

# **Measuring the Impact of the Healthcare Sector on a Local Economy:**

## **Sharkey-Issaquena County, Mississippi**

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**Measuring the Impact of the Health Sector on a Local Economy:  
Sharkey-Issaquena County, Mississippi**

**Introduction**

Communities often overlook the economic influence of the healthcare sector on their economies. Hospitals, nursing homes, physicians, dentists, pharmacies, home health agencies and ambulance services are just a few of the providers that make up the healthcare sector. In a rural community, this particular sector generally represents a proportionally larger share of the local economy than it does in urban areas, with the rural hospital typically being one of the largest employers in the area.

The healthcare industry is changing not only in urban areas but also in rural areas due to policy- and market-driven forces (Ormand et al.). With the passing of the Balanced Budget Act of 1997, Medicare and Medicaid payments to small rural hospitals are often inadequate to maintain the financial health of those institutions. The higher proportion of an elderly population in rural areas with chronic conditions makes it difficult for a variety of healthcare providers to achieve a patient mix that is needed to offset the costs of high use among a few. This situation could trigger a reduction in services, the decision to not serve certain types of patients, or the closing of a particular healthcare entity.

Closure of a rural hospital, for example, can represent a serious threat not only to the health but also to the economic well-being of the community. The availability of quality healthcare is critical to long-term economic development in rural communities (Doeksen et al.). Employers looking for a place to establish a new business choose to locate in an area that has good education and healthcare systems already in place. Attracting retirees to a community is

also more successful when there are quality healthcare providers available locally to meet their demand for services.

The demographic and socioeconomic composition found in rural communities can influence the demand placed on the health care delivery system. The types of services demanded and those supplied may vary between communities based on demographic factors and the availability of quality healthcare providers.

This report was developed by a team of economists working on a project called Rural Health Works in Mississippi. The following sections will address selected demographics and the health statistics of the county population along with the economic importance of the healthcare sector to the Sharkey-Issaquena County economy.

### **Healthcare Expenditures in Mississippi**

Consistent with national trends, data in Table 1 show that healthcare expenditures in Mississippi have more than doubled during the past two decades, growing from \$1.4 billion in 1980 to \$3.6 billion in 1999. Of particular importance is the fact that healthcare services represent a growing component of the state's economy as well. In 1980, healthcare expenditures accounted for only 3.23% of Mississippi's gross state product, but by 1999 this figure had increased to 5.60%. This represents an average annual growth rate (in real dollars) for healthcare services of about 5% over the twenty-year period, which is greater than the average annual growth rate of about 2% for the total gross state product during the same period.

As shown in Table 2, growth in personal healthcare spending in Mississippi averages 5.31% from 1980 to 1998, increasing from nearly \$3.5 billion in 1980 to \$8.8 billion in 1998 (in real dollars). The major components of personal healthcare spending include hospital care,

**Table 1. Gross State Product (GSP) and Health Services Component of GSP  
Mississippi, 1980-1999**

Year	Total Gross State Product (millions of current \$)	Health Services	Total Gross State Product (millions of 1999 \$ <sup>1</sup> )	Health Services	Health Services as a Percent of GSP (%)
1980	21,532	696	43,534	1,407	3.23
1981	24,203	800	44,359	1,466	3.31
1982	24,857	902	42,914	1,557	3.63
1983	26,190	966	43,808	1,616	3.69
1984	29,246	1,051	46,895	1,685	3.59
1985	30,669	1,105	47,486	1,711	3.60
1986	31,438	1,186	47,788	1,803	3.77
1987	33,844	1,352	49,634	1,983	3.99
1988	36,022	1,468	50,729	2,067	4.08
1989	37,657	1,618	50,594	2,174	4.30
1990	39,175	1,829	49,935	2,331	4.67
1991	41,311	2,051	50,532	2,509	4.96
1992	44,222	2,304	52,512	2,736	5.21
1993	47,384	2,412	54,631	2,781	5.09
1994	51,358	2,685	57,734	3,018	5.23
1995	54,562	2,942	59,646	3,216	5.39
1996	56,575	3,267	60,073	3,469	5.77
1997	58,743	3,483	60,976	3,615	5.93
1998	61,417	3,547	62,773	3,625	5.78
1999	64,286	3,603	64,286	3,603	5.60
Average Annual Percentage Growth	5.93	9.04	2.07	5.07	

<sup>1</sup> The CPI-U (1982-84=100) for the U.S. was adjusted to make 1999 the base year and this index was used to deflate nominal dollar values.

Source: Compiled from Bureau of Economic Analysis, Regional Accounts Data.

**Table 2. Personal Healthcare Spending, Mississippi, Selected Years, 1980-1998**

Healthcare Category	Average Annual Percentage Growth (%)	1980	1985	1990	1995	1998
		(millions of 1998 \$ <sup>1</sup> )				
Hospital Care	4.59	1,715	2,163	2,727	3,709	3,848
Physician & Other Professional Services	6.31	736	1,029	1,462	1,874	2,212
Prescription Drugs	7.08	281	362	510	686	962
Nursing Home Care	5.43	265	291	387	557	687
Dental Services	3.93	158	180	216	281	317
Home Healthcare	10.90	45	85	178	348	293
Nonprescription Drugs and Other Medical Nondurables	2.38	170	212	236	249	260
Other Personal Healthcare	4.91	89	86	112	173	211
Vision Products & Other Medical Durables	4.31	44	52	70	87	93
<b>Total Spending</b>	<b>5.31</b>	<b>3,499</b>	<b>4,458</b>	<b>5,898</b>	<b>7,965</b>	<b>8,882</b>

<sup>1</sup> The CPI-U (1982-84=100) for the U.S. was adjusted to make 1998 the base year and this index was used to deflate nominal dollar values.

Source: Compiled from data obtained from the Healthcare Financing Administration

physician and other professionals, prescription drugs, and home health services. The data in Table 2 show more money was spent on home healthcare than any other health category, averaging 10.9% growth during the period. Prescription drugs and physician and other professional services ranked second and third with annual growth rates of 7.08% and 6.51% respectively. Table 3 contains similar data for the same time period; however, it reflects per capita expenditures on healthcare. The trends in growth of the healthcare sector and expenditures are similar and there is no evidence that these trends will change in the future, given advances in medical technology and the increasing life span of the population.

**Table 3. Personal Healthcare Spending Per Capita, Mississippi, Selected Years, 1980-1998**

Healthcare Category	Average Annual Percentage Growth (%)	1980	1985	1990	1995	1998
				(1998 \$ <sup>1</sup> )		
Hospital Care	4.08	680	836	1,058	1,379	1,398
Physician & Other Professional Services	5.79	292	397	567	697	804
Prescription Drugs	6.56	111	140	198	255	350
Nursing Home Care	4.92	105	112	150	207	250
Dental Services	3.43	63	70	84	105	115
Home Healthcare	10.36	18	33	69	129	106
Nonprescription Drugs and Other Medical Nondurables	1.89	67	82	91	93	94
Other Personal Healthcare	4.40	35	33	44	64	77
Vision Products & Other Medical Durables	3.80	17	20	27	32	34
<b>Total Spending</b>	<b>4.80</b>	<b>1,388</b>	<b>1,723</b>	<b>2,289</b>	<b>2,961</b>	<b>3,228</b>

<sup>1</sup> The CPI-U (1982-84=100) for the U.S. was adjusted to make 1998 the base year and this index was used to deflate nominal dollar values.

Source: Compiled from data obtained from the Healthcare Financing Administration

### Potential Demand for Healthcare

People require different types of healthcare equipment (goods) and services, some of which may not be available locally. The amount of spending on different types of healthcare services retained within a local economy depends on a diverse set of factors. The size and types of healthcare businesses located within the community will have an impact on the welfare of the residents as well as the local economy. For purposes of this study, a business that produces or sells healthcare goods or services is defined as being a local provider if it is located inside the county. In general, people would prefer to make their purchases from local providers due to savings in travel expenses and time. However, residents will seek businesses located outside the

county if there are no local providers for a particular type of service. Therefore, it is in the best interest of the residents as well as the local economy to maintain a viable healthcare sector within the county.

As shown previously in Table 3, the average annual per capita expenditure on healthcare in Mississippi in 1998 was \$3,228. If Sharkey-Issaquena County's 8,854 residents (U.S. Census Bureau, 2000) spent this average amount, more than \$28.5 million would have been spent for healthcare services in the county. The first column in Table 4 presents Mississippi per capita expenditures by major healthcare categories in 1998. The second column contains estimated shares of each type of primary healthcare service that local businesses could provide if these businesses existed. Explanations of these estimated percentages are provided in Appendix A. The third column is the product of the first column multiplied by the second column. Multiplying the numbers in the local spending per capita column by 8,854 provides estimates of potential local spending (primary healthcare) in Sharkey-Issaquena County. The total spending potential is estimated to be \$20.5 million per year. The actual amount of spending could be greater than or less than this value depending on the type, size and quality of local providers in Sharkey-Issaquena County.

By comparing the potential local expenditures with actual local spending, the opportunity to expand local healthcare services may be assessed. For example, an existing hospital will generate a certain amount of revenue every year. If this figure is below the potential value, there may be room to expand hospital services and retain more dollars within the local economy. Knowledge of where residents actually acquire various healthcare services will also be useful in determining whether the county has potential for growth. If residents are leaving the county in search of adequate care, then there may be a potential to expand locally. However, any business

must have a reliable consumer base of a certain size in order to remain viable. The size of the consumer base is dependent on population demographics within the county and possibly in nearby counties.

County-level data may help identify important aspects of the local economy and potential impacts from the healthcare sector. The following sections present various types of information for Sharkey-Issaquena County and the state.

**Table 4. Estimated Potential Local Spending for Health Care in Sharkey-Issaquena County**

<b>Health Care Category</b>	<b>Mississippi Spending Per Capita</b>	<b>Percent Local Spending</b>	<b>Local Spending Per Capita</b>	<b>Potential Local Spending</b>
Hospital Care	\$1,398	61%	\$853	\$7,552,462.00
Physician & Other Professional Services	\$804	75%	\$603	\$5,338,962.00
Prescription Drugs	\$350	75%	\$263	\$2,328,602.00
Nursing Home Care	\$250	100%	\$250	\$2,213,500.00
Dental Services	\$115	75%	\$86	\$761,444.00
Home Health Care	\$106	100%	\$106	\$938,524.00
Non-Prescription Drugs and Other Medical Non-Durables	\$94	75%	\$71	\$628,634.00
Other Personal Health Care	\$77	75%	\$58	\$513,532.00
Vision Products and Other Medical Durables	\$34	75%	\$26	\$230,204.00
<b>Total Spending</b>	<b>\$3,228</b>	<b>72%</b>	<b>\$2,316</b>	<b>\$20,505,864.00</b>

<sup>1</sup> Footnotes explaining " Percent Local Spending" for each category are presented in Appendix A

## **Demographics**

Population information detailing historical growth and future projections, population density, current age distribution, and household information for Sharkey-Issaquena County and Mississippi are presented in Table 5. Between 1990 and 2000, Mississippi's population increased 10.5 percent but Sharkey-Issaquena County experienced a decrease of 1.4 percent. Sharkey-Issaquena County, with about 10.5 persons per square mile, has less than one quarter of

the population density as Mississippi (60 persons per square mile), indicating its exceedingly rural nature. The county's older residents represent 11.1 percent of the population, which is slightly lower than the state, with 12.0 percent of its total population aged 65 and older. Population in Sharkey-Issaquena County is projected through 2025 to decrease by 14.1 percent while the state's population is projected to increase by 18 percent. The number of residents in the 65 and over category is also expected to increase by 38.8 percent in the county while increasing by 73.3 percent in the state during the same time period.

According to the 2000 Census, the population of Sharkey-Issaquena County was 31.2 percent white and 68.8 percent non-white. These numbers are roughly inversely proportional to those of the state. The percentage of high school graduates in the county is much lower (38.7%) than that of the state (49.5%), and the percentage of college graduates in the county (10.5%) was also lower than the state (14.7%). NOTE: The high school and college graduate information is from the 1990 US Census population and is the most recent data available; educational attainment levels may actually be higher or lower at the time of this writing.

### **Economic Indicators**

Data presented in Table 6 give observations of economic activity in Sharkey-Issaquena County and Mississippi. The county's annual personal income is more than \$110.2 million, providing about \$12,447 of annual income per person (about \$8,000 less than the state average). The median household income in Sharkey-Issaquena County is \$17,760, which is about \$10,767 lower than the state income value (\$28,527). The county's poverty rate is 35.2 percent, which is almost twice the state's rate (18.1%).

The civilian labor force in the county is estimated to be 3,103 with 612 people employed by governments, and 544 unemployed (2000 US Census Bureau MapStats). All types of local

enterprises generate 3,434 jobs. Persons employed in non-farm, private sector jobs total about 1,235. This indicator has increased by 11.5 percent since 1990, and is markedly lower than the state indicator (31.2%). Average earnings per job are slightly more than \$12,000 per year compared to about \$23,388 for the state.

**Table 5. Selected Demographic Data for Sharkey-Issaquena County and Mississippi**

Item	County	State
Population, 2000	8854	2,844,658
Population, percent change, 1990 to 2000	-1.4%	10.5%
Persons per square mile, 2000	10.5	60.6
Populations by age, percent of total, 2000		
Under 20 years	34.9%	30.7%
20 to 64 years	54.0%	57.3%
65 years and over	11.1%	12.0%
Population projection, percent change to 2025		
Total population	-14.1%	18.2%
65 years and over	38.8%	73.3%
Race:		
White	31.2%	61.4%
Non-white	68.8%	38.6%
Persons over 25 graduating from high school, 1990		
Sharkey-Issaquena County	38.7%	49.5%
Persons over 25 graduating from college, 1990		
Sharkey-Issaquena County	10.5%	14.7%
Households, 2000	2889	1,046,434
Median Household money income, 1997	\$17,760	\$28,527
Persons below poverty, % 1997	35.2%	18.1%

Sources: US Census Bureau, Profile of General Demographic Characteristics: 2000  
US Census Bureau, MapStats; Woods and Poole Economics, Inc

**Table 6. Selected Economic Data for Sharkey-Issaquena County and Mississippi**

Item	County	State
Personal Income, 2000 (\$1,000)	\$110,210.00	\$59,545,076
Personal Income per capita, 2000	\$12,447.48	\$20,900
Civilian Labor Force, 1999	3103	1,269,955
Unemployment, 1999	544	64,666
Full-time and part-time employment by place of work, 1997	3434	1,425,691
Employment in government, 1997	612	253,888
Local government employment, full-time equivalent, 1997	126	122,256
Private non-farm employment, 1999	887	948,883
Private non-farm employment, percent change 1990 to 1999	-21.9%	31.2%
Average earnings per job, 1997	\$12,030	\$23,388
Private non-farm establishments with paid employees, 1999	146	59,834
Private non-farm establishments with less than 20 employees, 1999	137	51,931
Non-employer establishments, 1999	203	130,932
Retail sales, 1997 (\$1,000)	\$25,422 (D)	\$20,774,508
Retail sales per capita, 1997	\$3,840 (D)	\$7,605

Sources: Profile of General Demographic Characteristics, 2000, Woods and Poole Economics, Inc.; US Census Bureau MapStats

(D) Data suppressed to avoid disclosure of confidential information for Issaquena County.

There are 146 private non-farm establishments with paid employees, but 137 of these have less than 20 employees. There are 203 businesses, which do not have any paid employees (proprietorships). Retail sales in the county were more than \$ 25.4 million in 1997. This is about \$3,840 per person but is appreciably lower than the state average (\$7,605).

Table 7 shows sectors of employment in Sharkey-Issaquena County and the state. Farm employment (24.9%) and services (24.2%), were the two most significant employment sectors in 2000. Most healthcare jobs are included in the services sector, while sales of drugs and other medical durables and non-durables would be included in the retail trade sector.

**Table 7. Employment by Industry in Sharkey-Issaquena County and Mississippi, 2000**

	County	Percent of County	State	Percent of State
Farm Employment	800	24.9%	54,784	3.7%
Ag. Services, Forestry, Fishing	264	8.2%	21,168	1.4%
Mining	(L)		7,767	0.5%
Construction	(D)		87,199	5.8%
Manufacturing	(D)		239,692	16.0%
Transportation/Public Utilities	105	3.3%	70,664	4.7%
Wholesale Trade	(D)		50,991	3.4%
Retail Trade	304	9.5%	244,648	16.3%
Finance, Insurance, Real Estate	107	3.3%	78,564	5.2%
Services	778	24.2%	376,690	25.1%
Government				
Federal Civilian	44	1.4%	27,385	1.8%
Federal Military	55	1.7%	35,453	2.4%
State	22	0.7%	64,303	4.3%
Local	310	9.7%	141,036	9.4%
Total Employment	3209	100.0%	1,500,344	100.0%

Source: Bureau of Economic Analysis, Regional Accounts Data

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

(L) Less than 10 jobs, but the estimates for this item are included in the totals.

A more detailed view of personal income sources is presented in Table 8. The data indicate that 46.2 percent of total personal income came from total earnings (adjusted to place of residence) with transfer payments contributing 35.1 percent. Other data show that 85.5 percent of the total earnings that originate in employment within the county are from wages and salaries.

Finally, 26.2 percent of transfer payments were made for retirement/disability while 41.2 percent were made for medical purposes. Incidentally, during fiscal year 2001, the state's Division of Medicaid paid providers in Sharkey-Issaquena County a total of \$8,646,793 or 0.4% of the state total of \$2.089 billion for services rendered to patients with Medicaid as their health insurance carrier.

**Table 8. Personal Income Sources for Sharkey-Issaquena County and Mississippi, 2000**

Source	County Total	County Percent	State Percent
	(in \$1,000's)		
Total Personal Income <sup>1</sup>	\$110,210		
Earnings by Place of Residence <sup>2</sup>	\$50,918	46.2%	64.9%
Transfer Payments	\$38,689	35.1%	18.6%
 Total Earnings <sup>3</sup>	 \$48,374		
Wages and Salaries	\$41,382	85.5%	78.1%
Proprietors Income	\$1,383	2.9%	11.7%
Other Labor Income	\$5,609	11.6%	10.3%
 Transfer Payments	 \$38,689		
Retirement and Disability	\$10,138	26.2%	37.4%
Medical Payments	\$14,943	41.2%	38.6%
Other	\$12,608	32.6%	23.9%

<sup>1</sup> Definitions are in Appendix B, Glossary of Terms

<sup>2</sup> Total earnings adjusted to reflect earnings by place of residence

<sup>3</sup> Total earnings by place of work.

Source: Bureau of Economics Analysis (2000 Data)

### **Healthcare Availability and Utilization**

Healthcare resources are summarized in Table 9. These statistics demonstrate the availability of physicians and other selected healthcare services in the county. The rate of

availability of healthcare service providers in Sharkey-Issaquena County was lower than the state in most categories.

**Table 9. Availability of Selected Medical Providers in Sharkey-Issaquena County**

Provider Type	County Number	County Rate/1000	State Rate/1000
Hospitals (2000)	1		
Licensed Hospital Beds	29	3.3	4.2
Nursing Home (2001)	1	0.1	
Beds	60	6.8	6.2
Health Care Practitioners: (2001)			
M.D.s	2	0.3	2
Family Practice	1	0.1	0.2
Internal Medicine	1	0.1	0.3
Other	0	0.1	1.4
Dentists	1	0.1	0.4
Nurse Practitioners	4	0.5	0.5
Emergency Medical Personnel (2001)			
EMT Basics & Intermediates.	7	0.8	0.6
Paramedics	2	0.2	0.4

Note: Rate per 1000 based on 2000 Census Bureau county population data.

Sources: Mississippi State Department of Health, Division of Health Facilities Licensure & Certification; Mississippi State Department of Health, Emergency Medical Services Division; Mississippi State Board of Medical Licensure; Mississippi State Board of Nursing; Mississippi State Board of Dental Examiners; Mississippi Medical Association

### Hospital Utilization

Fifty-five of Mississippi's eighty-two counties have only one hospital and 9 counties do not have any hospitals. The other eighteen counties have two or more hospitals. Sharkey-Issaquena County has one hospital. There are four Mississippi counties that border Sharkey-Issaquena, and each one has a hospital. There are a total of 738 hospital beds in these

surrounding counties with 354 of them in one county, 268 in another, while Sharkey-Issaquena County Hospital has 29 licensed beds. Table 10 contains data showing where county residents go to receive hospital care (out-flow). Approximately 59 percent of Sharkey-Issaquena County residents

**Table 10. Hospital Discharge of Sharkey-Issaquena County Residents by Hospital**

Name of Hospital	Number <sup>1</sup>	Percent
<b>Sharkey-Issaquena Community Hospital</b>	87	40.7%
Parkview River Regional	38	17.8%
Delta Regional Medical Center	18	8.4%
University Hospital and Clinics	13	6.1%
MS Baptist Medical Center	12	5.6%
Saint Dominic Hospital	11	5.1%
Kings Daug Hospital- Greenville	8	3.7%
Vicksburg Medical Center	13	6.1%
Central MS Medical Center	3	1.4%
River Oaks Hospital	3	1.4%
Greenwood Leflore Hospital	2	0.9%
Womans Hospital at River Oaks Hospital	2	0.9%
Brentwood Behavioral Healthcare	2	0.9%
Montfort Jones Memorial Hospital	1	0.5%
North West MS Regional Medical Center	1	0.5%
<b>Total</b>	<b>214</b>	

<sup>1</sup> Aggregate Patient Origin Study, data collected during four 2-week periods from April 2001 - January 2002.

Source: Mississippi Office of Rural Health

obtained some form of hospital care outside the county during the time period studied. Data in Table 11 show the county of residence of patients receiving care from the local hospital (in-flow). Sharkey-Issaquena County Hospital had approximately 89.7 percent of its patients from Sharkey-Issaquena County and roughly the remaining 10.3 percent from Washington County during the time period being studied. In Table 11A, the patient mix of the local hospital during

the same period shows that 71 percent of the patients discharged were covered by Medicare, about 16.5 percent were covered by Medicaid, and about 7 percent were self-pay, with only about 5 percent of patients having commercial insurance coverage or Blue Cross coverage.

**Table. 11 Discharges by Hospital by County of Residence**

Sharkey-Issaquena Community		
Hospital	Frequency <sup>1</sup>	Percent
Sharkey County	78	80.4%
Washington County	10	10.3%
Issaquena County	9	9.3%
Total	97	100.0%

<sup>1</sup> Aggregate Patient Origin Study, data collected during four 2-week periods from April 2001 - January 2002.

Source: Mississippi Office of Rural Health

**Table 11A. Discharges by Hospital by Insurance Type**

Sharkey-Issaquena Community		
Hospital	Number of Discharges	Percent of Total
Medicare	69	71.13%
Medicaid	16	16.49%
Self Pay	7	7.22%
Blue Cross	4	4.12%
Other Government	1	1.03%
Total	97	100.00%

<sup>1</sup> Aggregate Patient Origin Study, data collected during four 2-week periods from April 2001- January 2002.

Source: Mississippi Office of Rural Health

## Discharge Diagnoses

Data was obtained from the Mississippi State Office of Rural Health of Sharkey-Issaquena County Hospital's patient discharge diagnoses during four, 2-week study periods between April 2001 and January 2002. Diagnoses during that time showed that 19 percent were for circulatory diseases which includes all types of heart diseases (hypertension, heart attacks, arteriosclerosis, etc.); 16 percent for endocrine/immune conditions endocrine system diseases (diabetes mellitus, thyroid and other metabolic diseases; almost 13 percent for respiratory diseases and 9 percent for mental disorders. This data is somewhat consistent to the diagnoses of county residents that sought hospital care outside the county during the same time period, which is shown below.

**Table 12. Discharge Diagnosis of Sharkey County Residents From Hospitals in Mississippi**

Disease Group	Number <sup>1</sup>	Percent
Circulatory	32	17.11%
Endocrine, Immune	17	9.09%
Digestive	16	8.56%
Mental Disorders	15	8.02%
Live newborns	15	8.02%
Respiratory	14	7.49%
Pregnancy, childbirth	14	7.49%
Injury/Poisoning	8	4.28%
Genitourinary	4	2.14%
Musculoskeletal	3	1.60%
All other categories	49	26.20%
<b>TOTAL</b>	<b>187</b>	<b>100.00%</b>

<sup>1</sup> Aggregate Patient Origin Study, data collected during four 2-week periods from April 2001 - January 2002.

Source: Mississippi Office of Rural Health

Table 12 shows the most common discharge diagnoses for residents of Sharkey-Issaquena County who were hospitalized *at any hospital in the state* during the same study period as mentioned above: 17.1 percent for circulatory diseases, 9.09 percent for immune/endocrine system deficiencies, and 8.56 percent for digestive disorders.

Information concerning hospital discharges, Medicare and Medicaid enrollment, and selected birth and death statistics are detailed in Table 13. Sharkey-Issaquena County Hospital had 510 discharges for FYE 2001. The county had a relatively higher percentage (15.1%) of

**Table 13. Health Status and Health Indicators for Sharkey-Issaquena County and Mississippi**

Status or Indicator <sup>1</sup>	County Number	County Percent/Rate	State Percent/Rate <sup>4</sup>
Hospital Discharges	510	5.7%	N/A
Medicare Enrollment (98)			
Aged (65 and over)	788	12.0%	11.5%
Disabled (Under 65)	205	3.1%	2.9%
Medicaid Eligible (2000)	2892	44.0%	19.5%
Infant Mortality (1996-2000) <sup>2</sup>	1	3.4	10.5
Live Births to Unmarried Mothers	85	72.7%	46%
Teenage Pregnancy (2000) <sup>3</sup>	30	38.3	42.9

<sup>1</sup> Definitions are in Appendix B, Glossary of Terms

<sup>2</sup> Number represents total resident live births and deaths for 2000; county rate displayed as average annual rate per 1,000 live births

<sup>3</sup> Number represents total resident live births to mothers age 12-19 for 2000; county rate displayed as births per 1,000 females (age 12-19)

<sup>4</sup> State rates are age-adjusted to year 2000 standard; per 100,000 population

Sources: Mississippi State Department of Health, Vital Statistics (2000); Department of Health and Human Services, Division of Medicaid (2000); Health Care Financing Administration (1998)

residents enrolled in Medicare than the state (11.5%); however, the county's Medicaid statistics were more than twice as much as the state's values. These Medicaid values are consistent with the extremely high population of residents in Sharkey-Issaquena County living at or below the poverty level (35.2%) as compared to the state's poverty level (18.1%). The rate of infant mortality was less than the state's rate, however, the percentage of live births to unmarried mothers in the county (72.7%) was much higher than the state (46%). Additionally, the teenage pregnancy rate in the county was relatively lower (38.3) than the state's rate (42.9).

Table 14 contains the eleven most common causes of death among Sharkey-Issaquena County residents in 2000. Cardiovascular disease, cancer, accidents, chronic lung diseases and automobile accidents were the top five reasons for death among county residents. This data is consistent with state rates for the five most common causes of death.

**Table 14. Death Rates from Selected Causes for Sharkey-Issaquena County Residents**

Causes of Death	Sharkey-Issaquena County		State of Mississippi	
	Number <sup>1</sup>	Rate <sup>2</sup>	Number <sup>1</sup>	Rate <sup>2</sup>
Cardiovascular Diseases *	30	338.8	1,119	58.1
All Types of Cancer	19	214.6	11,792	414.5
Accidents (all types)	7	79.1	612	21.5
Chronic Lung Diseases	6	67.8	1,303	45.8
Automobile Accidents	6	67.8	804	28.3
Pneumonia & Influenza	4	45.2	670	23.6
Liver Diseases	2	22.6	613	32.9
Diabetes Mellitus	1	11.3	6,080	213.0
Kidney Diseases	0	0	291	10.2
Suicide	0	0	215	11.0
Homicide	0	0	246	8.6

<sup>1</sup> Numbers are total deaths per 1,000 population

<sup>2</sup> Rates are per 100,000 population

\* Includes hypertension, cerebrovascular diseases and atherosclerosis

Source: Mississippi State Department of Health, Vital Statistics, 2000

### Healthcare Sector Economic Impacts

Businesses generate direct impacts on local economies by providing employment for residents (and possibly non-residents) and income to the employees. In addition, these businesses may purchase goods and services from other businesses and may provide tax revenue to local, state, and federal governments. Business profits and employee income are then spent in several different ways. Some spending is for goods and services provided by other local businesses, and some spending is “leaked” out of the county. These “indirect” impacts generated by a sector may be estimated with the help of an input-output model. Such a model was used to estimate the direct and indirect impacts of the healthcare sector for Sharkey-Issaquena County.

Table 15 reports the estimated impact of the local hospital on Sharkey-Issaquena County's economy. Based on 1999 IMPLAN model data and primary data gathered from FYE 9-30-01 hospital financial reports, the county's hospital provides 68 jobs and these jobs create the need for 20 additional local jobs in other employment sectors.

**Table 15. Estimated Contribution of Sharkey-Issaquena Community Hospital to the Sharkey-Issaquena County Economies**

Category	Unit of Measure	Initial Impact of Hospitals	Additional Impact of Hospitals	Total Impact of Hospitals	County Total	Hospitals as a Percent of Total
Employment	jobs	68	20	88	3,097	2.8%
Personal Income	\$	2,070,484	412,614	2,483,098	110,210,000	2.3%
Indirect Business Taxes <sup>1</sup>	\$	0	64,821	64,821	7,161,000	0.9%

<sup>1</sup>Indirect business taxes include: sales taxes, property taxes, excise taxes, and other non-income taxes. Source: Department of Agricultural Economics, Mississippi State University.

Compiled from 1999 IMPLAN model supplemented with data obtained from Sharkey-Issaquena Community Hospital

Thus, the Sharkey-Issaquena County Hospital generates an impact of 2.8 percent of the total county employment or 88 jobs. Likewise, the hospital creates \$2.07 million in personal income directly, and about \$412 thousand indirectly, for a total of 2.3 percent of the county's income (\$110.2 million). Indirect business taxes in the county of approximately \$64.8 thousand are generated by the existing hospital as it creates secondary economic activity.

In Table 16, three additional components of the healthcare sector (doctors/dentists, nursing homes and others) has been combined with the figures from the county hospital/nursing home. These additional components employ 174 people resulting in a total of 242 people employed directly by the county's healthcare sector and 42 indirectly. Total payroll for the sector is estimated to be slightly more than \$6.44 million. The existing healthcare sector has a

significant impact on employment and income throughout the other industries in Sharkey-Issaquena County. The total employment impact of Sharkey-Issaquena County's healthcare

**Table 16. Estimated Contribution of the Local Health Care Sector to the Sharkey-Issaquena County Economies**

Category	Unit of Measure	Initial Impact of Health Care Sector	Additional Impact of Health care Sector	Total Impact of Health Care Sector	County Total	Health Care as a Percent of Total
Employment	jobs	242	42	284	3,097	9.2%
Personal Income	\$	6,447,484	880,313	7,327,797	110,210,000	6.6%
Indirect Business Taxes	\$	102,000	158,161	260,161	7,161,000	3.6%

<sup>1</sup>Indirect business taxes include: sales taxes, property taxes, excise taxes, and other non-income taxes.

Source: Department of Agricultural Economics, Mississippi State University.

Compiled from 1999 IMPLAN model supplemented with data obtained from Sharkey-Issaquena Community Hospital

sector is an estimated 284 jobs that result in a total income of more than \$7.32 million and 9.2 percent of the total county employment being either directly or indirectly employed in the healthcare sector. Indirect business taxes attributed to the healthcare sector are approximately \$260 thousand or 3.6 percent of the total in the county.

## Summary and Conclusions

The economic influence of providing healthcare services is often overlooked when analyzing the local economy. Hospitals, nursing homes, physicians, dentists, pharmacies, home health agencies, and ambulance services are just a few of the providers that make up the healthcare sector. In a rural community, this particular sector represents a proportionally larger share of the local economy than it does in urban areas, with the rural hospital typically being one of the largest employers in the area. This report addresses selected demographics and the health status of the population and emphasizes the economic importance of the healthcare sector to the Sharkey-Issaquena County economy. The income and employment estimates for Sharkey-Issaquena County reinforce findings from similar research in other geographic areas.

Healthcare expenditures (in real dollars) in Mississippi have more than doubled during the past two decades, rising from \$1.4 billion in 1980 to \$3.6 billion in 1999. The economic value of healthcare as a percent of the state's gross product also increased from 3.23% in 1980 to 5.60% in 1999.

The demand for healthcare services within a geographical area is dependent upon several factors relating to socioeconomic and health status indicators. Some of these factors include the current age distribution, population density, and health status of county residents.

Healthcare services from a variety of providers located in Sharkey-Issaquena County are delivered to residents and non-residents alike. This creates substantial direct and indirect impacts on the local economy by providing residents (and possibly non-residents) with employment and income opportunities.

Financial interrelationships captured in an economic model indicate that the total impact (direct and indirect combined) of the hospital component of the healthcare sector in Sharkey-

Issaquena County results in the employment of 2.8 percent of the county's total workforce (88 jobs) and 2.3 percent of the total earned personal income (\$2.483 million). The total healthcare sector impact on employment increases from 2.8 percent to 9.2 percent of the county's total workforce being employed either directly in or indirectly because of the healthcare sector. These additional impacts cause personal income to increase from \$2.483 million or 2.3 percent to more than \$7.32 million or 6.6 percent of the county's total income. Indirect business taxes are affected in a similar manner, increasing from \$64 thousand (0.9%) to \$260 thousand or 3.6 percent of the county's total.

The results of research conducted on the Rural Health Works in Mississippi project quantify the importance of the healthcare sector in a rural economy. The economic viability of a community can depend on a strong and growing healthcare sector. The local healthcare sector can then be viewed as an economic development engine.

Comprehensive healthcare planning is essential to develop the strongest healthcare sector that efficiently and effectively meets local needs. A community can use the economic impact information provided in this report to stimulate community interest in comprehensive healthcare planning to answer questions such as the following. What healthcare services are needed and feasible in our community? What changes are needed in our existing healthcare sector? This can best be accomplished with an open community planning process that includes a cross section of community residents, healthcare providers and members of the business community. Technical assistance can be obtained from Land Grant Universities or Offices of Rural Health.

Comprehensive reports such as this one completed for other counties in Mississippi with hospitals eligible for Critical Access designation can be found on the Internet at:

**[http://msucares.com/health/health/rh\\_economics.html](http://msucares.com/health/health/rh_economics.html)**

**Appendix A**  
**Footnotes for Table 4**

1. This estimate is an extrapolation from Kentucky's experience. Kentucky's Medicaid program offers a wider range of services than required by Medicaid. To restrain Medicaid cost increases, Kentucky established a primary care gatekeeper program several years ago. This program is thought to have an impact with respect to appropriate utilization of care, but is not felt to be fully effective. Kentucky Medicaid eligible may use healthcare differently than individuals insured through commercial insurance plans. A 1996 study compared local to non-local use by 300,500 Medicaid eligible people who reside in 49 rural counties in Southeast Kentucky. The aggregate of the 49 counties retained 61% of all hospital expenditures. Measuring by expenditure is important, particularly in hospital care, because tertiary care is far more expensive. This percent was applied to Table 4.
2. The federal Bureau of Primary Healthcare (BPHC) required that applicants for Community/Migrant Health Centers (C/MHC) grants (330 clinics) develop a needs assessment to justify staffing of the clinic with physicians, midlevels, dentists, optometrists, pharmacists, and other providers. To help support the needs assessment and assure consistency in needs assessment assumptions, BPHC provided a formula, based on age and sex of the service area population that derived the total number of all ambulatory care visits. The formula estimates that 75% of all ambulatory care visits would be to primary care physicians. Note that these estimates use visits as the denominator. The BPHC rate was applied here.
3. Home healthcare is low technology care and can easily be offered by rural-based providers.
4. Nursing home care is low technology care, yet very expensive. In Kentucky, the average annual cost per patient excluding physician services and drugs is \$35,000 per patient year. Nursing home costs may vary significantly by state. Nursing home care can easily be provided in any rural community.

## **Appendix B Glossary of Terms**

The Rural Health Works in Mississippi research team recommended that a glossary be included at the end of this county report. The team will review this list and add or delete terms as needed. Some definitions were adapted from the report entitled “The Importance of the Healthcare Sector on the Economy of Atoka County, Oklahoma”, Doeksen et al, Oklahoma Cooperative Extension Service at Oklahoma State University.

**Balanced Budget Act (BBA):** Signed in 1997 by President Clinton, this omnibus legislative package was primarily intended to balance the federal budget by 2002. This legislation contains major Medicare and Medicaid reforms, and a number of key rural health provisions.

**Gross state product (GSP):** The total output of goods and services produced by labor and property located within the state being considered

**Medicaid:** State administered program, funded by state and federal governments, which provides medical assistance to persons meeting local income and other eligibility criteria

**Medicare:** Federal national insurance program which covers certain health services for persons over age 65 and other selected eligible persons.

**Personal income:** Income received by individuals from all sources.

**Poverty rate:** Percent of individuals who live at or below the federal poverty level. In 1998, the federal poverty level of a family of four was \$16,450.

**Primary care physicians:** ly refers to family physicians, practitioners, obstetricians and gynecologists, and internists. Primary care physicians provide the first level of comprehensive healthcare.

**Teenage pregnancy:** Live births and reportable spontaneous fetal deaths and induced terminations to mothers less than 20 years of age.

**Transfer dollars:** Dollars flowing to individuals in the community as income or income subsidy from state or federal sources, such as government payments for healthcare (Medicare and Medicaid), supplemental security income (SSI), social security and other retirement income, and TAN-F (Temporary Assistance for Needy Families).

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