4.8%
Educational svcs	(L)		**	557,713		1.0%
<b>Hlth care &amp; soc assist</b>	<b>8,266</b>		<b>6.0%</b>	<b>6,681,824</b>		<b>11.8%</b>
Arts, entert, & rec	(D)		**	363,737		0.6%
Accomm & food svcs	(D)		**	1,690,314		3.0%
Other svcs, not pub admin	4,895		3.6%	2,219,687		3.9%
<i>Sum of (D) &amp; (L) Categories <sup>4</sup></i>	<i>108,771</i>		<i>79.3%</i>			
Govt & govt enterprises	37,820	21.6%	-	15,688,785	21.7%	

SOURCE: 2006 Regional Economic Information System, Bureau of Economic Analysis, 2004 data.

<sup>1</sup> The estimates are based on the North American Industry Classification System (NAICS).

<sup>2</sup> Excludes limited partners.

<sup>3</sup> "Other" consists of the number of jobs held by U.S. residents employed by international organizations and foreign embassies and consulates in the U.S.

<sup>4</sup> All (D) categories have been totalled to show the total amount of missing data from private employment.

(D) Not shown to avoid disclosure of confidential information, but estimates are included in totals.

(L) Less than \$50,000, but the estimates for this item are included in the totals.

\*\* Due to nondisclosure of confidential data, no percentages are available.

employer with 11.0 percent of the total private employment jobs. In 2004, the health care sector accounted for \$8.3 million in total earnings which was 6.0 percent of the total private earnings for the county (**Table 4**). The health sector was the largest earning sector. The state health care sector earnings accounted for 11.8 percent of the total private earnings in Oklahoma.

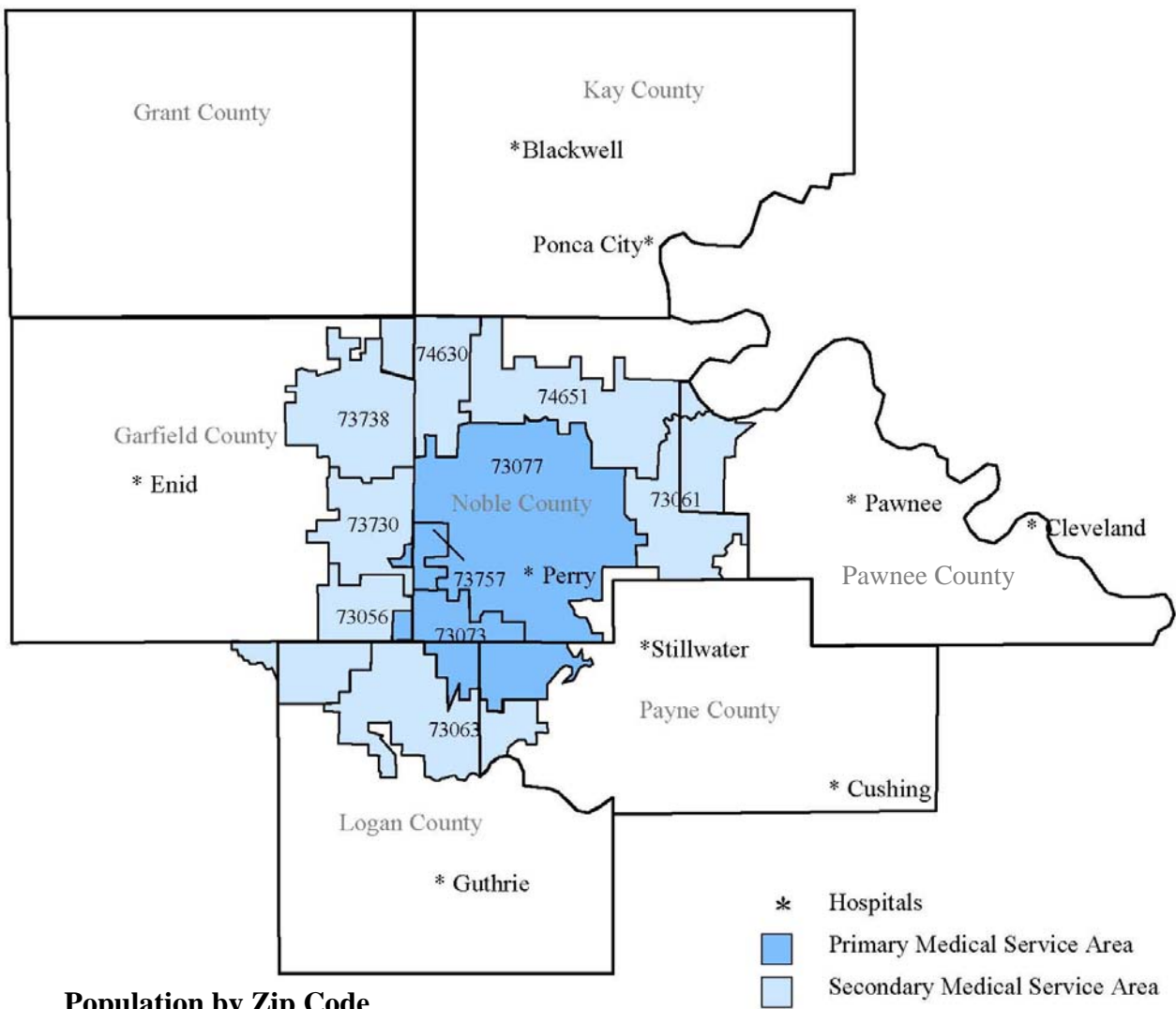
### **Perry Memorial Hospital - Medical Service Area Population**

The Perry Memorial Hospital medical service area is delineated in **Figure 3**. The primary medical service area is the immediate area surrounding Perry including the zip code areas of Perry, 73077; Orlando, 73073; and Lucien, 73757. According to the U.S. Census Bureau, the 2000 census population of this primary area was 7,898. The hospital located in Perry also draws patients from a secondary medical service area that includes the zip code areas of Morrison, 73061; Billings, 74630; Red Rock, 74651; and Mulhall, 73063. The population of the secondary medical service area was 3,476 based on the 2000 census. **Figure 3** also shows population trends for Noble and surrounding counties between 2000 and 2005. Noble County (along with several neighboring counties) experienced a population loss over this period while Pawnee, Payne, and Logan experienced population growth.

### **The Direct Economic Activities**

The health sector creates employment and payroll impacts, which are important direct economic activities for the Perry Memorial Hospital medical service area. The health sector is divided into the following three components:

- Hospital
- Physicians, Dentists, and Other Medical Professionals
- Other Medical and Health Services (includes nursing home, home health care, county health department, and pharmacies)



**Population by Zip Code**

<b>Zip Code</b>	<b>Name</b>	<b>2000 Pop.</b>
<i>Primary Medical Service Area</i>		
73077	Perry	7,200
73073	Orlando	551
73757	Lucien	<u>147</u>
<b>Total</b>		<b>7,898</b>
<i>Secondary Medical Service Area</i>		
73061	Morrison	1,308
74630	Billings	770
74651	Red Rock	713
73063	Mulhall	<u>685</u>
<b>Total</b>		<b>3,476</b>

**Population by County**

<b>County</b>	<b>2000 Pop.</b>	<b>2005 Est.</b>	<b>% Change</b>
<i>Noble</i>	<i>11,411</i>	<i>11,211</i>	<i>-1.8%</i>
Garfield	57,813	56,958	-1.5%
Grant	5,144	4,779	-7.1%
Kay	48,080	46,480	-3.3%
Pawnee	16,612	16,860	1.5%
Payne	68,190	69,151	1.4%
Logan	33,924	36,894	8.8%

**Figure 3  
Perry Memorial Hospital Medical Service Area**

The health sector in the Perry Memorial Hospital medical service area employs 255 full-time and part-time employees and has an estimated payroll of \$9,287,121 (**Table 5**). The health sector in Perry Memorial Hospital is typical of many rural counties, with one hospital, four doctor's offices with five physicians, three dental offices, three optometrist offices, one chiropractic office, one nursing home, a home health service, a health department, and three pharmacies.

The Hospital component provides 88 full and part-time jobs with an estimated annual payroll of \$3,235,871 (including benefits). The Physicians, Dentists, and Other Medical

**Table 5**  
**Direct Economic Activities of the Health Sector**  
**in the Perry Memorial Hospital Medical Service Area**

Component	Full-Time & Part-Time Employment	Total Payroll with Benefits
<b>Hospital</b>	88	\$3,235,871
Includes Perry Memorial Hospital.		
<b>Physicians, Dentists, &amp; Other Medical Professionals</b>	47	\$2,796,938
Includes four doctor's offices with five physicians, three dental offices, three optometrist offices, and one chiropractic office.		
<b>Other Medical &amp; Health Services</b>	<u>120</u>	<u>\$3,254,312</u>
Includes a nursing home, a home health service, a health department, and three pharmacies.		
<b>Totals</b>	<b><u>255</u></b>	<b><u>\$9,287,121</u></b>

SOURCE: Local survey and estimates from research.

Professionals component employs 47 total full-time and part-time employees with an estimated annual payroll of \$2,796,938. The Other Medical and Health Services component employs 120 total full-time and part-time employees with an estimated annual payroll of \$3,254,312, which includes a nursing home, a home health service, a health department, and three pharmacies.

The health sector is vitally important as both a community employer and a source of income to the community's economy. The health sector employs a large number of residents. These residents, along with businesses in the health sector, purchase a large amount of goods and services from businesses in the Perry Memorial 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, basic concepts of community economics will be reviewed.

### **Basic Concepts of Community Economics and Income and Employment Multipliers**

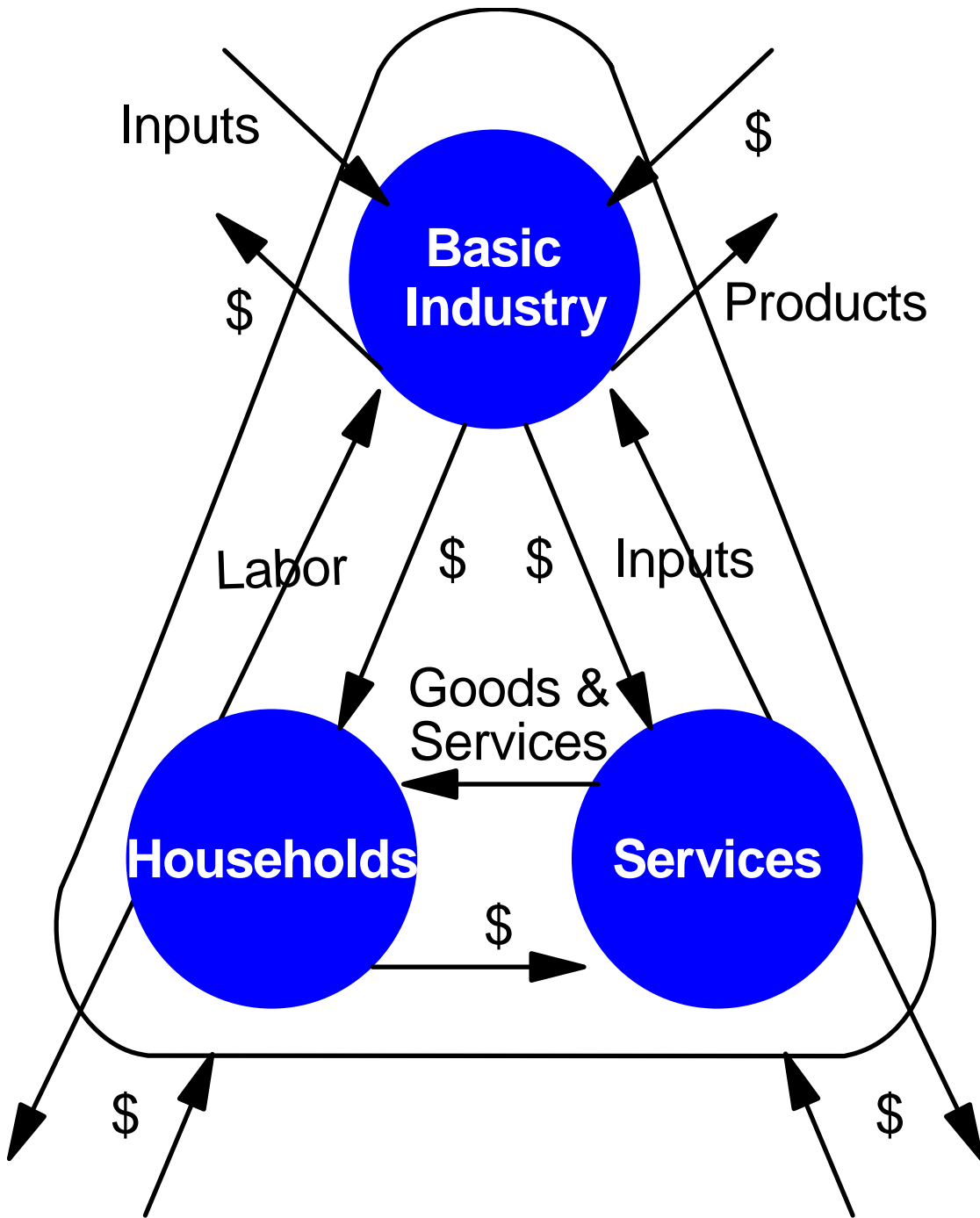
**Figure 4** illustrates the major flows of goods, services, and dollars of any economy. The foundations of a community's economy are those businesses that sell some or all of their goods and services to buyers outside of the community. Such a business is a basic industry. The two arrows in the upper 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 these businesses' purchase of labor and inputs. 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).”



**Figure 4**  
**Community Economic System**

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 Perry Memorial Hospital**

Employment and income multipliers for the area have been calculated by use of the IMPLAN model. It was developed by the U.S. Forest Service<sup>1</sup> and is a model that allows for development of multipliers for various sectors of an economy. The employment multipliers for the components of the health sector are shown in **Table 6**, column 3. The employment multiplier for the Hospital component is 1.31. This indicates that for each job in that component, an additional 0.31 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 6**, column 3. The income multiplier for the Hospital component is 1.20 (**Table 6**, column 6). This indicates that for each dollar in that component, an additional 0.20 dollars are created throughout the area due to business (indirect) and household (induced) spending. The income multipliers for the other health sector components are also shown in **Table 6**, column 6.

Applying the employment multipliers to the employment for each component yields an estimate of the impact on the economy (**Table 6**, columns 2, 3, and 4). For example, the hospital has a direct employment of 88 full-time and part-time employees; applying the employment multiplier of 1.31 to the employment number of 88 brings the total employment impact of the hospital to 115 employees ( $88 \times 1.31 = 115$ ). The Physicians, Dentists, and Other Professionals component employs 47 people; however, the total impact is 60 employees once the multiplier of

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<sup>1</sup>For complete details of model, see [1], [2], and [3].

**Table 6**  
**Noble County 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	88	1.31	115	\$3,235,871	1.20	\$3,883,045	\$966,878	\$9,669
Physicians, Dentists, & Other Medical Professionals	47	1.28	60	\$2,796,938	1.13	\$3,160,540	\$786,974	\$7,870
Other Medical & Health Services	<u>120</u>	1.17	<u>140</u>	<u>\$3,254,312</u>	1.15	<u>\$3,751,437</u>	<u>\$934,108</u>	<u>\$9,341</u>
<b>Total</b>	<b>255</b>		<b>315</b>	<b>\$9,287,121</b>		<b>\$10,795,022</b>	<b>\$2,687,960</b>	<b>\$26,880</b>

SOURCE: 2002 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

1.28 is applied. The Other Medical and Health Services component has 120 full-time and part-time employees and an employment multiplier of 1.17, for a total employment impact of 140. The total employment impact of the health sector in the Perry Memorial Hospital medical service area is estimated to be 315 employees (**Table 6**, total of column 4).

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 Perry Memorial Hospital medical service area (**Table 6**, columns 5, 6, and 7). The hospital has a total payroll of \$3,235,871; applying the income multiplier of 1.20 brings the total hospital income impact to \$3,883,045 ( $\$3,235,871 \times 1.20 = \$3,883,045$ ). The Physicians, Dentists, and Other Medical Professionals component has a total income impact of \$3,160,540, based on the application of the income multiplier of 1.13 to the \$2,796,938 payroll. The Other Medical and Health Service component has a total payroll of \$3,254,312 and an income multiplier of 1.15, leading to a total income impact of \$3,751,437. The total income impact of the health sector on the economy of Perry Memorial Hospital medical service area is projected to be \$10,795,022 (**Table 6**, 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 24.9%), then direct and secondary retail sales generated by the health sector equals \$2,687,960 (**Table 6**, 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 \$26,880

in the Perry Memorial Hospital medical service area economy as a result of the health sector income impact (**Table 6**, total of column 9). This estimate is probably low, as many health care employees tend to spend a larger proportion of their income in local establishments that collect sales tax. The bottom line is that the health sector in Perry Memorial 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 Perry Memorial 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.

For additional information, contact your local county extension office.

## References

- [1] IMPLAN Professional Version 2.0 Social Accounting & Impact Analysis Software – USER’S GUIDE, ANALYSIS GUIDE, DATA GUIDE, MIG, Minnesota IMPLAN Group, 2<sup>nd</sup> 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.