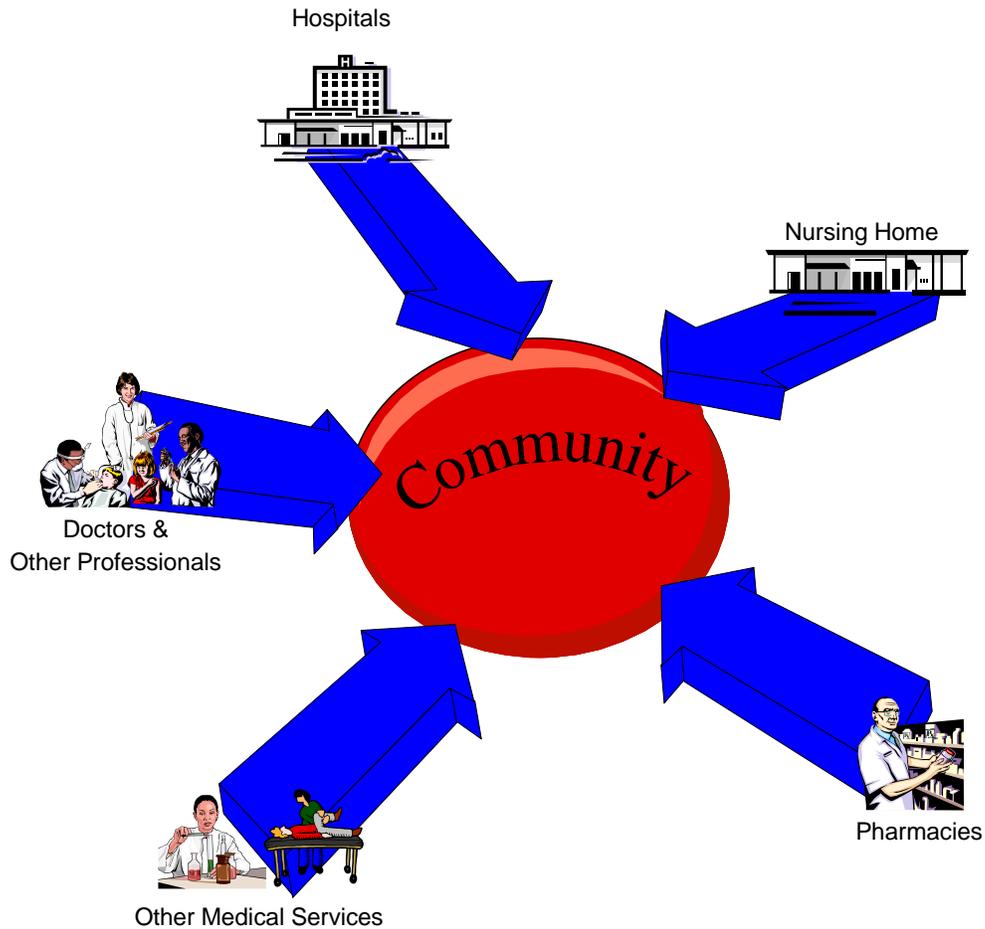


# Economic Impact of the Health Sector on the Economy of Seiling Municipal Hospital Medical Service Area



**Oklahoma Cooperative Extension Service  
Oklahoma Office of Rural Health**

**Oklahoma State University**

**March 2005**

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**Community Health Engagement Process documents available online at:  
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RURAL DEVELOPMENT  
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## **Economic Impact of the Health Sector on the Economy of Seiling Municipal 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 number of people and have a large payroll, but they also draw into the community a large number of people from rural areas that need medical services. The overall objective of this study is to measure the economic impact of the health sector on the economy of Seiling Municipal Hospital medical service area. The specific objectives of this report are to:

1. Identify the Seiling Municipal Hospital medical service area population;
2. Identify employment for the Seiling Municipal Hospital medical service area;
3. Summarize the direct economic activities of the health sector;
4. Review concepts of community economics and multipliers; and
5. Estimate the secondary impacts of the health sector on the economy of Seiling Municipal Hospital medical service area.

No recommendations will be made in this report.

### **County Demographic and Economic Data**

The population and employment for the Seiling Municipal Hospital medical service area will be illustrated in this section. The primary service area encompasses a region of several counties; therefore, for the purposes of this report the primary service area will be identified by zip codes. The population for Seiling Municipal Hospital primary medical service area is presented in **Table 1**. Seiling, 73663, is the largest zip code with a 2000 population of 1,333.

**Table 1**  
**Population of Seiling Municipal Hospital**  
**Medical Service Area**

	1990 Population	2000 Population	Percent Difference
State of Oklahoma	3,145,585	3,450,305	9.69%
Camargo 73835 (Dewey County)	245	184	-24.90%
Chester 73838 (Major County)	596	450	-24.50%
Mutual 73853 (Woodward County)	284	327	15.14%
Vici 73859 (Dewey County)	1,309	1,312	0.23%
Leedey 73654 (Dewey County)	887	912	2.82%
Seiling 73663 (Dewey County)	1,883	1,333	-29.21%
Taloga 73667 (Dewey County)	<u>776</u>	<u>618</u>	-20.36%
Total Service Area Population	5,980	5,136	-14.11%
Total Population Dewey County	5,551	4,743	-14.56%

SOURCE: 1990 and 2000 U.S. Census Population

NA = Not Available.

Vici, 73859, is the second largest zip code with a population of 1,312. The total population of the primary medical service area of Seiling Municipal hospital is 5,136 in 2000 and has decreased from 5,551 in 1990.

Employment data for the medical service area of Seiling Municipal Hospital and the state of Oklahoma are presented in **Table 2**. The top employment areas for the region are Agriculture, forestry, fishing and hunting, and mining (559), Educational, health and social services (460), and Retail trade (279). The medical services area has an economic base of Agriculture, Education, and Retail. The state of Oklahoma's top employment industry is Education, health, and social services with 316,456.

### **The Direct Economic Activities**

Employment and payroll are the important direct economic activities created in the Seiling Municipal Hospital medical service area from the health sector. The health sector is divided into the following five components:

- Hospitals
- Medical Professionals (including doctors, dentists, and other professionals)
- Nursing and Residential Care
- Pharmacies
- Other Medical and Health Services (includes home health care and county health departments)

**Table 3** shows the total health sector in the Seiling Municipal Hospital medical service area. This area has approximately 225 full-time and part-time employees with an estimated payroll of \$4,541,601. The health sector in the Seiling Municipal Hospital medical service area includes the hospital, three physician clinics, two dentists, one optometrist, three nursing homes, and four pharmacies. It also includes one home health service and two emergency medical

**Table 2**  
**2000 Employment by Industry**  
**Seiling Municipal Hospital**  
**Medical Service Area**

Industry	Medical Service Area Zip Codes		State of Oklahoma	
	No.	%	No.	%
Agriculture, forestry, fishing and hunting, and mining	559	24.6%	62,743	4.1%
Construction	154	6.8%	107,302	6.9%
Manufacturing	70	3.1%	193,887	12.5%
Wholesale trade	58	2.6%	52,807	3.4%
Retail trade	279	12.3%	185,789	12.0%
Transportation and warehousing, & utilities	167	7.4%	85,769	5.6%
Information	20	0.9%	41,686	2.7%
Finance, insurance, real estate, and rental & leasing	116	5.1%	93,239	6.0%
Prof., scientific, management, admin., and waste management services	49	2.2%	113,063	7.3%
Educational, health and social services	460	20.3%	316,456	20.5%
Arts, entertainment, rec., accommodation and food services	96	4.2%	115,167	7.5%
Other services (except public admin.)	151	6.7%	85,927	5.6%
Public administration	<u>89</u>	<u>3.9%</u>	<u>91,461</u>	<u>5.9%</u>
<b>Total</b>	<b>2,268</b>	<b>100.0%</b>	<b>1,545,296</b>	<b>100.0%</b>

SOURCE: U.S. Census Bureau.

**Table 3**  
**Direct Economic Activities of the Health Sector**  
**in the Seiling Municipal Hospital Medical Service Area**

Component	Estimated Employees*	Estimated Income
Hospital Includes Seiling Municipal Hospital	42	\$929,574
Medical Professionals Includes 3 clinics, 2 dentists, and 1 optometrist	18	\$491,900
Nursing & Residential Care Includes 3 nursing homes	147	\$2,518,500
Pharmacies Includes 4 pharmacies	11	\$476,000
Other Medical and Health Services Includes 1 home health service, and 2 emergency medical services	<u>7</u>	<u>\$125,627</u>
<b>Total</b>	<b>225</b>	<b>\$4,541,601</b>

SOURCE: Local data or estimated.

\* Includes full-time and part-time employees

services. The Hospital component employs 42 people with an annual payroll of \$929,574 (**Table 3**). The Medical Professionals component employs approximately 18 employees with an annual payroll estimated to be \$491,900. The Nursing and Residential Care component employs 147 people with an annual payroll of \$2,518,500. The Pharmacies component employs 11 people with an annual payroll estimated at \$476,000. The Other Medical and Health Services component has a total of 7 employees with a payroll of \$125,627. It should be noted that many rural communities have a large number of elderly, and the ranchers and farmers often retire in the towns. Thus, Nursing and Residential Care facilities are an important component of the health sector.

In summary, the health sector is vitally important as a community employer and important to the community's economy. The health sector definitely employs a large number of residents. The health sector and the employees in the health sector purchase a large amount of goods and services from businesses in the Seiling 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 considered, basic concepts of community economics will be discussed.

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

**Figure 1** 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 1** 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 1**),

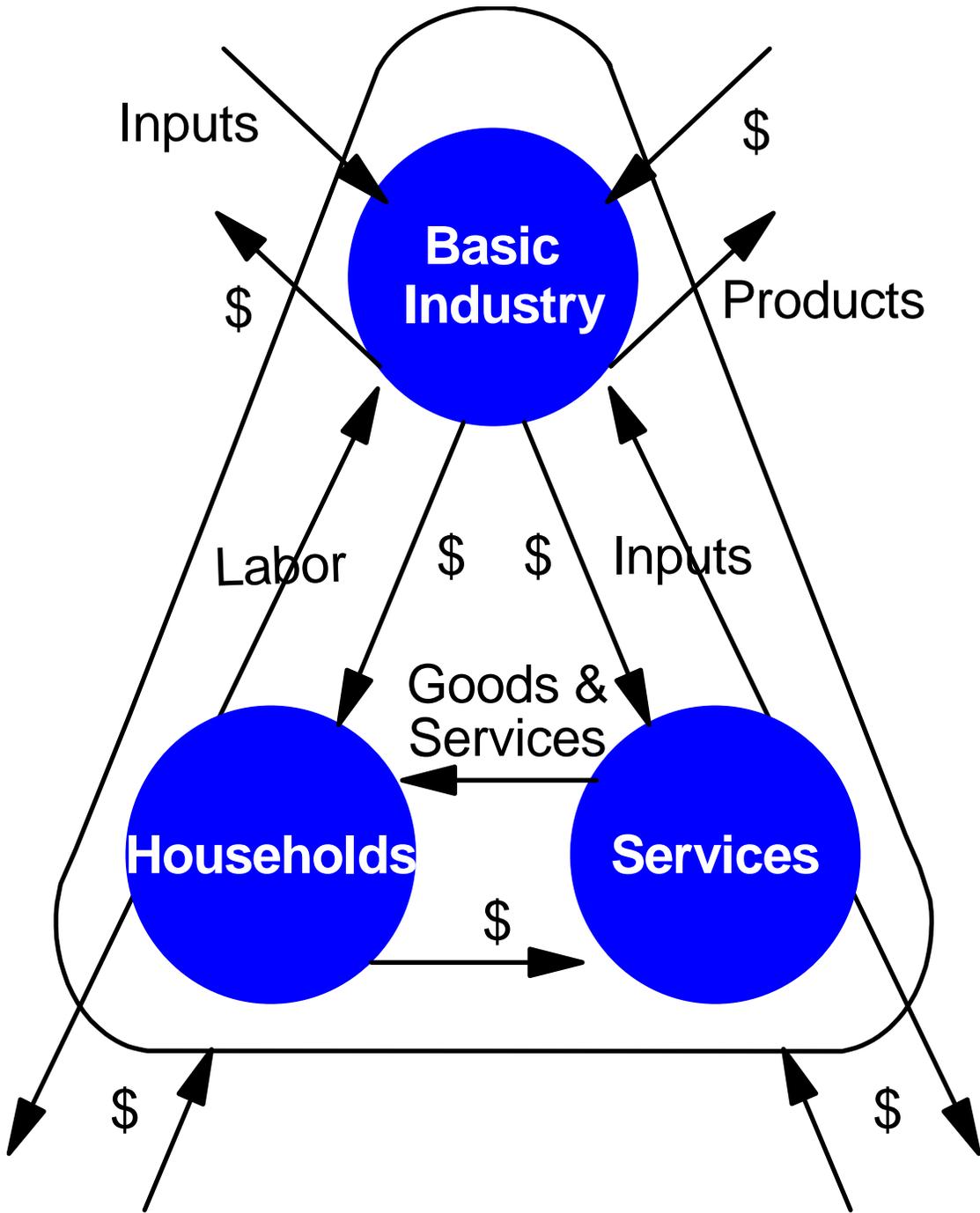
labor from the residents or "households" of the community (left side of **Figure 1**), and inputs from service industries located within the community (right side of **Figure 1**). Households using their earnings to purchase goods and services from the community's service industries complete the flow of labor, goods, and services in the community (bottom of **Figure 1**). It is evident from the interrelationships illustrated in **Figure 1** that a change in any one segment of a community's economy will have 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 dollars going to households will stop. Likewise, the hospital will not purchase goods from other businesses and 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.

Figure 1.

Community Economic System



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. Multipliers are used in this report and 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 Seiling Municipal Hospital Medical Service Area**

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 and is a model that allows for development of county multipliers. The employment multipliers for the five components of the health sector are shown in **Table 4**, column 3. The employment multiplier for the hospital component is 1.46. This indicates that for each job created in that sector, 0.46 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 4**, column 3. The income multiplier for the hospital sector is 1.39 (**Table 4**, column 6). This indicates that for each dollar created in that sector, 0.39 dollars are created throughout the area due to business (indirect) and household (induced) spending. The income multipliers for the other four health sector components are also given in **Table 4**, column 6.

**Table 4**  
**Economic Impact of the Health Sector**  
**on Employment and Income in Seiling Municipal Hospital Medical Service Area**

(1) Health Sector Components	(2) Nos.	(3) <u>Employment</u> Multiplier	(4) Impact	(5) Income	(6) <u>Payroll &amp; Proprietor Income</u> Multiplier	(7) Impact	(8) Retail Sales <sup>1</sup>	(9) 1.0% Sales Tax <sup>2</sup>
Hospitals	42	1.46	61	\$929,574	1.39	\$1,292,108	\$424,632	\$4,246
Medical Professionals	18	1.13	20	\$491,900	1.14	\$560,766	\$184,288	\$1,843
Nursing & Residential Care	147	1.19	175	\$2,518,500	1.18	\$2,971,830	\$976,648	\$9,766
Pharmacies	11	1.11	12	\$476,000	1.12	\$533,120	\$175,202	\$1,752
Other Medical and Health Services	<u>7</u>	1.39	<u>10</u>	<u>\$125,627</u>	2.29	<u>\$287,685</u>	<u>\$94,543</u>	<u>\$945</u>
<b>Totals</b>	<u>225</u>		<u>278</u>	<u>\$4,541,601</u>		<u>\$5,645,509</u>	<u>\$1,855,313</u>	<u>\$18,552</u>

SOURCE: 2001 IMPLAN Multipliers; Local employment and income data; 2001 BEA Data; Sales Tax Collections for Cities and Towns and Counties, Oklahoma Tax Commission, 2002.

<sup>1</sup> Based on local retail sales capture ratio of 32.9%.

<sup>2</sup> Since communities have different sales tax rates, the amount collected from a one cent sales tax is illustrated here.

Applying the employment multipliers to the employment for each of the five health sector components yields an estimate of each component's employment impact on the Seiling Municipal Hospital medical service area (**Table 4**, columns 2, 3, and 4). For example, the hospital has 42 employees. Applying the employment multiplier of 1.46 to the employment number of 42 brings the total employment impact of the hospital to 61 employees ( $42 \times 1.46 = 62$ ). The Medical Professionals component has a direct impact of 18 employees and with the application of the multiplier of 1.13, the total impact rises to 20 employees. The Nursing and Residential Care component has a direct effect of 147 employees and an employment multiplier of 1.19, to bring the total impact to 175 employees. The Pharmacies component has 11 employees and a total impact of 12 employees, applying the employment multiplier of 1.11. The Other Medical and Health Services component has a direct impact of 7 employees, an employment multiplier of 1.39, and a total employment impact of 10 employees. The total employment impact of the health sector in the Seiling Municipal Hospital medical service area is estimated to be 278 employees (**Table 4**, total of column 4).

Applying the income multipliers to the income (payroll) for each of the five health sector components yields an estimate of each component's income impact on the Seiling Municipal Hospital medical service area (**Table 4**, columns 5, 6, and 7). The Hospital component has a total payroll of \$929,574; applying the income multiplier of 1.39 brings the total Hospital income impact to \$1,292,108 ( $\$929,574 \times 1.39 = \$1,292,108$ ). The Medical Professionals component has a total income impact of \$560,766 based on the application of the income multiplier of 1.14 to the direct estimated payroll of \$491,900. The Nursing and Residential Care component has a payroll of \$2,518,500, with a multiplier of 1.18 resulting in an income impact of \$2,971,830. The Pharmacies component has an income impact of \$533,120 based on the

direct payroll of \$476,000 and the income multiplier of 1.12. The Other Medical and Health Services component has an income impact of \$287,685 based on the direct payroll of \$125,627 and the income multiplier of 2.29. The total income impact of the health sector in the Seiling Municipal Hospital medical service area is projected to be \$5,645,509 (**Table 4**, total of column 7).

Income also has an impact on retail sales. If the county ratio between retail sales and income continues as in the past several years, then direct and secondary retail sales generated by the health sector and its employees equal \$1,855,313 (**Table 4**, total of column 8). Each of the five health sector 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 is used as an example due to the varying sales tax rates used in counties across the state. Then the five components are totaled to determine the direct and secondary retail sales generated by the health sector. A one-cent sales tax collection is estimated to generate \$18,552 annually in the Seiling Municipal Hospital medical service area as a result of the total health sector impact (**Table 4**, total of column 9). This estimate is probably low, as many health care employees will spend a larger proportion of their income in local establishments that collect sales tax. The bottom line is that the health sector 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 upon the economy of the Seiling 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 measures the total impact 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, are greatly affected. For the attraction of industrial firms, businesses, and retirees, it is crucial that the area have a quality health sector. Often overlooked is the fact that a prosperous health sector also contributes to the economic health of the community.

## References

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