



The Importance of the Health Care Sector to the Economy of Doniphan County

Kansas Hospital Association
October 2015

Funding for this report provided by the Kansas Hospital Association



This report prepared by the Office of Local Government
Luke Willis, *Research Assistant*
Rebecca Bishop, *Extension Associate*
John Leatherman, *Director*

The Economics of Rural Health Care

The organization and delivery of health care services have undergone rapid evolution in recent years. For many Americans, the cost of services and access to care are important issues. This certainly is true in many rural areas where communities have struggled to maintain affordable, quality health care systems. As economic forces and technical advances continue to change health care, it is more important than ever for rural community leaders and health care providers to work together to ensure affordable, sustainable health care systems.

In an effort to provide useful information resources to rural community and health care leaders, the Kansas Hospital Association (KHA) has teamed with the Office of Local Government, a unit of the Department of Agricultural Economics and K-State Research and Extension, to develop this report as a component of the *Kansas Rural Health Works* program.

The purpose of this report is to provide information resources that may be used to communicate to community leaders and concerned citizens the relative importance of health care to the local economy.

Much of this information draws on the national Rural Health Works program sponsored by the Office of Rural Health Policy, an initiative led by Cooperative Extension Service specialists at Oklahoma State University. Many persons knowledgeable about the Kansas health care system also contributed to this report, including specialists at the Kansas Hospital Association, the Office of Local and Rural Health, and hospital administrators from across the state who cooperated in the development of these resources.

Additional information relating to local demographic characteristics and health indicators is available from the **Kansas Health Matters** Website at www.kansashealthmatters.org. Kansas Health Matters is a one stop source of non-biased data and information about community health in Kansas. It is intended to help hospitals, health departments, policy makers, community planners and members learn about issues, identify improvements and collaborate for positive change. At this site, you can compare your Kansas county's health with other Kansas counties, the nation, and 2020 targets with a variety of health indicators. Create your own reports in the report assistant. Learn about promising practices on a variety of topics that affect community health.

The Office of Local Government welcomes any questions, comments or suggestions about this report or any of their other services. Contact your county Extension office or:

Dr. John Leatherman
Office of Local Government
Department of Agricultural Economics
K-State Research and Extension
Manhattan, KS 66506-3415

Phone: 785-532-2643
10E Umberger Hall
Fax: 785-532-3093
E-mail: jleather@ksu.edu

The Economic Contribution of the Health Care Sector In Doniphan County, Kansas

Introduction

The rapidly changing delivery of health services in rural counties has the potential to greatly impact the availability of health care services in the future. These changes include:

- Insufficient Medicare and Medicaid payments to hospitals and providers may force a reduction in the provision of health care services.
- Although Kansas rural health networks are already fairly strong, creation of provider networks may substantially change the delivery of, and access to, local health care services.
- Use of telemedicine could increase access to primary, consultative and specialty health care services at the county level.
- Development of critical access hospitals could help health care services remain in rural counties. Kansas currently has over 80 critical access hospitals.

As a result, the health care sector can have a large impact on the local economy. All of these changes make it imperative that decision makers in Doniphan County become proactive in maintaining high quality local health care services.

Health care facilities such as hospitals and nursing homes provide jobs and income to people in the community. As these employees spend their income in the community, a ripple spreads throughout the economy, creating additional jobs and income in other economic sectors. To help understand this important connection between the health sector and the local economy, this report will:

- Discuss the role of the health sector in rural development.
- Measure the employment, income, and retail sales impact of the health sector on the Doniphan County economy.

This report will not make any recommendations.

Health Care Changes and Their Effects on Rural Communities

The changes occurring in the health care sector have had a substantial impact on many rural communities. Many people have found it more difficult to get health care coverage, insurance premiums have increased, and rural health care providers have been reimbursed at rates less than their urban counterparts for doing the same work. Concurrently, changes in urban health systems have had impact on rural health care delivery with the result that some rural communities have lost their ability to make decisions about their local health care.

Job creation represents an important goal for most local economic development programs. National employment in health care services increased by 75 percent from 1990 to 2010, and by approximately 350 percent since 1970. In rural areas, in particular, employment in health-related services often accounts for 10 to 15 percent of total employment. This reflects the fact that the hospital is often the second largest employer in a rural community (local government including schools typically being the largest employer).

Another important factor is the growth of the health sector. Health services, as a share of gross domestic product (GDP), have increased substantially over time. As shown in Table 1, Americans spent \$74.9 billion on health care in 1970, which accounted for 7.0 percent of the GDP. In 2010, health care costs increased to nearly \$2.6 trillion, or 17.4 percent of the GDP. If current trends continue, projections indicate that Americans will spend 18.5 percent of GDP on health care by 2020. Capturing a share of this economic growth can only help a community.

Typically, rural community residents pay little attention to their local health care system until it is needed. Consequently, many rural people have little idea of the overall importance of the health care sector to their community's economy, such as the number of jobs it currently provides and its potential to provide more jobs. To ensure that health care services remain available locally, rural communities need to understand these economic relationships. First, rural communities need to learn about their own local health care needs and take stock of their local health care system. While the emphasis at the national level is on controlling costs and eliminating duplication and overcapacity in the system (de-licensing unused hospital beds, for example), the issues are very different in rural communities.

One of the issues that underlies differences between health care systems in rural and urban areas is demographics. In rural areas, there are proportionately more elderly, more children living in poverty, higher unemployment and lower incomes. Rural people report poorer health and have more chronic health conditions. Rural people are more likely to be uninsured and have fewer health services available in the town where they live. Finally, people in rural communities are more likely to derive part of their income from the health care industry (either directly or indirectly).

Another issue that underlies the differences between urban and rural health care is the structure of the systems. In general, there are fewer providers and hospitals in rural areas, and they operate on very thin profit margins. In fact, many rural hospitals operate at a loss, with too few patients to cover daily costs. Also, until recently, most rural health care systems had been locally operated and controlled.

Table 1. United States Health Expenditure and Employment Data for 1970-2015; Projected for 2016, 2020 & 2024

| Year | Total Health Expenditures (\$ billions) | Per Capita Health Expenditures (\$) | Health as % of GDP (%) | Health Sector Employment (thousands) | Avg. Annual Increase in Employment (%) | |
|--------------------|---|-------------------------------------|------------------------|--------------------------------------|--|--|
| 1970 | \$75 | \$356 | 7.0% | 3,052 | | |
| 1980 | \$256 | \$1,110 | 8.9% | 5,278 | 7.3% | |
| 1990 | \$724 | \$2,855 | 12.1% | 7,814 | 4.8% | |
| 2000 | \$1,378 | \$4,881 | 13.4% | 10,103 | 2.9% | Employment Based on SIC ¹ |
| 2001 | \$1,495 | \$5,243 | 14.1% | 10,381 | 2.8% | |
| 2002 | \$1,638 | \$5,694 | 14.9% | 10,673 | 2.8% | |
| 2003 | \$1,778 | \$6,129 | 15.4% | 11,816 | N/A | |
| 2004 | \$1,906 | \$6,508 | 15.5% | 12,056 | 2.0% | |
| 2005 | \$2,035 | \$6,887 | 15.5% | 12,314 | 2.1% | |
| 2006 | \$2,167 | \$7,265 | 15.6% | 12,602 | 2.3% | |
| 2007 | \$2,304 | \$7,652 | 15.9% | 12,946 | 2.7% | |
| 2008 | \$2,414 | \$7,944 | 16.4% | 13,289 | 2.6% | Employment Based on NAICS ² |
| 2009 | \$2,506 | \$8,175 | 17.4% | 13,542 | 1.9% | |
| 2010 | \$2,604 | \$8,428 | 17.4% | 13,778 | 1.7% | |
| 2011 | \$2,705 | \$8,698 | 17.4% | 14,027 | 1.8% | |
| 2012 | \$2,817 | \$8,996 | 17.4% | 14,281 | 1.8% | |
| 2013 | \$2,919 | \$9,257 | 17.4% | 14,490 | 1.5% | |
| 2014* | \$3,080 | \$9,695 | 17.7% | 14,689 | 1.4% | |
| 2015* | \$3,244 | \$10,125 | 18.0% | 15,034 | 2.4% | |
| Projections | | | | | | |
| 2016 | \$3,403 | \$10,527 | 18.1% | | | |
| 2020 | \$4,274 | \$12,741 | 18.5% | | | |
| 2024 | \$5,425 | \$15,618 | 19.6% | | | |

Sources: Bureau of Labor Statistics; U.S. Department of Labor; Employment, Hours, and Earnings www.bls.gov/webapps/legacy/cesbtab1.htm and the Center for Medicare & Medicaid Services, National Health Expenditures 1970-2013 and National Health Expenditure Projections 2016-2024, website: <http://cms.hhs.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html>, updated 7/30/15.

*Health expenditures for 2014 and 2015 are projections and 2015 employment is part-year.

¹ Based on Standard Industrial Classification (SIC) codes for health sector employment.

² Based on North American Industry Classification System (NAICS) for health sector employment.

Pressures outside of the health care system also come into play in rural communities, creating stresses not applicable to urban systems. Cyclical commodity prices cause a periodic farm financial crisis, undermining the financial viability of family farms and business, such as farm implement manufacturers and dealers. Businesses located in rural areas tend to be small, often do not provide health insurance, and are highly vulnerable to changing economic conditions. Although these stresses can lead to mental and physical health problems, many people do not seek help for their health problems. Some will say they have too little time to seek out health care services, especially if they are working two jobs to make ends meet. For others, the strong sense of pride and self-reliance inherent among rural people may preclude many from seeking care, especially if they cannot afford it. What is the ultimate impact of these changes and

stresses on rural communities? Will it be a net gain or net loss, or will it all balance out in the end?

On the positive side, urban-based specialists may set up periodic office hours in rural clinics, health centers and hospitals; an urgent care center may open; and air medivac helicopters and other emergency medical services may be strategically located in a rural community. These services, while provided by many urban health systems, are convenient for rural residents, and otherwise would not be available to rural communities.

On the negative side, ties with financially strong urban health care providers can be detrimental to rural providers if the rural providers lose decision-making ability. Rural providers may also find themselves aligned with an organization that does not share their mission and values, or the rural provider may be unable to meet the expectations of the larger provider.

Anecdotal evidence suggests that the downsides can be significant and potentially devastating for a rural community. In some instances, urban or other outside interests have purchased rural clinics and hospitals and then closed them because they did not provide sufficient profit. Employers have signed contracts with insurance plans that push patients to the city for their health care, bypassing local, more convenient services. Emergency medical service providers have changed their service areas or closed their doors. When urban health organizations encourage insured rural residents to spend their health care dollars in the city rather than to purchase equivalent services locally, it can have a significant negative economic impact and result in a loss of health dollars within the local community. In addition, out of town trips to obtain health care naturally offer opportunities to spend dollars out of town that may have been spent locally. These out-migrated dollars are missed opportunities and can significantly impact the local economic base.

Rural communities need to overcome inertia and take stock of local health care. Rural providers should be challenged to organize, whether through formal or informal mechanisms, so that they can compete with urban systems. In general, regional strategies will probably work better than local ones. Providers must be willing to take risks and coordinate services.

Well-positioned rural health systems can meet these challenges. Fragmentation is a big problem in health systems, but smaller, independent rural systems have more opportunity to create linkages. The scarce resources available to rural health services have engendered innovation and efficiencies as a matter of survival. Strong local leadership helps sustain these systems. Many rural health organizations are committed to fiscal accountability, expressed as quality health care at low cost. It should not be too difficult to remind rural residents of the long-term commitment these rural providers have made in the communities they serve. In time, rural providers need to offer sustainable health care services that best meet community need.

Success in meeting these challenges can be measured in terms of increased local services, more spending on locally-available health care, local control of health resources, negotiation of good reimbursement rates for providers, and high levels of community satisfaction with local health care.

If rural health providers do not act, they will face the prospect of losing jobs; rural communities could lose health care services; and everybody may lose local control of their health care.

Health Services and Rural Development

Though the connections between health care services and rural development are often overlooked, at least three primary areas of commonality exist. A strong health care system can help attract and maintain business and industry growth, attract and retain retirees, and also create jobs in the local area.

Health Services and Community Industry

Studies have found that quality of life factors play a dramatic role in business and industry location decisions. Health care services represent some of the most significant quality of life factors for at least three reasons. First, good health and education services are 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 inconvenient 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 productivity factor is good health. Thus, investments in health care services can be expected to yield dividends in the form of increased labor productivity. The third factor that business and industry consider in location decisions is cost of health care services. A 1990 site selection survey concluded that corporations looked carefully at health care costs, and sites that provided health care services at a low cost sometimes received priority. In fact, 17 percent of the respondents indicated that their companies used health care costs as a tie-breaking factor between comparable sites (Lyne, 1990).

Health Services and Retirees

A strong and convenient health care system is important to retirees, a special group of residents whose spending and purchasing can provide a significant source of income for the local economy. Many rural areas have environments (for example, moderate climate and outdoor activities) that enable them to attract and retain retirees. Retirees represent a substantial amount of spending, including the purchasing power associated with pensions, investments, Social Security, Medicare and other transfer payments. 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

Job creation represents an important goal for most rural economic development programs. National employment in health care services increased 75 percent from 1990 to 2010. In rural areas, employment in health-related services often accounts for 10 to 15 percent of total employment. This reflects the fact that the hospital is often the second largest employer in a rural community (local government including schools typically being the largest employer).

Another important factor is the growth of the health sector. Health services, as a share of gross domestic product (GDP), has increased over time. In 1990, Americans spent \$1.16 trillion on health care (2010\$), which accounted for 12.1 percent of the GDP. In 2010, health care costs increased to \$2.6 trillion, or 17.4 percent of the GDP. If current trends continue, projections indicate that Americans will spend 18.5 percent of GDP on health care by 2020. Capturing a share of this economic growth can only help a rural community.

Understanding Today's Health Care Impacts and Tomorrow's Health Care Needs

A strong health care system represents an important part of a community's vitality and sustainability. Thus, a good understanding of the community's health care system can help leaders and citizens fully appreciate the role and contributions of the health care system in maintaining community economic viability. In addition, a community should also examine the future health care needs of its residents in order to position itself so that it can respond to those needs. This report is designed to provide the kind of information that a community can use to understand its health care system and some possible indicators of current and future health care needs of its residents. The report begins with an examination of demographic, economic and health indicators and culminates with an illustration of the full economic impact of the health care sector in the county's economy.

The Economic Impact of the Health Care Sector An Overview of the Doniphan County Economy, Highlighting Health Care

Table 2 presents employment, income and sales data for Doniphan County for 2013. Using an alternative data source, health services employment was updated to 2014. Health care income and sales data were estimated using state average data. Data for all other economic sectors come from various government statistics and published data sources.

Table 2. Direct Employment, Income and Sales by Economic Sector and Health Services Relative Shares Compared to the State and U.S., 2013 (\$thousands)

| Sector | Employment | Total Sales (thousands) | Labor Income (thousands) | Total Income (thousands) |
|--|-------------------|------------------------------------|-------------------------------------|-------------------------------------|
| Agriculture | 579 | \$117,041 | \$15,646 | \$36,697 |
| Mining | 88 | \$16,292 | \$3,548 | \$6,260 |
| Construction | 145 | \$23,537 | \$6,705 | \$7,187 |
| Manufacturing | 366 | \$130,391 | \$19,356 | \$27,615 |
| TIPU ¹ | 198 | \$30,387 | \$9,781 | \$10,441 |
| Trade | 399 | \$51,102 | \$13,373 | \$30,125 |
| Services | 852 | \$98,707 | \$22,563 | \$55,943 |
| Health Services ² | 176 | \$11,915 | \$6,186 | \$6,956 |
| Heath and Personal Care Stores | 4 | \$204 | \$50 | \$98 |
| Veterinary Services | 0 | \$0 | \$0 | \$0 |
| Offices of Physicians | 31 | \$2,645 | \$1,864 | \$1,426 |
| Offices of Dentists | 15 | \$1,429 | \$558 | \$858 |
| Offices of Other Health Practitioners | 18 | \$1,600 | \$348 | \$1,059 |
| Outpatient Care Centers | 0 | \$0 | \$0 | \$0 |
| Medical and Diagnostic Laboratories | 0 | \$0 | \$0 | \$0 |
| Home Health Care Services | 0 | \$0 | \$0 | \$0 |
| Other Ambulatory Health Care | 0 | \$0 | \$0 | \$0 |
| Hospitals | 0 | \$0 | \$0 | \$0 |
| Nursing and Community Care | 109 | \$6,037 | \$3,366 | \$3,514 |
| Residential Treatment Facilities | 0 | \$0 | \$0 | \$0 |
| Fitness Centers | 0 | \$0 | \$0 | \$0 |
| Government | 963 | \$48,530 | \$36,290 | \$46,224 |
| Total³ | 3,590 | \$515,987 | \$127,262 | \$220,491 |
| Health Services as a Percent of Total | | | | |
| County | 4.9 | 2.3 | 4.9 | 3.2 |
| State | 11.8 | 7.0 | 12.7 | 8.8 |
| Nation | 10.2 | 6.3 | 10.7 | 7.2 |

¹ TIPU is Transportation, Information and Public Utilities.

² In some Kansas Counties, various health services are consolidated within a single entity in the classification system shown here. For example, the hospital may have a long-term care unit. In such cases, it may not be possible to break out employment, income or sales information. If you have questions regarding the organization of health care services in your county, contact your local hospital administrator.

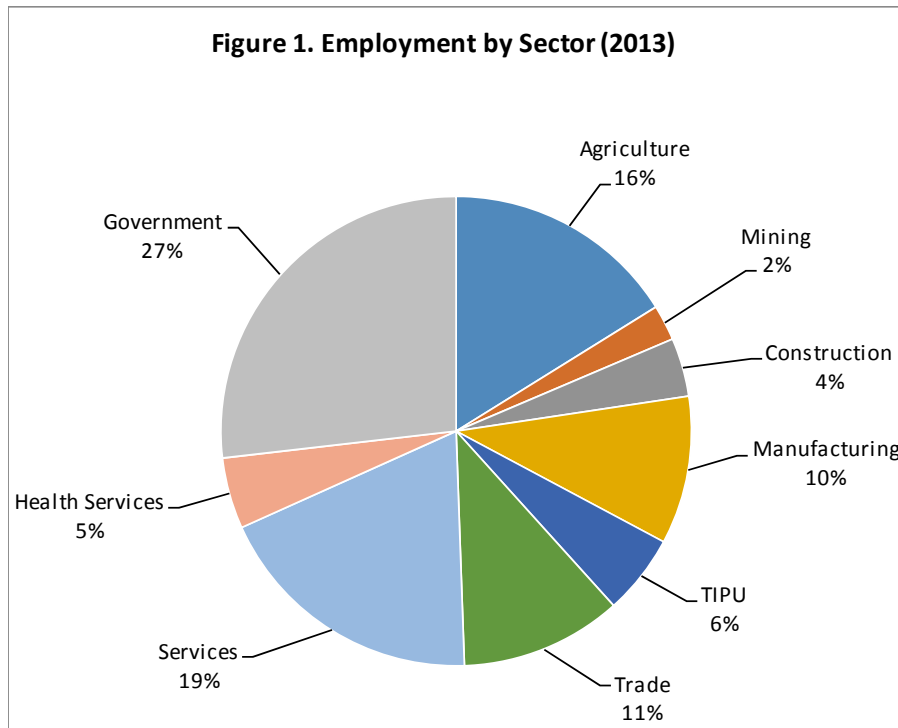
³ Due to rounding error, numbers may not sum to match total.

Source: IMPLAN Group.

The table aggregates the economic sectors into broad categories, and the employment numbers indicate “average” jobs in each sector, including full- and part-time employment. Labor income represents local wages and proprietary income. Total income is the broadest measure of income generated within the local economy, and includes labor income plus dividend, interest, rents, corporate profits, etc.

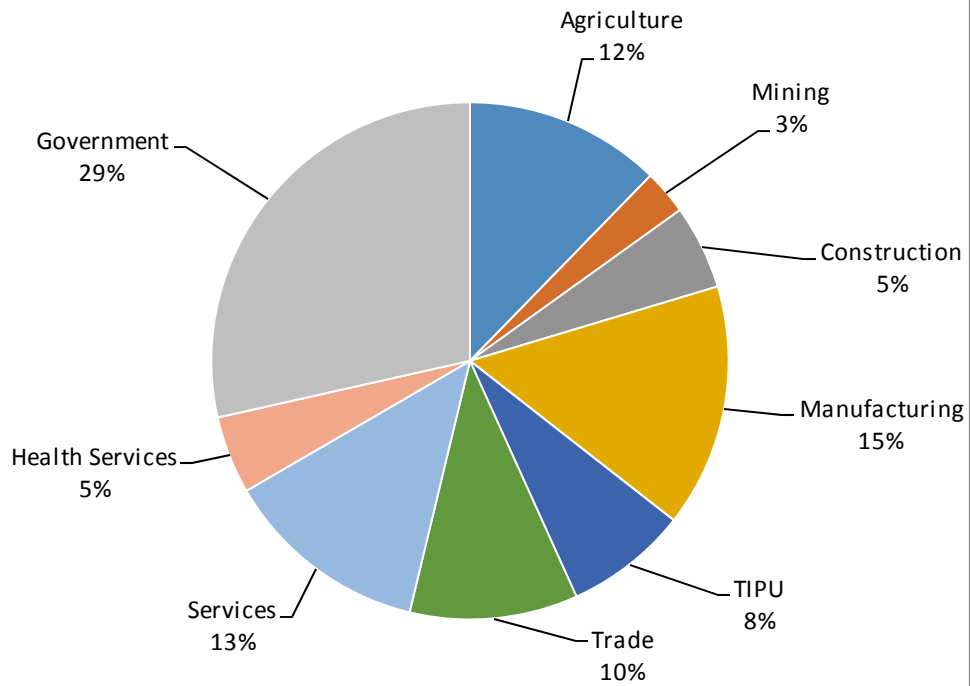
The health sector is detailed in Table 2. The numbers for each sector include not only the professionals in the sector (the doctors, dentists, etc.) but also support staff (assistants, clerks, receptionists, etc.) employed by the business. In the health sector, the Health and Personal Care Stores category includes pharmacies. We are able to separately account for Offices of Physicians and Dentists. Other Health Practitioners category includes chiropractors, optometrists, physical therapists, and other health care practitioners. Outpatient Care Centers include mental health, kidney dialysis, and other ambulatory surgical and emergency care centers. Other Ambulatory Health Care Services includes services such as ambulance services, blood banks, and other miscellaneous ambulatory health care services. We are now able to separate Residential Treatment Facilities (intellectual and developmental disabilities, inpatient mental health and substance abuse facilities) from Nursing and Residential Care. Also removed from Nursing and Residential Care are facilities that provide largely non-medical custodial care. What remains are nursing homes and assisted living facilities.

Health Services employs 176 people, 4.9 percent of all job holders in the county. Health Services for the state of Kansas employs 11.8 percent of all job holders, while 10.2 percent of all job holders in the United States work in Health Services. Health Services in the county has a number 7 ranking in terms of employment (Figure 1). Health Services is number 8 among payers of wages to employees (Figure 2) and number 8 in terms of total income (Figure 3). As with most rural areas, the health sector plays an important role in the economy.



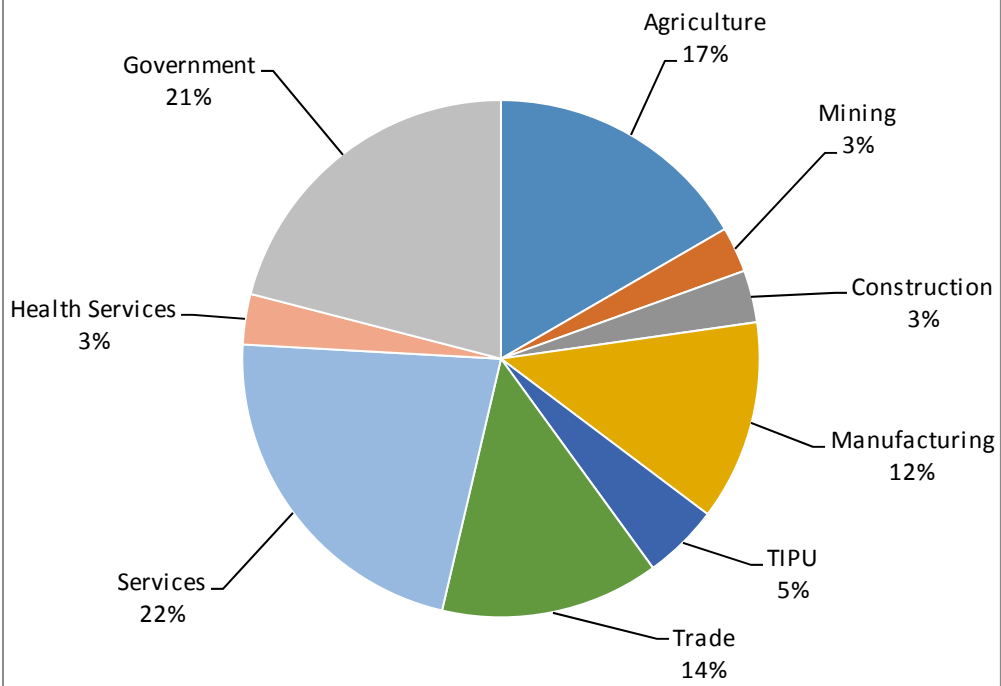
IMPLAN Group

Figure 2. Labor Income by Sector (2013)



IMPLAN Group

Figure 3. Total Income by Sector (2013)



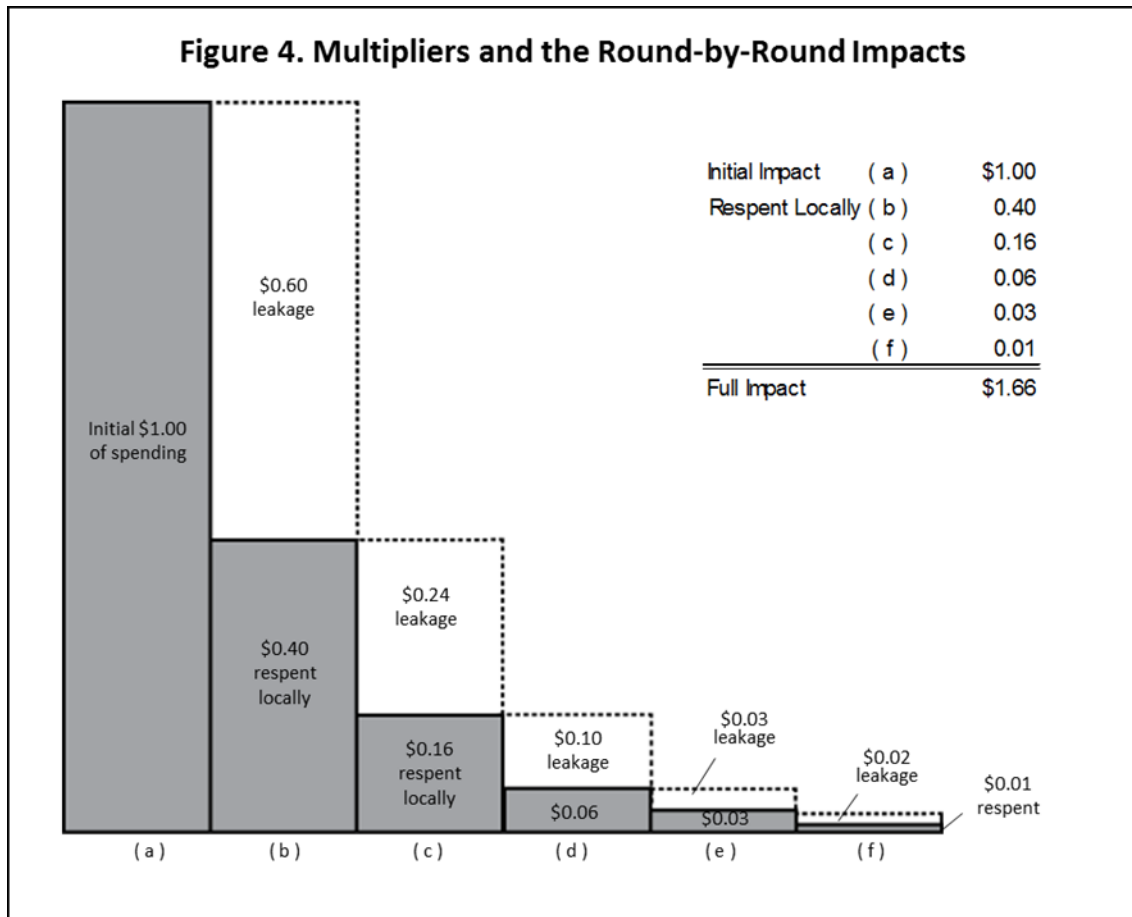
IMPLAN Group

Health Sector Impact and Economic Multipliers

The previous section detailed the direct contributions of the Health Services sector within the Doniphan County economy, but the full impact of the sector goes beyond the number of people employed and the wages they receive. The employment and income levels in the health sector have a significant impact on employment and income throughout other industries in the market area. This secondary impact or “ripple effect” comes from local businesses buying and selling to each other and from area workers spending their income for household goods and services; the ripple effect spreads the economic impact of the health sector throughout the community economy.

As dollars are spent locally, they are, in turn, re-spent for other goods and services. Some of these goods are produced locally while others are imports (the portion of the dollar spent on imports leaves the community as leakage). This spending and re-spending occurs over multiple rounds until it is finally exhausted.

Graphically, we can illustrate the round-by-round relationships modeled as shown in Figure 4. The direct effect of spending is shown in the far left-hand side of the figure (the first bar (a)). For simplification, the direct effects of a \$1.00 change in the level of spending plus the indirect effects spill over into other sectors and create an additional 66 cents of activity. In this example, the multiplier is 1.66. A variety of multipliers can be calculated using these analysis techniques.



Tables 3 and 4 illustrate the ripple effect in the county. As an example, Table 3 shows that the nursing and community care sector employs 109 people and has an employment multiplier of 1.11. This means that for each job created in the nursing and community care sector, another 0.11 jobs are created in other businesses and industries in the county's economy. The direct impact of the 109 nursing and community care employees results in an indirect impact of 12 jobs ($109 \times 0.11 = 12$) throughout all businesses and industries in the market area. Thus, the nursing and community care sector employment had a total impact on area employment of 121 jobs ($109 \times 1.11 = 121$).

Table 3. Health Sector Impact on Employment, 2013

| Health Sectors | Direct Employment | Economic Multiplier | Total Employment |
|---------------------------------------|--------------------------|----------------------------|-------------------------|
| Health and Personal Care Stores | 4 | 1.11 | 4 |
| Veterinary Services | 0 | 0.00 | 0 |
| Offices of Physicians | 31 | 1.20 | 37 |
| Offices of Dentists | 15 | 1.16 | 17 |
| Offices of Other Health Practicioners | 18 | 1.13 | 20 |
| Outpatient Care Centers | 0 | 0.00 | 0 |
| Medical and Diagnostic Laboratories | 0 | 0.00 | 0 |
| Home Health Care Services | 0 | 0.00 | 0 |
| Other Ambulatory Health Care | 0 | 0.00 | 0 |
| Hospitals | 0 | 0.00 | 0 |
| Nursing and Community Care | 109 | 1.11 | 121 |
| Residential Treatment Facilities | 0 | 0.00 | 0 |
| Fitness Centers | 0 | 0.00 | 0 |
| Total | 176 | | 200 |

Note: Most data obtained from secondary sources; some data unavailable or extrapolated
IMPLAN Group

Similarly, multiplier analysis can estimate the total impact of the estimated \$3,366,000 direct income for nursing and community care employees shown in Table 4. The nursing and community care sector had an income multiplier of 1.10, which indicates that for every one dollar of income generated in the nursing and community care sector, another \$0.10 is generated in other businesses and industries in the county's economy. Thus, the nursing and community care sector had an estimated total impact on income throughout all businesses and industries of \$3,705,000 ($\$3,366,000 \times 1.10 = \$3,705,000$ (discrepancies are due to rounding)).

Table 4. Health Sector Impact on Income, 2013 (\$thousands)

| Health Sectors | Direct Income (thousands) | Economic Multiplier | Total Impact (thousands) |
|---------------------------------------|--------------------------------------|--------------------------------|-------------------------------------|
| Heath and Personal Care Stores | \$50 | 1.24 | \$62 |
| Veterinary Services | \$0 | 0.00 | \$0 |
| Offices of Physicians | \$1,864 | 1.09 | \$2,033 |
| Offices of Dentists | \$558 | 1.13 | \$628 |
| Offices of Other Health Practitioners | \$348 | 1.17 | \$407 |
| Outpatient Care Centers | \$0 | 0.00 | \$0 |
| Medical and Diagnostic Laboratories | \$0 | 0.00 | \$0 |
| Home Health Care Services | \$0 | 0.00 | \$0 |
| Other Ambulatory Health Care | \$0 | 0.00 | \$0 |
| Hospitals | \$0 | 0.00 | \$0 |
| Nursing and Community Care | \$3,366 | 1.10 | \$3,705 |
| Residential Treatment Facilities | \$0 | 0.00 | \$0 |
| Fitness Centers | \$0 | 0.00 | \$0 |
| Total | \$6,186 | | \$6,836 |

Note: Most data obtained from secondary sources; some data unavailable or extrapolated.
IMPLAN Group

In this manner, the total employment and income impacts of all the health services sectors can be estimated. In Table 3, the total employment impact of the health services sector results in an estimated 200 jobs in the local economy. In Table 4, the total income impact of health services results in an estimated \$6,836,000 for the economy.

Table 5 shows the retail sales that the health sector helps to generate. To estimate this, this study incorporates a retail sales capture ratio (retail sales to total personal income). Doniphan County had retail sales of \$29,810,000 and \$316,037,000 in total personal income. Thus, the estimated retail sales capture ratio equals 9.4 percent. Using this as the retail sales capture ratio for the county, this says that people spent 9.4 percent of their income on retail goods and services within the market. By taking all the household income associated with health sector activities and multiplying by the retail sales capture ratio, we can estimate the impacts of the health sector on area retail sales. Thus, the total retail sales generated by the retail sector equals \$645,000 ($\$6,836,000 \times 9.4\% = \$645,000$ (discrepancies are due to rounding)). This is a conservative estimate, as this method does not consider the impact of any local purchases made by the health services businesses.

Finally, the last column shows the county sales tax collections associated with the retail sales. This includes only county sales tax collection. It does not include state or other local municipal sales taxes. If the county did not levy a sales tax, the amount is zero. If the county sales tax rate changed in 2013, the rate applied was the blended rate reflecting the proportion of the year each rate applied. The point of this calculation is to show how local health sectors also contribute to the public finances supporting essential public services.

Table 5. Health Sector Impact on Retail Sales and County Sales Taxes, 2013 (\$thousands)

| Health Sectors | Total Impact (thousands) | Retail Sales (thousands) | Sales Tax (thousands) |
|---------------------------------------|-------------------------------------|-------------------------------------|----------------------------------|
| Heath and Personal Care Stores | \$62 | \$6 | \$0 |
| Veterinary Services | \$0 | \$0 | \$0 |
| Offices of Physicians | \$2,033 | \$192 | \$2 |
| Offices of Dentists | \$628 | \$59 | \$1 |
| Offices of Other Health Practitioners | \$407 | \$38 | \$0 |
| Outpatient Care Centers | \$0 | \$0 | \$0 |
| Medical and Diagnostic Laboratories | \$0 | \$0 | \$0 |
| Home Health Care Services | \$0 | \$0 | \$0 |
| Other Ambulatory Health Care | \$0 | \$0 | \$0 |
| Hospitals | \$0 | \$0 | \$0 |
| Nursing and Community Care | \$3,705 | \$349 | \$3 |
| Residential Treatment Facilities | \$0 | \$0 | \$0 |
| Fitness Centers | \$0 | \$0 | \$0 |
| Total | \$6,836 | \$645 | \$6 |

Summary and Conclusions

The Health Services sector of Doniphan County, Kansas, plays a large role in the area's economy. Health Services represents one of the largest employers in the area and also serves as one of the largest contributors to income. Additionally, the health sector has indirect impacts on the local economy, creating additional jobs and income in other sectors. The health sector also contributes substantially to retail sales in the region. All of this demonstrates the importance of the health care sector to the local economy.

While the estimates of economic impact are themselves substantial, they are only a partial accounting of the benefits to the county. Health care industries in rural counties help to preserve the population base, invigorating the communities and school systems. Similarly, many hospitals and nursing care facilities have active community outreach programs that enhance community services and the quality of life for community residents.

A vigorous and sustainable health care system is essential not only for the health and welfare of community residents, but to enhance economic opportunity as well. Health-related sectors are among the fastest growing in economy. Given demographic trends, this growth is likely to continue. The attraction and retention of new business and retirees also depends on access to adequate health care services.

While industry trends related to health care are positive overall, many rural communities have significant challenges. The economics of health care are rapidly changing. As health care costs escalate and government funding becomes tighter, rural markets may become less attractive to

many providers. This will lead to the continued restructuring of rural health care services in many areas.

If a community wants to maintain the benefits associated with accessible and affordable health care, it must actively work to meet these challenges. The challenges cannot be met by those directly responsible for health care administration alone. They require a community-wide response involving government, business and civic leaders, and they frequently incorporate outside assistance from professional resources providers, such as the Kansas Hospital Association, the Office of Local and Rural Health, the Kansas Department of Health and Environment, and others.

In meeting current and future challenges, health care and community leaders can engage in an ongoing process of strategic health planning. This is continuous effort to maintain and enhance the community's health care situation. The strategic health planning process 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, the community must provide the energy and commitment.

Selected References

- 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.
- Deller, Steven (2004). "Basics of Input-Output Modeling." Department of Applied and Agricultural Economics, University of Wisconsin-Madison.
- Doeksen, Gerald A., Tom Johnson, Diane Biard-Holmes and Val Schott (1988). "A Healthy Health Sector is Crucial for Community Economic Development." *Journal of Rural Health*. Vol. 14, No. 1, pp. 66-72.
- Lyne, Jack (1988). "Quality-of-Life Factors Dominate Many Facility Location Decision." *Site Selection Handbook*. (33), 868-870.
- Lyne, Jack (1990). "Health Care and Education: Important QOL Factors, But Who's Accurately Measuring Them?" *Site Selection Handbook*. 35(5), 832-838.
- McGuire T. (1986). *On the Relationship Between Infrastructure and Economic Development*. Stony Brook: State University of New York.
- 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.
- Toseland, R., and J. Rasch (1978). "Factors Contributing to Older Persons' Satisfaction with Their Communities." *The Gerontologist*. 18(4), 395-402.

Glossary of Terms

Employment: annual average number of full and part-time jobs, including self-employed for a given economic sector.

Employment Economic Multiplier: indicates the total jobs in the economy closely tied, in this case, to one job in the health sector.

Employee Compensation: total payroll (wages, salaries and certain benefits) paid by local employers.

Government Sector: includes all federal, state and local government enterprises; federal, state and local electric utilities; state and local government passenger transit; state and local government education and non-education; and federal military and non-military.

Gross Domestic Product (GDP): the total value of output of goods and services produced by labor and capital investment in the United States.

Health and Personal Care Stores: includes pharmacies.

Income Economic Multiplier: indicates total income generated in the economy due to one dollar of income, in this case, in the health sector.

Indirect Business Taxes: sales, excise fees, licenses and other taxes paid during normal operation. All payments to the government except for income taxes.

Labor Income: employee compensation (wages, salaries, and certain fringe benefits) plus proprietary income.

Multipliers: Its calculation is based on the structure of the local economy. All of the buying and selling relationships between businesses and consumers are charted in an economic transactions table. When a dollar is spent in one area of the economy, all of the economic interconnections are stimulated as the effect “ripples” to other areas of the economy. The effect is caused by businesses buying and selling goods or services to each other and by local labor who use their income to purchase household goods and services. Over successive rounds of spending and re-spending, the effect of the original dollar is multiplied to some new, larger level of activity. Eventually, the economic “leakages” associated with the purchase of imported goods and non-local taxes and investments causes the ripple effect to finally run out. Multipliers are derived through algebraic calculations of the economic transactions table of the local economy.

Nursing and Community Care: provides inpatient nursing and rehabilitative services. The care is generally provided for an extended period of time to individuals requiring nursing care. This group also includes establishments providing a range of residential and personal care services with on-site nursing care facilities for (1) the elderly and other persons who are unable to fully care for themselves and/or (2) the elderly and other persons who do not desire to live independently.

Offices of Doctors, Dentists, and Other Health Practitioners: includes physicians, dentists, chiropractors, optometrists, other health care professionals, and all support staff employed by these professionals.

Other Ambulatory Health Care Services: provides ambulatory health care services (except offices of physicians, dentists, and other health practitioners; outpatient care centers; medical laboratories and diagnostic imaging centers; and home health care providers).

Other Property Income: corporate income, rental income, interest and corporate transfer payments.

Proprietor Income: income from self-employment (farmers and business proprietors, for example).

Personal Income: income received by individuals from all sources (employment, Social Security, et cetera).

Residential Treatment Facilities: providing residential care (but not licensed hospital care) to people with intellectual and developmental disabilities, mental illness, or substance abuse problems.

Total Income: labor income plus other property income (dividends, rents, corporate profits, etc.) plus indirect business taxes.

Total Sales: total industry production for a given year (industry output).

Kansas State University Agricultural Experiment Station and Cooperative Extension Service, Manhattan, Kansas.

It is the policy of Kansas State University Agricultural Experiment Station and Cooperative Extension Service that all persons shall have equal opportunity and access to its educational programs, services, activities, and materials without regard to race, color, religion, national origin, sex, age or disability. Kansas State University is an equal opportunity organization.

Issued in furtherance of Cooperative Extension Work, Acts of May 8 and June 30, 1914, as amended. Kansas State University, County Extension Councils, Extension Districts, and United States Department of Agriculture Cooperating, John Floros, College of Agriculture.