

The Economic Importance of the
Health Care Sector on a Rural Economy

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High quality infrastructure is critical for quality of life preservation as well as an essential component of growth and development. As facilities and services deteriorate and/or become inadequate, growth is deterred and quality of life is adversely affected. A viable health sector is a major component of a community's infrastructure. Furthermore, attraction of new firms to provide jobs and economic growth can be extremely difficult without the availability of quality medical services. Several studies support the importance of a quality health sector in rural communities for industrial development and for retaining existing businesses and industries (Chirilos and Nostel, 1985; Lyne, 1988; Scott, Smith and Rungeling, 1997). Finally, the attraction of retirees can be an effective economic development strategy. Selected studies (Reginier and Gelwicks, 1981; Serow, 1987; Toseland and Rasch, 1978) have indicated that health services were one of the primary concerns for selection of retirement locations for the elderly. Consequently, it is imperative that rural communities have quality health services.

More changes are occurring in the delivery of health services than ever before in America's history. Hospital and physician networks are being created. Managed care is being introduced into rural communities. In addition, fiscal problems with Medicare and Medicaid may impose additional financial stress and changes with the delivery of health services in rural areas. Aside from its contribution to existing quality of life and economic growth projects, the health sector provides significant direct economic benefits through employment and income impacts on a community. The objective of this paper is to demonstrate the importance of the health sector to the economy of a rural community and to discuss what community leaders can do to maintain and promote their health sector. More specifically, the objectives are to:

1. Measure the total impact of the health sector on a community's economy;

2. Illustrate the importance of the health sector for industrial growth;
3. Illustrate the importance of the health sector for retirement growth; and
4. Discuss and demonstrate what community leaders can do to maintain and promote their health sector.

MEASURING THE HEALTH SECTOR IMPACT ON THE ECONOMY

The health sector at the community level is generally not looked at as a large employer, but in fact it is extremely large. In many rural communities, a rural hospital is often the second largest employer (Doeksen, Cordes, and Shaffer, 1992). The largest employer is often the school system. If the employment of the hospital is added to the other health components such as physicians, pharmacies, etc., and the total impact of the health sector is included, health generated employment is often about 10 percent of a rural community's employment. When the secondary benefits are included in this analysis, the health sector often accounts for about 15 percent of the total employment (Doeksen, Johnson, and Willoughby, 1996).

The model and data used to calculate county and community level multipliers is discussed in Doeksen, Johnson, Biard-Holmes, and Schott (1998). Direct employment is the employment and income associated with the health sector. Secondary benefits are the employment and income generated in other business due to the health sector businesses and employees spending income locally.

The Direct Economic Activities

Employment and payroll are the important direct economic activities created in Atoka County from the health sector. The health sector is divided into the following five components:

- Hospitals
- Doctors and Dentists (includes other medical professionals)

- Nursing and Protective Care
- Other Medical and Health Services (includes home health care and county health departments)
- Pharmacies

The total health sector in Atoka County employs 539 full-time equivalent employees and has an estimated payroll of \$10,355,317 (**Table 1**). The health sector in Atoka County is typical of many rural areas, with one hospital, two physician offices, two dental offices, two nursing homes, and two pharmacies. The Hospital component employs 120 people with an annual payroll of \$2,406,564. The Doctors and Dentists (& Other Medical Professionals) component employs 67 full-time equivalent employees, with an annual payroll of \$2,615,000. The Nursing and Protective Care Component employs 192 people with an annual payroll of \$2,526,000. The Other Medical and Health Services component employs 144 employees, with an annual payroll cost of \$2,382,000. The Pharmacies component has a total of 16 employees totaling a payroll of \$425,753. 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 Protective Care facilities are an important component of the health sector.

Secondary Impacts of Health Sector on the Economy of Atoka County, Oklahoma

Employment and income multipliers for the area have been calculated by use of the IMPLAN model. It was developed by the U.S. Forest Service¹ and is a model that allows for development of county multipliers. The Type III employment multipliers for the five components of the health sector are shown in **Table 2**, column 3. The Type III employment multiplier for the hospital

¹ For complete details of model, see Palmer and Siverts, 1985 and Siverts, Palmer, Walters, and Alward, 1983.

Table 1
Direct Economic Activities of the Health Sector
in Atoka County, Oklahoma

Component	Estimated Employees	Estimated Payroll
Hospital (1) (Includes the Hospital Home Health and the Atoka County EMS)	120	\$2,406,564
Doctors and Dentists (Includes 2 physicians, 2 optometrists, 2 dentists, and 1 chiropractor)	67	\$2,615,000
Nursing & Protective Care (2)	192	\$2,526,000
Other Medical & Health Services (Includes 4 home health agencies, county health dept., and 2 DME suppliers)	144	\$2,382,000
Pharmacies (2)	<u>16</u>	<u>\$425,753</u>
TOTALS	<u>539</u>	<u>\$10,355,317</u>

SOURCE: Local survey and estimated from research

component is 1.70. This indicates that for each job created in that sector, 0.70 jobs are created throughout the area due to business (indirect) and household (induced) spending. The Type III employment multipliers for the other health sector components are also shown in **Table 2**, column 3. The Type III income multiplier for the hospital sector is 1.47 (**Table 2**, column 6). This indicates that for each dollar created in that sector, 0.47 dollars are created throughout the area due to business (indirect) and household (induced) spending. The Type III income multipliers for the other four health sector components are also given in **Table 2**, column 6.

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 Atoka County (**Table 2**, columns 2, 3, and 4). For example, the hospital 120 employees; applying the Type III employment multiplier of 1.70 to the employment number of 120 brings the total employment impact of the hospitals to 204 employees ($120 \times 1.70 = 204$). The Doctors and Dentists component has a direct impact of 67 employees and with the application of the Type III multiplier of 1.79, the total impact comes to 120 employees. The Nursing and Protective Care component has a direct effect of 192 employees and an employment multiplier of 1.54, to bring the total impact to 296 employees. The Other Medical & Health Services component has a direct effect of 144 employees, an employment multiplier of 1.62, and a total employment impact of 233 employees. The Pharmacies component has 16 employees and a total impact of 24 employees, applying the employment multiplier of 1.49. The total employment impact of the health sector in Atoka County is estimated at 877 employees (**Table 2**, total of column 4).

Applying the income multipliers to the income (employee compensation and proprietors income) for each of the five health sector components yields an estimate of each component's income impact on Atoka County (**Table 2**, columns 5, 6, and 7). The Hospital component has a

Table 2
Economic Impact of the Health Sector
on Employment and Income in Atoka County, Oklahoma

(1) Health Sector Component	(2) Employment	(3) Type III Multiplier	(4) Employment Impact	(5) Income	(6) Type III Multiplier	(7) Income Impact	(8) Retail Sales	(9) One Cent Sales Tax
Hospitals	120	1.70	204	\$2,406,564	1.47	\$3,537,649	\$1,428,149	\$14,281
Doctors & Dentists	67	1.79	120	\$2,615,000	1.34	\$3,504,100	\$1,414,605	\$14,146
Nursing & Protective Care	192	1.54	296	\$2,526,000	1.66	\$4,193,160	\$1,692,779	\$16,928
Other Medical & Health Services	144	1.62	233	\$2,382,000	1.62	\$3,858,840	\$1,557,814	\$15,578
Pharmacies	<u>16</u>	1.49	<u>24</u>	<u>\$425,753</u>	1.61	<u>\$685,463</u>	<u>\$276,721</u>	<u>\$2,767</u>
TOTALS	<u>539</u>		<u>877</u>	<u>\$10,355,317</u>		<u>\$15,779,212</u>	<u>\$6,370,068</u>	<u>\$63,700</u>

SOURCE: 1998 IMPLAN Data Base; local data for hospital employment and income; 1999 County Business Patterns for pharmacy employment and payroll

*Since the communities in the county have different sales tax rates, the amount of collections generated by a one cent sales tax is presented.

total payroll of \$2,406,564; applying the Type III income multiplier of 1.47 brings the total Hospital income impact to \$3,537,649 ($\$2,406,564 \times 1.47 = \$3,537,649$). The Doctors and Dentists have a total income impact of \$3,504,100, based on the application of the income multiplier of 1.34 to the payroll of the Doctors and Dentists component of \$2,615,000. The Nursing & Protective Care component has a payroll of \$2,526,000, a multiplier of 1.66, resulting in an income impact of \$4,193,160. The Other Medical & Health Services has an income impact of \$3,858,840, based on the direct payroll of \$2,382,000 and the income multiplier of 1.62. The Pharmacies has an income impact of \$685,463, based on the direct payroll of \$425,753 and the income multiplier of 1.61. The total income impact of the health sector in Atoka County is projected to be \$15,779,212 (**Table 2**, 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 equals \$6,370,068 (**Table 2**, total of column 8). Each of the five health sector components' income impacts is utilized to determine the retail sales and a 1-cent sales tax collection for each component. Then the five components are totaled to determine the direct and secondary retail sales generated by the health sector. A 1-cent sales tax collection is estimated to generate \$63,700 in Atoka County as a result of the total health sector impact (**Table 2**, 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.

IMPORTANCE OF HEALTH SECTOR FOR INDUSTRIAL GROWTH

As rural communities attempt to diversify their economies, retaining existing businesses and industries and attracting new businesses and industries are generally growth strategies. The question which arises is how important is the viable health sector to business and industrial decision-makers as they evaluate a community for locational purposes. Research studies investigating this hypothesis are few. One study (Lyne, 1988) found that quality-of-life (QOL) factors are playing a dramatic role in location decisions. The study concluded:

“In fact, almost half (facility planners) say QOL considerations are controlling both initial screening and final site selections.”

The most important QOL variables were transportation, education, and health. Another related finding by Lyne is the role of health care costs in industrial location decisions (1990). Specifically, Lyne’s survey of corporate executives indicated that corporations are sometimes giving priority to sites which provide health services at low costs as a tie-breaking factor between comparable sites, to the extent that rural areas are often able to provide health care at lower costs than their urban counterparts. This development may bode well for at least some rural areas.

McGuire (1986) conducted a detailed review of the literature and reports that:

“...the evidence appears to be that there is a positive and perhaps strong relationship between infrastructure and economic development.”

IMPORTANCE OF THE HEALTH SECTOR FOR RETIREMENT GROWTH

Retirees form a special group of residents whose spending and purchasing can be an important source of local jobs. Additionally, middle and upper income retirees often have

substantial new worth. Many rural areas have environments (e.g., good climate and outdoor activities) that enable them to be in a good position to attract retirees. Retaining retirees is, of course, just as important as attracting new retirees, and the rural population contains a relatively high proportion of elderly, including retirees. The amount of spending “embodied” in this population, including the purchasing power associated with Social Security and other transfer payments, is substantial. Hence, a critical economic development question is the extent to which the availability of health services influences the location decision of retirees. Although the data are limited, at least several studies suggest health services may be a critical variable.

For example, Toseland and Rasch (1978) conducted a survey of 878 persons, 55 years of age or older, in 28 communities in the U.S. The four items that were the best predictors of retirement location were safety, recreational facilities, dwelling units, and health care. As another example, Reginier and Gelwicks (1981) surveyed 221 people 60 years old or older who were considering a retirement community. Nearly 60 percent said health services were in the “must have” category. Only protective services were mentioned more often than health services as a “must have” service. Finally, a case study in rural North Carolina (Pomeranz, 1988) noted that the:

“lack of local long-term services and hospital beds has resulted in increasing numbers of seniors being forced to receive medical care in the same distant locations (fifty miles away or more) as they are hospitalized. This has resulted in a service displacement cycle in which many of these seniors have been forced to relocate in order to receive needed rehabilitation and support services (p.44).”

WHAT CAN RURAL COMMUNITY LEADERS DO?

By documenting the importance of health care in attracting business and industry and retirees, and for creating jobs and generating incomes, this report demonstrates the need for a strong health sector in Atoka County. And, as the county's health care sector continues to change, local decision makers may find it necessary to seek assistance as they work to evaluate, maintain, or expand the health sector. To this end, a resource team consisting of representatives from the Oklahoma State Department of Health, the Oklahoma Office of Rural Health, the Area Health Education Center (AHEC) in the community's area, the Oklahoma Cooperative Extension Service and the University of Oklahoma Health Sciences Center is available to provide education and technical assistance. Two primary types of assistance that may be most beneficial to the communities, both vital to maintaining a viable health sector, are strategic health planning and feasibility studies (Oklahoma State Department of Health, 1995).

Strategic Health Planning

Strategic health planning is a process that helps local communities identify their health care needs; examine the social, economic, and political realities affecting the local delivery of health care; determine what is wanted and what realistically can be achieved to meet their identified health care needs; and develop and mobilize an action plan based on their analysis and planning. Strategic health planning involves cooperation among people and organizations to pursue common goals. The process is designed to answer three questions:

- (1) Where is the community now?
- (2) Where does the community want to go?
- (3) How will the community get there?

For the strategic health planning process to be most effective, it must be based in the community and driven by the community. Local residents and their leaders must participate—a current knowledge of the health care industry is not necessary. This process is about local people solving local problems. The local hospital and health care providers should have input into the decision-making and should support and “trust” the outcomes, but not be the main force behind the process. The community must provide the energy and commitment.

Feasibility Studies

The strategic health planning process often identifies the need to provide a new health-related service. For example, the community might determine they need adult daycare services or an assisted living facility. Whatever the identified need, all relevant information must be gathered and analyzed before action is initiated. Again, the resource team can be extremely helpful in completing the feasibility study, which includes estimating the need for the service, projecting capital and operating costs, and estimating profit or loss. Feasibility studies that already have been completed include:

- Emergency Medical Services;
- Physicians;
- Rural Transportation;
- Adult Day Services;
- Free Clinics;
- Outpatient Rehabilitation; and
- Critical Access Hospitals.

Summary

The importance of the health sector to a local economy is clearly demonstrated. In summary the benefits are:

- Directly employs 10-15 percent of labor force
- Total employment impact (direct and secondary benefit) account for 15-20 percent of labor force
- Is important for industrial or business attraction
- Is important for attracting retirees.

Community leaders can undertake a health planning process and conduct budget studies to promote and expand community health services.

References

- Alward, Greg, Eric Sivertz, Doug Olsen, John Wagner, David Serf, and Scott Lindall (1989). Micro IMPLAN Software Manual. University of Minnesota Press.
- Chirilos, Thomas N. and Gilbert Nostel (1985). "Further Evidence on the Economic Effects of Poor Health." Review of Economics and Statistics. 67(1), 61-69.
- Christianson, John B. and L. Faulkner (1981). "The Contribution of Rural Hospitals to Local Economies." Inquiry. 18(1), 46-60.
- Doeksen, Gerald A., Sam Cordes, and Ron Shaffer (1992). Health Care's Contribution to Rural Economic Development. Unpublished paper prepared for Federal Office of Rural Health.
- Doeksen, Gerald A., Tom Johnson, and Chuck Willoughby (1996). Measuring the Economic Importance of the Health Sector on a Local Economy: A Brief Review and Procedures to Measure Local Impacts. Southern Rural Development Center Publication, Starkville, Mississippi.
- Doeksen, Gerald A., Tom Johnson, Diane Biard-Holmes and Val Schott (1998). "A Healthy Health Sector is Crucial for Community Economic Development." Journal of Rural Health. Vol. 14, No. 1, pp. 66-72.
- Doeksen, Gerald A., R. A. Loewen, and D. A. Strawn (1990). "A Rural Hospital's Impact on a Community's Economic Health." The Journal of Rural Health. 6(1), 53-64.
- Lyne, J. (1990). Health Care and Education: Important QOL Factors, but Who's Accurately Measuring Them? Site Selection, 35, (5), 832-838.
- Lyne, Jack (1988). "Quality-of-Life Factors Dominate Many Facility Location Decisions." Site Selection Handbook. Vol. 33, 868-870.
- McDermott, R.E., G.C. Cornia, and R.J. parsons (1991). "The Economic Impact of Hospitals in Rural Communities." The Journal of Rural Health. 7(2), 117-132.
- McGuire, T. On the Relationship Between Infrastructure Investment and Economic Development. Stony Brook: State University of New York, 1986.
- Oklahoma State Department of Health (1995). Guidebook on Strategic Health Planning in Oklahoma Communities.
- 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.
- Pomeranz, William (1988). "A Rural Long-Term Cary System Model." Health Issues in Rural America. Chapter 3, National Governor's Association.

- Reginer, V. and L.E. Gelwicks (1981). "Preferred Supportive Services for Middle to Higher Income Retirement Housing." The Gerontologist. 21(1), 54-58.
- Scott, Loren C., Lewis H. Smith, and Brian Rungeling (1997). "Labor Force Participation in Southern Rural Labor Markets." American Journal of Agricultural Economics. 59(2), 266-274.
- Serow, W.J. (1987). "Determinants of Interstate Migration: Differences Between Elderly and Non-Elderly Movers." Journal of Gerontology. 42(1), 95-100.
- 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.
- Toseland, R., and J. Rasch (1978). "Factors Contributing to Older Persons' Satisfaction with Their Communities." The Gerontologist. 18(4), 395-402.