

# **ECONOMIC IMPACTS OF HEALTHCARE IN THE RURAL HEALTH NETWORKS OF FLORIDA**

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## **Introduction**

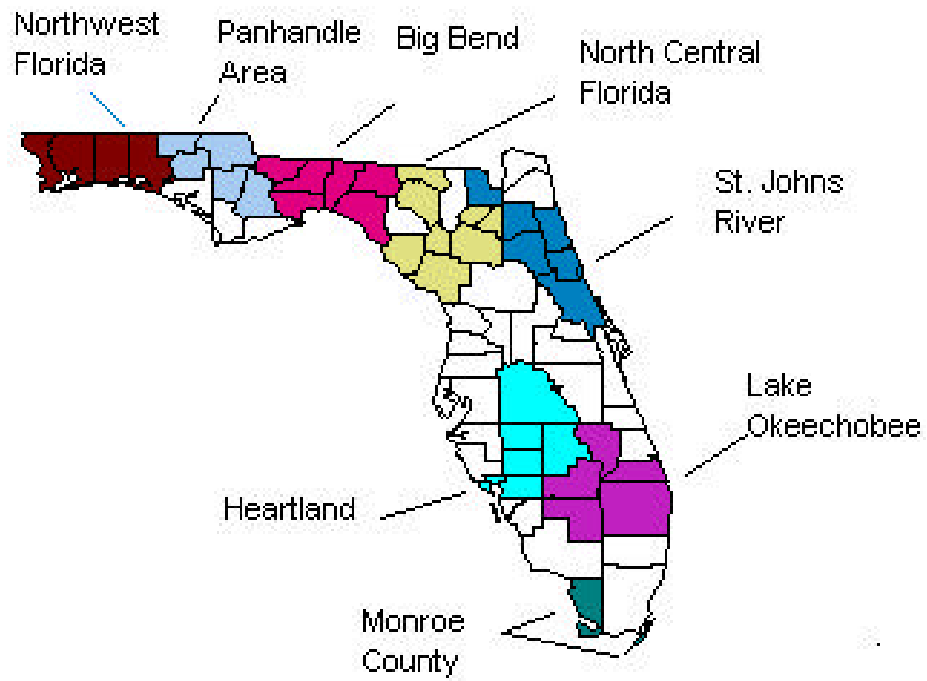
### **Healthcare in Regional Economies**

The healthcare sector is important to state and regional economies, particularly in rural areas, where it represents a major area employer, generally second only to public schools. Healthcare is an important element of rural economic development. Quality healthcare services and facilities help attract new businesses to an area and retain existing firms. Indeed, the degree of healthcare quality in a community serves as a critical factor for businesses investigating potential future company locations, and is also a major consideration for retirees seeking to relocate. This latter point is significant in Florida since the state attracts many retirees from across the nation and from abroad.

The healthcare sector or any basic industry has secondary economic impacts on the regional economy associated with its purchase of goods and services and employment in related businesses. Direct economic impacts include output, employment, and value added contributions directly associated with regional businesses. These businesses make purchases from other regional suppliers, which experience increased sales and employment as a result (indirect effects). Subsequently, the increased income accruing to employees in the region from direct and indirect activities leads to increased spending by regional households (induced effects). For example, in the case of a local hospital, the facility employs staff and provides medical services in exchange for monetary payment (direct impacts). The hospital also purchases inputs from other regional businesses such as office and medical suppliers (indirect impacts). Workers of the hospital and complementary businesses, whose jobs are supported by business transactions from the hospital, make personal consumption expenditures to grocery stores, restaurants, and the like (induced impacts). These impacts are magnified if the hospital purchases inputs predominantly from regional businesses and receives service payments from sources located outside the region. The total impact to the regional economy is the sum of the direct, indirect and induced effects.

### **Florida's Rural Health Networks**

This report summarizes the economic impacts of existing healthcare institutions in Florida's eight Rural Health Networks (Figure 1). A list of Florida counties included in each Rural Health Network is provided in Table 1. Note that only a portion of the counties of Alachua, Clay, Escambia, Leon, Martin, Palm Beach, St. Johns, and Santa Rosa are part of a Rural Health Network. Additionally, the economic impacts of healthcare institutions in Florida counties that are not part of a Rural Health Network were estimated for comparison.



**Figure 1.** Rural Health Networks of Florida.

**Table 1. Counties in the Rural Health Networks of Florida**

Big Bend Rural Health Network

1. Gadsden
2. Jefferson
3. Leon\*
4. Madison
5. Taylor
6. Wakulla

Health Partnership of North Central Florida

1. Alachua\*
2. Bradford
3. Dixie
4. Gilchrist
5. Hamilton
6. Levy
7. Suwannee
8. Union

Heartland Rural Health Network

1. Charlotte
2. DeSoto
3. Hardee
4. Highlands
5. Polk

Lake Okeechobee Rural Health Network

1. Glades
2. Hendry
3. Martin\*
4. Okeechobee
5. Palm Beach\*

Northwest Florida Rural Health Network

1. Escambia\*
2. Okaloosa
3. Santa Rosa\*
4. Walton

Panhandle Area Health Network

1. Calhoun
2. Holmes
3. Jackson
4. Liberty
5. Washington

Rural Health Network of Monroe County

1. Monroe

St. Johns River Rural Health Network

1. Baker
2. Clay\*
3. Flagler
4. Putnam
5. St. Johns\*
6. Volusia

Non-Rural Health Network Counties

1. Bay
2. Brevard
3. Broward
4. Citrus
5. Collier
6. Columbia
7. Duval
8. Franklin
9. Gulf
10. Hernando
11. Hillsborough
12. Indian River
13. Lafayette
14. Lake
15. Lee
16. Manatee
17. Marion
18. Miami-Dade
19. Nassau
20. Orange
21. Osceola
22. Pasco
23. Pinellas
24. St. Lucie
25. Sarasota
26. Seminole
27. Sumter

\*Portion of county

This study is part of a larger project involving compilation of data pertinent to Rural Health Network planners, including demographic information, economic indicators, number of healthcare providers and facilities, and community health status in addition to the economic impact analysis featured in the present study <sup>1</sup>. This report is organized in the following manner:

- The Methodology section discusses the *IMPLAN* model in greater detail and describes the assumptions inherent in the calculation of economic impacts.
- The Results section reports the total impacts for the economic indicators of output, employment and value added, and per capita impacts.
- The Conclusions section will summarize the major findings of this study.
- Detailed information at the county level for each Rural health Network is given in the Appendices, including the multipliers used to calculate economic impacts, total healthcare expenditures and the portion of expenditures covered by health insurance and Medicaid or Medicare, and the direct, indirect and induced economic impacts for each healthcare industry sector.

## Methodology

### Healthcare Sector Definition

Five economic sectors make up the healthcare industry and are analyzed in this report:

1. doctors and dentists
2. nursing and protective care
3. hospitals
4. other medical services
5. pharmaceuticals.

The doctors and dentists sector includes offices and clinics of doctors of medicine, dentists, doctors of osteopathy, chiropractors, optometrists, and podiatrists. Nursing and protective care includes skilled nursing care and intermediate care facilities. The hospital sector includes general medical, surgical, psychiatric, and other specialty hospitals. Other medical services include medical and dental laboratories, home health care services, kidney dialysis centers, and other specialty outpatient facilities. The pharmaceutical sector involves pharmaceutical-related sales by drug stores.

### Data Sources

A variety of data sources were used for this analysis. Data for Doctors and Dentists, and Other Medical Services were obtained from *Implan* data for Florida counties<sup>2</sup>. Output data for the Nursing and Protective Care and Hospital sectors was provided by the Florida Agency for Health Care Administration. Revenue information on drugstore retail sales was provided by the Florida Department of Revenue. Since drugstores sell non-pharmaceutical products as well, 50 percent

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<sup>1</sup> See <http://economicimpact.ifas.ufl.edu> for Rural Health Network data reports.

<sup>2</sup> Minnesota Implan Group (MIG, Inc.), Stillwater, Mn, 2001



of drugstore sales were estimated to represent pharmaceutical sales based on market research data<sup>3</sup>. Industry output associated with retail drug sales was estimated using an average gross margin of 0.267 for Florida drug stores<sup>4</sup>.

### **Economic Impact Analysis**

An input-output (I-O), social accounting matrix framework was used to estimate the direct, indirect and induced economic impacts of the healthcare industry in Florida. Input-output analysis is a technique that captures the regional economic interdependence between different industries, households and government institutions<sup>5 6</sup>. Specifically, input-output analysis describes the relationship between economic sectors and the final demand for goods and services, including purchases for final consumption by households, businesses and government, capital investment, and exports to buyers outside the region. The premise of input-output analysis is that the structure of the economy is technologically fixed, such that for a given change in the final demand, output or employment for a particular industry or region there will be predictable changes in other linked sectors of the economy. These changes are measured by estimating the regional economic multipliers associated with the particular industry using a matrix inversion procedure applied to the matrix of inter-industry transactions. Input-output models have proven useful to policymakers, industry officials, or other individuals interested in estimating regional impacts attributed to economic activity by specific sector(s) in a region, and have been applied to a wide array of research problems ranging from assessing the importance of agriculture, evaluating the economic structure of rural communities, and investigating the economic repercussions of plant openings, among many others.

The input-output analysis was conducted using the *IMPLAN PRO*<sup>TM</sup> software package and associated databases for Florida counties<sup>7</sup>. The *IMPLAN* database offers economic and sociodemographic descriptions for all United States counties across 528 economic sectors that correspond to the US Department of Commerce four digit Standard Industrial Classification (SIC) system. The software component of the *IMPLAN* modeling system performs calculations for a pre-defined study area to assess economic impacts to the region. Multipliers are available from *IMPLAN* for economic output, total value added, employment, employee compensation, personal income, other proprietary income, and indirect business taxes, and are provided for direct, indirect and induced impact effects. Table 2 lists total output multipliers for each healthcare sector in each rural health network region. The multipliers reflect a specific *Implan* sector in each case. For pharmaceuticals (drug stores), the *IMPLAN* sector 'Miscellaneous Retail' was used. These multipliers represent the change in output per unit change in final demand. For example, if

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<sup>3</sup> *Florida Trend Magazine*, September, 2001

<sup>4</sup> U.S. Census Bureau, *Annual Benchmark Report for Retail Trade and Food Services*

<sup>5</sup> Miller, R.E. and P.D. Blair, 1985, *Input-Output Analysis: Foundations and Extensions*. Prentice-Hall, Englewood Cliffs, New Jersey, 464 p.

<sup>6</sup> Mulkey, W.D. and A.W. Hodges: 2000. Using *IMPLAN* to assess local economic impacts. University of Florida Extension FE168. <http://edis.ifas.ufl.edu>

<sup>7</sup> *IMPLAN Professional*, Version 2.0, Social Accounting and Impact Analysis Software, User's Guide, Analysis Guide and Data Guide, 1999, MIG, Inc., Stillwater, MN.

final demand for hospitals in the Big Bend Rural Health Network increases by \$1 million, then total output in this region will increase by \$1.9 million.

**Table 2.** Total output multipliers for the health care sector in the Rural Health Networks of Florida, 1998.

Rural Health Network	Doctors and Dentists	Nursing and Protective Care	Hospitals	Other Medical and Health Services	Pharmaceuticals
Big Bend Rural Health Network	1.904	1.854	1.856	1.825	1.900
Health Partnership of North Central Florida	2.017	1.981	1.947	1.924	2.069
Heartland Rural Health Network	1.965	1.968	1.932	1.900	2.008
Lake Okeechobee Rural Health Network	2.100	2.063	2.043	2.009	2.105
Northwest Florida Rural Health Network	2.377	2.341	2.305	2.248	2.418
Panhandle Area Health Network	2.377	2.341	2.305	2.248	1.830
Rural Health Network of Monroe County, Florida	1.975	1.973	1.941	1.889	2.061
St. Johns River Rural Health Network	1.950	1.935	1.917	1.860	1.996
Non-Rural Health Network Counties of Florida	2.451	2.396	2.389	2.335	2.428

Source: MIG, 2001.

*IMPLAN* was used to estimate the total economic impacts associated with Florida's healthcare sector by multiplying the value of output against the direct effects multiplier and multiplying non-local funding values (health insurance-covered expenditures) against the indirect and induced effects multipliers, and subsequently summing as follows:

$$T = (Y * M_d) + (E * M_i) + (E * M_{iN})$$

where T is total impact,

Y is output, or total healthcare expenditures,

E is non-local funding, or portion of expenses covered by insurance,

$M_d$  is the direct effects multiplier

$M_i$  is the indirect effects multiplier, and

$M_{iN}$  is the induced effects multiplier.

Economic impacts were estimated for the measures of output, value added and employment. Value added represents the value of output less the value of inputs used by firms in the production of a good or service (COGS). It is a measure of income and is a useful economic indicator because it avoids the double counting of expenditures on intermediate and final goods inherent in output measures.

### Local vs. Non-Local Funding

For the current study, output represents the value of total healthcare expenditures in the region and non-local funding represents the portion of healthcare expenditures covered by health insurance including Medicare and Medicaid. Expenditures covered by insurance coverage are assumed to be a non-local funding source, and out-of-pocket patient expenses or charitable contributions not covered by insurance are assumed to be internal to the region. Non-local

funding represented 77.9 percent of output, based on personal communications with the Florida Department of Health.

### **Regional Population Adjustments**

A number of Florida counties have only a portion of their area as part of a Rural Health Network, including Alachua, Clay, Escambia, Leon, Palm Beach, Santa Rosa, and St. Johns counties. However, the *IMPLAN* model does not classify regions on a sub-county level. This is problematic in the current study as it will lead to an overestimation of economic impacts if both the urbanized and rural portions of these counties are included in Rural Health Network county definitions. In order to more accurately estimate economic impacts, the population of major cities in these counties was subtracted from total county populations. Metropolitan Statistical Areas (MSA) were considered when subtracting city populations from county areas because MSAs account for the socioeconomic integration of a city nucleus and its surrounding communities whereas county lines merely reflect political boundaries. The major cities of Jacksonville, Pensacola, and Port St. Lucie are part of multi-county MSAs, but the urban portion of these counties are not part of the Rural Health Network system. In order to separate the urbanized portions of Rural Health Network counties, county populations were expressed as a proportion of the MSA populations, then these proportions were multiplied against the corresponding city population and the value of this product was subtracted from the county population (Table A20). Health expenditures were then adjusted downward proportional to the reduction in county populations (Table A21). Per-capita economic impact estimates were based on these adjusted population levels.

An example of this adjustment is as follows, to exclude the city of Gainesville from the rural portions of Alachua county in the Health Partnership of North Central Florida. Alachua County is the only county in the Gainesville MSA. The 1999 population of Alachua county and Gainesville was 198,484 and 92,291 respectively. When the population of Gainesville is subtracted from Alachua County, the rural population of Alachua county now becomes 106,193. Thus, 53.5% of Alachua County's population is rural. Total county health expenditures were multiplied by 53.5% to reflect the portion attributed to rural residents.

## Results

Total output values and the share attributed to non-local funding sources are given for each healthcare industry sector and Rural Health Network region of Florida in Table 3, and are detailed for each county in Appendix Table A19. Total direct output in the Rural Health Networks of Florida across all health care sectors amounted to \$15.9 billion (Bn). Among the Rural Health Network regions, Lake Okeechobee had the greatest output value at \$5.3Bn, followed by Heartland (\$3.1Bn), Northwest (\$2.6Bn), and St. Johns River (\$2.5Bn). Collectively these four Rural Health Networks accounted for 85 percent of direct output value in Florida's Rural Health Networks. The Panhandle Area Health Network had the lowest output value at \$197 million (Mn). By comparison, industry output in the non-Rural Health Network counties of Florida was considerably higher at \$58.1Bn.

**Table 3.** Total output and non-local funding for the health services sector in the Rural Health Networks of Florida (\$ millions), 1998.

Rural Health Network	Doctors and Dentists		Nursing & Protective Care*		Hospitals*		Other Medical Services		Pharmaceuticals**	
	Output	Non-Local	Output	Non-Local	Output	Non-Local	Output	Non-Local	Output	Non-Local
Big Bend Rural Health Network	175.8	140.4	199.0	159.0	327.0	261.3	47.5	37.9	6.6	5.3
Health Partnership of North Central Florida	253.4	202.5	62.3	49.8	714.0	570.5	97.7	78.1	6.0	4.8
Heartland Rural Health Network	793.4	634.0	203.2	162.4	1,923.9	1,537.2	170.4	136.1	30.4	24.3
Lake Okeechobee Rural Health Network	1,242.9	993.1	280.1	223.8	3,315.7	2,649.3	421.6	336.9	64.1	51.2
Northwest Florida Rural Health Network	697.4	557.2	109.1	87.1	1,617.8	1,292.6	140.5	112.2	19.9	15.9
Panhandle Area Health Network	50.4	40.3	37.8	30.2	95.4	76.2	11.5	9.2	1.6	1.3
Rural Health Network of Monroe County.	48.4	38.7	11.8	9.4	154.6	123.6	16.7	13.4	8.3	6.6
St. Johns River Rural Health Network	622.8	497.6	202.3	161.6	1,522.6	1,216.6	159.0	127.0	30.7	24.5
Total Rural Health Networks	3,884.5	3103.8	1105.6	883.3	9,671	7,727.3	1064.9	850.8	167.6	133.9
Rest of Florida	14,920.4	11,921.4	3,169.2	2,532.2	35,335.3	28,232.9	3,998.6	3,194.9	679.4	542.8

Source: *Minnesota Implan Group*

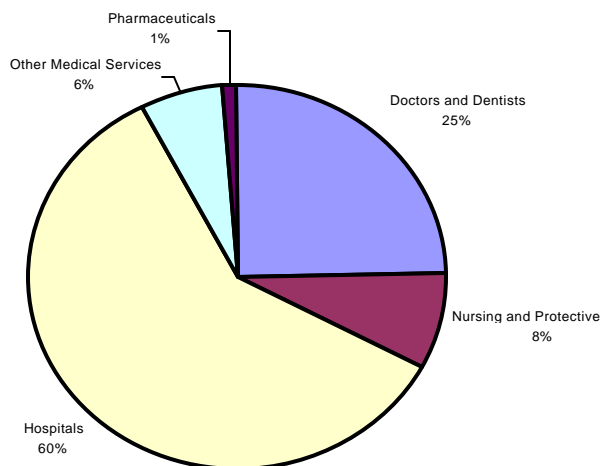
\*Source: Agency for Health Care Administration.

\*\*Source: Florida Department of Revenue.

**Figure 2.** Distribution of total output impacts by healthcare sector in the Rural Health Networks of Florida, 1998.

### Output Impacts

Total output impacts across all healthcare sectors in the Rural Health Networks of Florida totaled \$28.7Bn (Table 4). Among all Rural Health Networks the Hospital sector accounted for the majority of total output impacts (60 percent) followed by Doctors and Dentists (25 percent), Nursing and Protective Care (8 percent), Other Medical Services (6



percent) and Pharmaceuticals (1 percent) (Figure 2). By comparison the non-Rural Health Network counties generated \$123.2Bn in total output impacts.

**Table 4.** Total output impacts in the Rural Health Networks of Florida (\$ Millions), 1998.

Rural Health Network	Doctors and Dentists	Nursing and Protective Care	Hospitals	Other Medical Services	Pharmaceuticals	Total Healthcare Sectors
Big Bend Rural Health Network	302.8	334.7	753.3	78.8	11.4	1,480.9
Health Partnership of North Central Florida	318.6	355.0	574.4	82.5	12.3	1,342.8
Heartland Rural Health Network	1,405.1	360.4	3,357.1	292.9	54.9	5,470.5
Lake Okeechobee Rural Health Network	2,334.9	518.1	6,078.2	761.4	120.7	9,813.3
Northwest Florida Rural Health Network	1,464.6	225.9	3,304.8	280.5	42.5	5,318.3
Panhandle Area Health Network	105.9	78.3	194.8	23.0	2.7	404.7
Rural Health Network of Monroe County, Florida	86.1	20.9	270.9	28.6	15.3	421.9
St. Johns River Rural Health Network	1,095.4	353.4	2,637.9	268.2	55.1	4,410.0
<b>Total Rural Health Networks</b>	<b>7,113.3</b>	<b>2,247.0</b>	<b>17,171.4</b>	<b>1,816.0</b>	<b>314.7</b>	<b>28,662.5</b>
Non-Rural Health Network Counties of Florida	32,214.9	6,703.9	74,556.4	8,265.0	1,454.6	123,194.7
<b>Total Florida</b>	<b>39,328.2</b>	<b>8,950.9</b>	<b>91,727.8</b>	<b>10,081.0</b>	<b>1,769.3</b>	<b>151,857.2</b>

Source: MIG, Florida Department of Revenue, Agency for Health Care Administration.

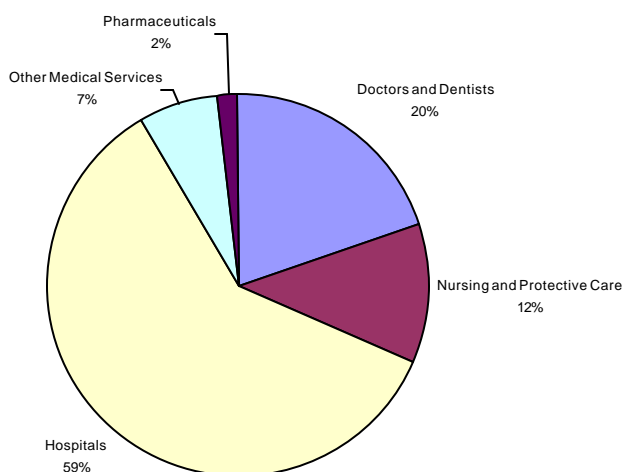
### Employment Impacts

Annual total employment impacts related to the healthcare sector of the Rural Health Networks of Florida were 447,628 jobs (Table 5). Among all Rural Health Networks the Hospital sector captured the majority of total employment impacts (59 percent) followed by Doctors and Dentists (20 percent), Nursing and Protective Care (12 percent), Other Medical Services (7 percent), and Pharmaceuticals (2 percent) (Figure 3). By comparison, the non-Rural Health Network counties of Florida had total employment impacts of 1.8 million jobs.

**Table 5.** Total employment impacts of the Rural Health Networks of Florida (Jobs), 1998.

Rural Health Network	Doctors and Dentists	Nursing and Protective Care	Hospitals	Other Medical Services	Pharmaceuticals	Total Healthcare Sectors
Big Bend Rural Health Network	4,031	8,092	9,474	1,455	310	23,362
Health Partnership of North Central Florida	4,481	8,793	9,389	1,524	327	24,515
Heartland Rural Health Network	18,394	8,385	54,041	4,942	1,355	87,118
Lake Okeechobee Rural Health Network	26,156	10,919	89,841	11,652	2,393	140,961
Northwest Florida Rural Health Network	19,291	5,298	54,267	4,880	993	84,729
Panhandle Area Health Network	1,395	1,836	3,200	400	64	6,895
Rural Health Network of Monroe County, Florida	1,106	463	4,240	495	339	6,643
St. Johns River Rural Health Network	14,818	8,391	43,972	4,828	1,397	73,407
<b>Total Rural Health Networks</b>	<b>89,673</b>	<b>52,178</b>	<b>268,423</b>	<b>30,175</b>	<b>7,179</b>	<b>447,628</b>
Non-Rural Health Network Counties of Florida	394,139	136,927	1,113,813	127,577	28,430	1,800,885
<b>Total Florida</b>	<b>483,812</b>	<b>189,105</b>	<b>1,382,236</b>	<b>157,752</b>	<b>35,609</b>	<b>2,248,514</b>

Source: MIG, Florida Department of Revenue, Agency for Health Care Administration.



**Figure 3.** Distribution of total employment impacts by healthcare sector in the Rural Health Networks of Florida, 1998.

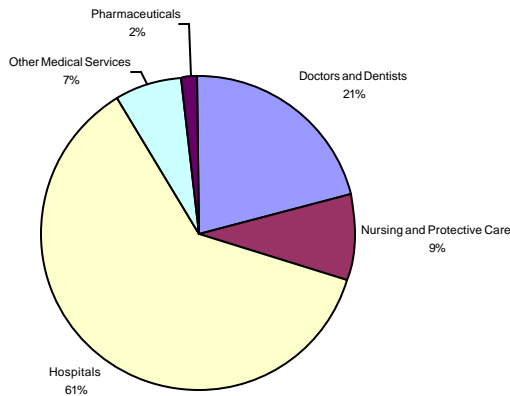
### Value Added Impacts

The healthcare services sector in the Rural Health Networks of Florida generated annual total value added impacts of \$18.8 billion (Table 6). Among all Rural Health Networks the Hospital sector accounted for the majority of total output impacts (61 percent) followed by Doctors and Dentists sector (21 percent), Nursing and Protective Care (9 percent), Other Medical Services (7 percent), and Pharmaceuticals (2 percent) (Figure 4). By comparison, the non-Rural Health Network counties of Florida yielded total value added impacts of \$80.4 billion.

**Table 6.** Total value added impacts of the Rural Health Networks of Florida (\$ Millions), 1998.

Rural Health Network	Doctors and Dentists	Nursing and Protective Care	Hospitals	Other Medical Services	Pharmaceuticals	Total Healthcare Sectors
Big Bend Rural Health Network	206.4	241.0	358.0	47.5	9.0	861.9
Health Partnership of North Central Florida	213.4	252.1	380.9	49.7	9.6	905.6
Heartland Rural Health Network	927.5	252.7	2,156.8	177.0	42.0	3,555.9
Lake Okeechobee Rural Health Network	1,580.8	365.5	3,945.5	469.4	92.0	6,453.2
Northwest Florida Rural Health Network	1,016.0	162.7	2,202.3	176.1	33.2	3,590.3
Panhandle Area Health Network	73.5	56.4	129.8	14.4	2.1	276.2
Rural Health Network of Monroe County, Florida	57.4	15.0	177.7	17.2	11.8	279.1
St. Johns River Rural Health Network	717.8	247.2	1,680.1	158.1	42.0	2,845.2
<b>Total Rural Health Networks</b>	<b>4,792.8</b>	<b>1,592.6</b>	<b>11,031.1</b>	<b>1,109.4</b>	<b>241.7</b>	<b>18,767.4</b>
Non-Rural Health Network Counties of Florida	21,385.5	4,673.5	48,135.9	5,089.4	1,086.5	80,370.9
<b>Total Florida</b>	<b>26,178.3</b>	<b>6,266.1</b>	<b>59,167.0</b>	<b>6,198.8</b>	<b>1,328.2</b>	<b>99,138.3</b>

Source: MIG, Florida Department of Revenue, Agency for Health Care Administration.



**Figure 4.** Distribution of total value added impacts by healthcare sector in the Rural Health Networks of Florida, 1998.

### Per-Capita Output Impacts

Given the wide range in overall size of the Rural Health Network regions of Florida, economic impacts are meaningfully expressed on a per-capita basis. For example, the Rural Health Network of Monroe County consists of only one county whereas the Lake Okeechobee Rural health Network consists of five counties. Total per-capita output impacts were approximately \$8,276 among all healthcare sectors in the Rural Health Networks of Florida (Table 7). The Doctors and Dentist sector had per-capita output impacts of \$2054, the Nursing and Protective Care sector had \$649, Hospitals claimed nearly \$4958, Other Medical Services at \$524, and Pharmaceuticals had \$91 in per-capita output impacts. Total per-capita output impacts were \$11,500 for the non-Rural Health Network counties across all sectors. Two Networks had higher per-capita output impacts across all healthcare sectors relative to the Rural Health Networks of Florida: Lake Okeechobee (\$10,475) and Northwest Florida (\$9,658). Note the low value for the Panhandle Area (\$3,948).

**Table 7.** Total per-capita output impacts in the Rural Health Networks of Florida (\$), 1998.

Rural Health Network	Doctors and Dentists	Nursing and Protective Care	Hospitals	Other Medical Services	Pharmaceuticals	Total Healthcare Sectors
Big Bend Rural Health Network	1,577	1,743	3,923	410	59	7,712
Health Partnership of North Central Florida	1,290	1,438	2,326	334	50	5,437
Heartland Rural Health Network	1,984	509	4,741	414	78	7,726
Lake Okeechobee Rural Health Network	2,492	553	6,488	813	129	10,475
Northwest Florida Rural Health Network	2,660	410	6,001	509	77	9,658
Panhandle Area Health Network	1,033	764	1,901	224	26	3,948
Rural Health Network of Monroe County, Florida	1,065	259	3,350	354	189	5,218
St. Johns River Rural Health Network	1,697	547	4,086	415	85	6,831
<b>Total Rural Health Networks</b>	<b>2,054</b>	<b>649</b>	<b>4,958</b>	<b>524</b>	<b>91</b>	<b>8,276</b>
Non-Rural Health Network Counties of Florida	3,008	626	6,961	772	136	11,502
<b>Total Florida</b>	<b>2,775</b>	<b>631</b>	<b>6,471</b>	<b>711</b>	<b>125</b>	<b>10,714</b>

Source: MIG, Florida Department of Revenue, Agency for Health Care Administration.

## Per-Thousand Person Employment Impacts

The Rural Health Networks of Florida generated employment impacts per-thousand residents averaging 129 jobs (Table 8). Twenty-six jobs were in the Doctors and Dentists sector, 15 in Nursing and Protective Care, 78 in Hospitals, 9 in Other Medical Services and 2 in the Pharmaceuticals sector. The non-Rural Health Network counties of Florida generated 168 jobs per-thousand persons across all healthcare sectors. The Northwest Florida and Lake Okeechobee Rural Health Networks had higher per-thousand persons jobs relative to the entire Rural Health Network Sectors at 154 and 150 jobs per-thousand persons, respectively. The Panhandle and Monroe County Health Networks had significantly lower employment impacts per 1000 persons (68 and 82, respectively).

**Table 8.** Total per thousand persons employment impacts of the Rural Health Networks of Florida (Jobs), 1998.

Rural Health Network	Doctors and Dentists	Nursing and Protective Care	Hospitals	Other Medical Services	Pharmaceuticals	Total Healthcare Sectors
Big Bend Rural Health Network	21	42	49	8	2	122
Health Partnership of North Central Florida	18	36	38	6	1	99
Heartland Rural Health Network	26	12	76	7	2	123
Lake Okeechobee Rural Health Network	28	12	96	12	3	150
Northwest Florida Rural Health Network	35	10	99	9	2	154
Panhandle Area Health Network	14	18	31	4	1	68
Rural Health Network of Monroe County, Florida	14	6	52	6	4	82
St. Johns River Rural Health Network	23	13	68	7	2	114
<b>Total Rural Health Networks</b>	<b>26</b>	<b>15</b>	<b>78</b>	<b>9</b>	<b>2</b>	<b>129</b>
Non-Rural Health Network Counties of Florida	37	13	104	12	3	168
<b>Total Florida</b>	<b>34</b>	<b>13</b>	<b>98</b>	<b>11</b>	<b>3</b>	<b>159</b>

Source: MIG, Florida Department of Revenue, Agency for Health Care Administration.

## Per-Capita Value Added Impacts

Per-capita value added impacts of \$5419 were generated in the Rural Health Networks of Florida (Table 9). Per-capita total impacts were nearly \$1384 in the Doctors and Dentists sector, \$460 in the Nursing and Protective Care sector, \$3185 in the Hospital sector, \$320 in the Other Medical Services sector, and \$70 in the Pharmaceuticals sector. The non-Rural Health Network counties of Florida had nearly \$7504 in per-capita value added impacts across all healthcare sectors. Similar to the per-capita output and employment measures, per-capita value added impacts in the Lake Okeechobee (\$6,889), and the Northwest Florida (\$6,520) Rural health Networks surpassed average per-capita value added impacts experienced by Rural Health Networks as a whole, while the Panhandle and Monroe County Networks had significantly lower values.



**Table 9.** Total per-capita value added impacts of the Rural Health Networks of Florida (\$), 1998.

Rural Health Network	Doctors and Dentists	Nursing and Protective Care	Hospitals	Other Medical Services	Pharmaceuticals	Total Healthcare Sectors
Big Bend Rural Health Network	1,075	1,255	1,865	247	47	4,488
Health Partnership of North Central Florida	864	1,021	1,542	201	39	3,667
Heartland Rural Health Network	1,310	357	3,046	250	59	5,022
Lake Okeechobee Rural Health Network	1,687	390	4,212	501	98	6,889
Northwest Florida Rural Health Network	1,845	295	3,999	320	60	6,520
Panhandle Area Health Network	717	550	1,267	141	21	2,695
Rural Health Network of Monroe County, Florida	710	186	2,198	213	146	3,453
St. Johns River Rural Health Network	1,112	383	2,603	245	65	4,407
<b>Total Rural Health Networks</b>	<b>1,384</b>	<b>460</b>	<b>3,185</b>	<b>320</b>	<b>70</b>	<b>5,419</b>
Non-Rural Health Network Counties of Florida	1,997	436	4,494	475	101	7,504
<b>Total Florida</b>	<b>1,847</b>	<b>442</b>	<b>4,174</b>	<b>437</b>	<b>94</b>	<b>6,994</b>

Source: MIG, Florida Department of Revenue, Agency for Health Care Administration.

### Public Health Department Employment

In addition to the primary commercial healthcare sectors, Florida's county public health departments play an important role in planning, administering, and coordinating public health programs. Employment in the county health departments of the Rural Health Network regions are shown in Table 10. These numbers represent direct employment impacts by the county health departments and are in addition to the employment impacts estimated for the principal healthcare sectors. County health department employment in the Rural Health Networks totaled 6730 persons, greater than 4241 persons for the non-Rural Health Network counties. This suggests that Public Health Departments are more important to rural communities than for their urban counterparts. Collectively, the Heartland, Lake Okeechobee, Northwest Florida and St. Johns River Rural Health Networks accounted for 72 percent of total employment (4830 persons) among all Rural Health Networks.

**Table 10.** Employment in the county public health departments of Florida's Rural Health Networks, 2000.

Rural Health Network	Employment
Big Bend Rural Health Network	448
Health Partnership of North Central Florida	610
Heartland Rural Health Network	1,641
Lake Okeechobee Rural Health Network	1,178
Northwest Florida Rural Health Network	1,011
Panhandle Area Health Network	753
Rural Health Network of Monroe County, Florida	88
St. Johns River Rural Health Network	1,000
<b>Total Rural Health Networks</b>	<b>6,730</b>
Non-Rural Health Network Counties of Florida	4,241
<b>Total Florida</b>	<b>10,971</b>

Source: Florida Department of Health, Tallahassee, Florida.

## Share of Gross Regional Product and Employment

As an indication of the importance of the healthcare sector to the economy of Florida's Rural Health Network regions, Table 11 shows the total value added and employment contributions of the healthcare sector, and its share of total gross regional product and employment. The sum of value added for all industry sectors is the gross regional product (GRP). The share of GRP attributable to the healthcare sector was 5.9 percent across all the Rural Health Network areas. This was higher than for the non-Rural Health Network counties (3.4%). The healthcare sector share of GRP was above average for the Heartland (8.7%), St. Johns River (7.5%), Health Partnership of North Florida (6.6%), and Northwest Florida (6.2%) Rural Health Networks. Employment in the healthcare sector represented 6.8 percent of total employment in the Rural Health Networks. This was relatively lower in the rural areas than in non-RHN counties (8.1%). Employment share was above average for the Heartland, St. Johns River, Health Partnership of North Florida, Northwest Florida, and Panhandle Area Rural Health Networks.

**Table 11.** Healthcare sector value added and employment and share of gross regional product (GRP) and employment, in the Rural Health Network regions of Florida, 1998.

Rural Health Network	Healthcare Sector Gross Product (\$Millions)	Health Sector GRP share (Percent)	Healthcare Sector Employment (jobs)	Health Sector Employment Share (Percent)
Big Bend Rural Health Network	267.9	2.8	7,201	3.1
Health Partnership of North Central Florida	527.8	6.6	13,615	7.3
Heartland Rural Health Network	1,305.6	8.7	32,762	9.8
Lake Okeechobee Rural Health Network	1,756.3	5.0	38,796	5.7
Northwest Florida Rural Health Network	1,009.1	6.2	25,498	7.7
Panhandle Area Health Network	88.9	5.5	3,027	7.7
Rural Health Network of Monroe County, Florida	94.5	3.8	2,495	4.7
St. Johns River Rural Health Network	980.1	7.5	25,046	8.1
<b>Total Rural Health Networks</b>	<b>6,030.3</b>	<b>5.9</b>	<b>148,440</b>	<b>6.8</b>
<b>Non-Rural Health Network Counties of Florida</b>	<b>10,633.1</b>	<b>3.4</b>	<b>501,669</b>	<b>8.1</b>

## Conclusions

This report is part of a series that describes the socioeconomic characteristics of Rural Health Networks of Florida. The current study examined the economic contribution of the healthcare sector to Rural Health Networks and non-Rural Health Network counties using the IMPLAN input-output modeling system. The total economic impacts of the healthcare services sector in the Rural Health Networks of Florida include \$28.7Bn in output, 447,628 jobs, and \$18.8Bn in value added. These impacts were considerably lower than those estimated for the non-Rural Health Network counties of Florida amounting to \$123.2Bn in output, 1.8Mn jobs, and \$80.4Mn in value added. Among the Rural Health Networks of Florida, the Hospital sector, on

average, accounted for the largest share of economic impacts at 60 percent, followed by Doctors and Dentists (22 percent), Nursing and Protective Care (10 percent), Other Medical Services (7 percent), and Pharmaceuticals (2 percent). Direct employment in the County Health Departments of the Rural Health Networks (6,730) exceeded employment in the non-Rural Health Network counties (4,241). Total per-capita impacts were nearly \$8,276 in output and \$5,419 in value added in the Rural Health Networks while non-Rural Health Network counties generated per-capita impacts of \$11,502 in output and \$7,504 in value added. Employment impacts per-thousand persons were 129 and 168 jobs in the Rural Health Networks and non-Rural Health Network counties of Florida, respectively. The fact that non-Rural Health Network counties receive greater impacts on a total and per-capita basis is not surprising given that greater populated areas attract proportionately higher levels of economic activity. Two Rural Health Network regions had particularly low economic impacts in relation to the population base: the Panhandle and Rural Health Network of Monroe County. The Lake Okeechobee and Northwest Florida Rural Health Networks had relatively higher economic impacts.

## Appendix

**Table A1.** Output, employment, and value added multipliers for the Big Bend Rural Health Network, 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output Multipliers				
Doctors and Dentists	1.000	0.22	0.684	1.904
Nursing and Protective Care	1.000	0.16	0.694	1.854
Hospitals	1.000	0.225	0.631	1.856
Other Medical and Health Services	1.000	0.244	0.581	1.825
Pharmaceuticals	1.000	0.117	0.783	1.9
Employment Multipliers*				
Doctors and Dentists	11.135	3.07	11.698	25.902
Nursing and Protective Care	29.31	2.37	11.841	43.521
Hospitals	17.75	3.297	10.747	31.794
Other Medical and Health Services	20.189	3.139	9.942	33.27
Pharmaceuticals	34.768	1.515	13.685	49.968
Value Added Multipliers				
Doctors and Dentists	0.67	0.143	0.488	1.301
Nursing and Protective Care	0.735	0.103	0.493	1.331
Hospitals	0.624	0.141	0.448	1.213
Other Medical and Health Services	0.542	0.159	0.415	1.116
Pharmaceuticals	0.844	0.071	0.573	1.488

Source: MIG, 2001.

\*Jobs per million dollar output.

**Table A2.** Output, employment, and value added impacts for the Big Bend Rural Health Network (\$Millions), 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output (\$ Millions)				
Doctors and Dentists	175.8	30.9	96.1	302.8
Nursing and Protective Care	199.0	25.4	110.3	334.7
Hospitals	327.0	261.3	165.0	753.3
Other Medical and Health Services	47.5	9.3	22.0	78.8
Miscellaneous Retail	6.6	0.6	4.1	11.4
Employment (Jobs)				
Doctors and Dentists	1,957	431	1,642	4,031
Nursing and Protective Care	5,833	377	1,883	8,092
Hospitals	5,804	861	2,808	9,474
Other Medical and Health Services	959	119	377	1,455
Miscellaneous Retail	229	8	73	310
Value Added (\$ Millions)				
Doctors and Dentists	117.8	20.1	68.5	206.4
Nursing and Protective Care	146.3	16.3	78.4	241.0
Hospitals	204.2	36.9	116.9	358.0
Other Medical and Health Services	25.7	6.0	15.7	47.5
Miscellaneous Retail	5.6	0.4	3.0	9.0

Source: MIG, Florida Department of Revenue, Agency for Health Care Administration.

**Table A3.** Output, employment, and value added multipliers for the Health Partnership of North Central Florida, 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output Multipliers				
Doctors and Dentists	1.000	0.22	0.797	2.017
Nursing and Protective Care	1.000	0.157	0.825	1.981
Hospitals	1.000	0.191	0.755	1.947
Other Medical and Health Services	1.000	0.238	0.686	1.924
Pharmaceuticals	1.000	0.111	0.958	2.069
Employment Multipliers*				
Doctors and Dentists	11.764	3.461	13.726	28.952
Nursing and Protective Care	30.742	2.626	14.203	47.571
Hospitals	15.927	3.062	12.939	31.928
Other Medical and Health Services	19.961	3.364	11.838	35.163
Pharmaceuticals	34.517	1.565	17.1	53.182
Value Added Multipliers				
Doctors and Dentists	0.658	0.139	0.556	1.354
Nursing and Protective Care	0.727	0.099	0.576	1.403
Hospitals	0.654	0.114	0.526	1.293
Other Medical and Health Services	0.545	0.148	0.479	1.172
Pharmaceuticals	0.844	0.067	0.685	1.596

Source: MIG, 2001.

\*Jobs per million dollar output.

**Table A4.** Output, employment, and value added impacts for the Health Partnership of North Central Florida, 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output (\$ Millions)				
Doctors and Dentists	175.8	30.9	111.9	318.6
Nursing and Protective Care	199.0	24.9	131.1	355.0
Hospitals	327.0	50.0	197.4	574.4
Other Medical and Health Services	47.5	9.0	26.0	82.5
Pharmaceuticals	6.6	0.6	5.1	12.3
Employment (Jobs)				
Doctors and Dentists	2,068	486	1,927	4,481
Nursing and Protective Care	6,118	418	2,258	8,793
Hospitals	5,208	800	3,381	9,389
Other Medical and Health Services	948	128	449	1,524
Pharmaceuticals	228	8	91	327
Value Added (\$ Millions)				
Doctors and Dentists	115.7	19.5	78.1	213.4
Nursing and Protective Care	144.8	15.7	91.6	252.1
Hospitals	213.8	29.7	137.3	380.9
Other Medical and Health Services	25.9	5.6	18.1	49.7
Pharmaceuticals	5.6	0.4	3.6	9.6

Source: MIG, Florida Department of Revenue, Agency for Health Care Administration.

**Table A5.** Output, employment, and value added multipliers for the Heartland Rural Health Network, 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output Multipliers				
Doctors and Dentists	1.000	0.211	0.754	1.965
Nursing and Protective Care	1.000	0.170	0.798	1.968
Hospitals	1.000	0.213	0.719	1.932
Other Medical and Health Services	1.000	0.232	0.668	1.900
Pharmaceuticals	1.000	0.112	0.896	2.008
Employment Multipliers*				
Doctors and Dentists	11.555	3.168	11.385	26.108
Nursing and Protective Care	29.538	2.572	12.100	44.210
Hospitals	16.978	3.084	10.823	30.885
Other Medical and Health Services	18.522	3.048	10.077	31.646
Pharmaceuticals	32.133	1.476	14.081	47.689
Value Added Multipliers				
Doctors and Dentists	0.662	0.138	0.496	1.296
Nursing and Protective Care	0.734	0.110	0.528	1.371
Hospitals	0.637	0.133	0.473	1.243
Other Medical and Health Services	0.568	0.151	0.438	1.157
Pharmaceuticals	0.844	0.070	0.601	1.515

Source: MIG, 2001.

\*Jobs per million dollar output.

**Table A6.** Output, employment, and value added impacts of the Heartland Rural Health Network, 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output (\$ Millions)				
Doctors and Dentists	793.4	133.5	478.2	1,405.1
Nursing and Protective Care	203.2	27.6	129.6	360.4
Hospitals	1,923.9	327.4	1,105.8	3,357.1
Other Medical and Health Services	170.4	31.6	91.0	292.9
Pharmaceuticals	30.4	2.7	21.8	54.9
Employment (Jobs)				
Doctors and Dentists	9,168	2,009	7,218	18,394
Nursing and Protective Care	6,002	418	1,965	8,385
Hospitals	32,663	4,741	16,637	54,041
Other Medical and Health Services	3,156	415	1,371	4,942
Pharmaceuticals	977	36	342	1,355
Value Added (\$ Millions)				
Doctors and Dentists	525.4	87.4	314.6	927.5
Nursing and Protective Care	149.1	17.8	85.7	252.7
Hospitals	1,225.4	204.1	727.3	2,156.8
Other Medical and Health Services	96.9	20.5	59.6	177.0
Pharmaceuticals	25.6	1.7	14.6	42.0

Source: MIG, Florida Department of Revenue, Agency for Health Care Administration.

**Table A7.** Output, employment and value added multipliers for the Lake Okeechobee Rural Health Network, 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output Multipliers				
Doctors and Dentists	1.000	0.233	0.867	2.100
Nursing and Protective Care	1.000	0.175	0.888	2.063
Hospitals	1.000	0.231	0.811	2.043
Other Medical and Health Services	1.000	0.251	0.758	2.009
Pharmaceuticals	1.000	0.128	0.976	2.105
Employment Multipliers*				
Doctors and Dentists	10.003	2.944	10.874	23.822
Nursing and Protective Care	28.237	2.250	11.197	41.684
Hospitals	16.671	2.876	10.171	29.718
Other Medical and Health Services	17.761	2.848	9.512	30.120
Pharmaceuticals	26.091	1.449	12.632	40.172
Value Added Multipliers				
Doctors and Dentists	0.691	0.156	0.571	1.418
Nursing and Protective Care	0.741	0.119	0.587	1.447
Hospitals	0.642	0.152	0.534	1.328
Other Medical and Health Services	0.581	0.168	0.499	1.247
Pharmaceuticals	0.844	0.083	0.657	1.584

Source: MIG, 2001.

\*Jobs per million dollar output.

**Table A8.** Output, employment and value added impacts in the Lake Okeechobee Rural Health Network, 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output (\$ Millions)				
Doctors and Dentists	1,242.9	231.4	860.6	2,334.9
Nursing and Protective Care	280.1	39.3	198.7	518.1
Hospitals	3,315.7	612.8	2,149.7	6,078.2
Other Medical and Health Services	421.6	84.4	255.4	761.4
Pharmaceuticals	64.1	6.6	50.0	120.7
Employment (Jobs)				
Doctors and Dentists	12,433	2,924	10,799	26,156
Nursing and Protective Care	7,909	504	2,506	10,919
Hospitals	55,274	7,620	26,947	89,841
Other Medical and Health Services	7,488	959	3,205	11,652
Pharmaceuticals	1,672	74	647	2,393
Value Added (\$ Millions)				
Doctors and Dentists	859.2	154.8	566.8	1,580.8
Nursing and Protective Care	207.4	26.6	131.4	365.5
Hospitals	2,128.3	402.0	1,415.2	3,945.5
Other Medical and Health Services	244.8	56.5	168.0	469.4
Pharmaceuticals	54.1	4.3	33.6	92.0

Source: MIG, Florida Department of Revenue, Agency for Health Care Administration.

**Table A9.** Output, employment, and value added multipliers for the Northwest Florida Rural Health Network, 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output Multipliers				
Doctors and Dentists	1.000	0.242	1.134	2.377
Nursing and Protective Care	1.000	0.185	1.156	2.341
Hospitals	1.000	0.247	1.058	2.305
Other Medical and Health Services	1.000	0.271	0.977	2.248
Pharmaceuticals	1.000	0.123	1.295	2.418
Employment Multipliers*				
Doctors and Dentists	11.211	3.84	16.749	31.801
Nursing and Protective Care	32.407	3.094	17.144	52.645
Hospitals	17.968	3.895	15.599	37.462
Other Medical and Health Services	20.125	3.884	14.405	38.414
Pharmaceuticals	32.822	1.741	19.657	54.22
Value Added Multipliers				
Doctors and Dentists	0.669	0.158	0.829	1.655
Nursing and Protective Care	0.719	0.122	0.846	1.687
Hospitals	0.621	0.154	0.773	1.548
Other Medical and Health Services	0.543	0.175	0.714	1.432
Pharmaceuticals	0.844	0.077	0.958	1.879

Source: MIG, 2001.

\*Jobs per million dollar output.

**Table A10.** Output, employment, and value added impacts in the Northwest Florida Rural Health Network, 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output (\$ Millions)				
Doctors and Dentists	697.4	135.0	632.1	1,464.6
Nursing and Protective Care	109.1	16.1	100.7	225.9
Hospitals	1,617.8	319.2	1,367.8	3,304.8
Other Medical and Health Services	140.5	30.4	109.7	280.5
Pharmaceuticals	19.9	2.0	20.6	42.5
Employment (Jobs)				
Doctors and Dentists	7,818	2,140	9,333	19,291
Nursing and Protective Care	3,536	269	1,493	5,298
Hospitals	29,068	5,035	20,163	54,267
Other Medical and Health Services	2,828	436	1,616	4,880
Pharmaceuticals	653	28	313	993
Value Added (\$ Millions)				
Doctors and Dentists	466.3	87.8	461.9	1,016.0
Nursing and Protective Care	78.4	10.6	73.7	162.7
Hospitals	1,004.4	199.3	998.6	2,202.3
Other Medical and Health Services	76.3	19.7	80.2	176.1
Pharmaceuticals	16.8	1.2	15.2	33.2

Source: MIG, Florida Department of Revenue, Agency for Health Care Administration.



**Table A11.** Output, employment, and value added multipliers for the Panhandle Area Health Network, 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output Multipliers				
Doctors and Dentists	1.000	0.242	1.134	2.377
Nursing and Protective Care	1.000	0.185	1.156	2.341
Hospitals	1.000	0.247	1.058	2.305
Other Medical and Health Services	1.000	0.271	0.977	2.248
Pharmaceuticals	1.000	0.095	0.735	1.83
Employment Multipliers*				
Doctors and Dentists	11.211	3.84	16.749	31.801
Nursing and Protective Care	32.407	3.094	17.144	52.645
Hospitals	17.968	3.895	15.599	37.462
Other Medical and Health Services	20.125	3.884	14.405	38.414
Pharmaceuticals	28.142	1.154	13.716	43.012
Value Added Multipliers				
Doctors and Dentists	0.669	0.158	0.829	1.655
Nursing and Protective Care	0.719	0.122	0.846	1.687
Hospitals	0.621	0.154	0.773	1.548
Other Medical and Health Services	0.543	0.175	0.714	1.432
Pharmaceuticals	0.844	0.059	0.52	1.422

Source: MIG, 2001.

\*Jobs per million dollar output.

**Table A12.** Output, employment, and value added impacts in the Panhandle Area Health Network, 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output (\$ Millions)				
Doctors and Dentists	50.4	9.8	45.7	105.9
Nursing and Protective Care	37.8	5.6	34.9	78.3
Hospitals	95.4	18.8	80.6	194.8
Other Medical and Health Services	11.5	2.5	9.0	23.0
Pharmaceuticals	1.6	0.1	1.0	2.7
Employment (Jobs)				
Doctors and Dentists	565	155	675	1,395
Nursing and Protective Care	1,225	93	518	1,836
Hospitals	1,714	297	1,189	3,200
Other Medical and Health Services	231	36	133	400
Pharmaceuticals	45	2	18	64
Value Added (\$ Millions)				
Doctors and Dentists	33.7	6.4	33.4	73.5
Nursing and Protective Care	27.2	3.7	25.5	56.4
Hospitals	59.2	11.7	58.9	129.8
Other Medical and Health Services	6.2	1.6	6.6	14.4
Pharmaceuticals	1.3	0.1	0.7	2.1

Source: MIG, Florida Department of Revenue, Agency for Health Care Administration.

**Table A13.** Output, employment, and value added multipliers for the Rural Health Network of Monroe County, Florida, 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output Multipliers				
Doctors and Dentists	1.000	0.201	0.774	1.975
Nursing and Protective Care	1.000	0.147	0.826	1.973
Hospitals	1.000	0.195	0.745	1.941
Other Medical and Health Services	1.000	0.217	0.671	1.889
Pharmaceuticals	1.000	0.114	0.947	2.061
Employment Multipliers*				
Doctors and Dentists	11.984	2.651	10.945	25.580
Nursing and Protective Care	28.374	1.926	11.721	42.021
Hospitals	16.884	2.656	10.532	30.072
Other Medical and Health Services	19.931	2.593	9.482	32.007
Pharmaceuticals	28.896	1.359	13.646	43.901
Value Added Multipliers				
Doctors and Dentists	0.654	0.129	0.536	1.319
Nursing and Protective Care	0.740	0.094	0.574	1.408
Hospitals	0.638	0.123	0.516	1.278
Other Medical and Health Services	0.546	0.140	0.463	1.149
Pharmaceuticals	0.844	0.069	0.663	1.576

Source: MIG, 2001.

\*Jobs per million dollar output.

**Table A14.** Output, employment, and value added impacts for the Rural Health Network of Monroe County, Florida, 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output (\$ Millions)				
Doctors and Dentists	48.4	7.8	29.9	86.1
Nursing and Protective Care	11.8	1.4	7.8	20.9
Hospitals	154.6	24.1	92.1	270.9
Other Medical and Health Services	16.7	2.9	9.0	28.6
Pharmaceuticals	8.3	0.7	6.3	15.3
Employment (Jobs)				
Doctors and Dentists	580	103	424	1,106
Nursing and Protective Care	335	18	110	463
Hospitals	2,610	328	1,302	4,240
Other Medical and Health Services	333	35	127	495
Pharmaceuticals	240	9	90	339
Value Added (\$ Millions)				
Doctors and Dentists	31.7	5.0	20.7	57.4
Nursing and Protective Care	8.7	0.9	5.4	15.0
Hospitals	98.7	15.2	63.8	177.7
Other Medical and Health Services	9.1	1.9	6.2	17.2
Pharmaceuticals	7.0	0.5	4.4	11.8

Source: MIG, Florida Department of Revenue, Agency for Health Care Administration.

**Table A15.** Output, employment, and value added multipliers for the St. Johns River Rural Health Network, 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output Multipliers				
Doctors and Dentists	1.000	0.216	0.734	1.950
Nursing and Protective Care	1.000	0.161	0.774	1.935
Hospitals	1.000	0.217	0.700	1.917
Other Medical and Health Services	1.000	0.226	0.633	1.860
Pharmaceuticals	1.000	0.116	0.880	1.996
Employment Multipliers*				
Doctors and Dentists	11.604	3.416	11.840	26.860
Nursing and Protective Care	29.374	2.605	12.549	44.528
Hospitals	17.196	3.352	11.270	31.818
Other Medical and Health Services	19.575	3.314	10.195	33.084
Pharmaceuticals	32.541	1.641	14.599	48.781
Value Added Multipliers				
Doctors and Dentists	0.661	0.138	0.477	1.276
Nursing and Protective Care	0.735	0.104	0.506	1.345
Hospitals	0.633	0.134	0.455	1.222
Other Medical and Health Services	0.552	0.144	0.410	1.106
Pharmaceuticals	0.844	0.071	0.584	1.499

Source: MIG, 2001.

\*Jobs per million dollar output.

**Table A16.** Output, employment, and value added impacts in the St. Johns River Rural Health Network, 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output (\$ Millions)				
Doctors and Dentists	622.8	107.3	365.3	1,095.4
Nursing and Protective Care	202.3	26.0	125.1	353.4
Hospitals	1,522.6	263.9	851.4	2,637.9
Other Medical and Health Services	159.0	28.7	80.5	268.2
Pharmaceuticals	30.7	2.8	21.6	55.1
Employment (Jobs)				
Doctors and Dentists	7,227	1,700	5,892	14,818
Nursing and Protective Care	5,942	421	2,028	8,391
Hospitals	26,183	4,078	13,711	43,972
Other Medical and Health Services	3,112	421	1,295	4,828
Pharmaceuticals	999	40	358	1,397
Value Added (\$ Millions)				
Doctors and Dentists	411.9	68.5	237.4	717.8
Nursing and Protective Care	148.6	16.8	81.8	247.2
Hospitals	964.4	162.6	553.1	1,680.1
Other Medical and Health Services	87.7	18.3	52.1	158.1
Pharmaceuticals	25.9	1.7	14.3	42.0

Source: MIG, Florida Department of Revenue, Agency for Health Care Administration.

**Table A17.** Output, employment, and value added multipliers for the non-Rural Health Network counties of Florida, 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output Multipliers				
Doctors and Dentists	1.000	0.286	1.165	2.451
Nursing and Protective Care	1.000	0.204	1.192	2.396
Hospitals	1.000	0.283	1.106	2.389
Other Medical and Health Services	1.000	0.302	1.033	2.335
Pharmaceuticals	1.000	0.143	1.285	2.428
Employment Multipliers*				
Doctors and Dentists	10.913	3.677	15.726	30.316
Nursing and Protective Care	28.115	2.734	16.152	47.002
Hospitals	16.684	3.643	14.927	35.254
Other Medical and Health Services	17.984	3.502	13.921	35.407
Pharmaceuticals	26.380	1.706	17.652	45.738
Value Added Multipliers				
Doctors and Dentists	0.674	0.186	0.764	1.624
Nursing and Protective Care	0.741	0.132	0.785	1.659
Hospitals	0.642	0.176	0.726	1.544
Other Medical and Health Services	0.577	0.195	0.676	1.448
Pharmaceuticals	0.844	0.091	0.855	1.789

Source: MIG, 2001.

\*Jobs per million dollar output.

**Table A18.** Output, employment and value added impacts for the non-Rural Health Network counties of Florida, 1998.

Sector Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects
Output (\$ Millions)				
Doctors and Dentists	14,920.4	3,405.0	13,889.5	32,214.9
Nursing and Protective Care	3,169.2	516.3	3,018.4	6,703.9
Hospitals	35,335.3	7,990.0	31,231.0	74,556.4
Other Medical and Health Services	3,998.6	965.6	3,300.8	8,265.0
Pharmaceuticals	679.4	77.5	697.7	1,454.6
Employment (Jobs)				
Doctors and Dentists	162,831	43,837	187,471	394,139
Nursing and Protective Care	89,103	6,924	40,900	136,927
Hospitals	589,540	102,846	421,427	1,113,813
Other Medical and Health Services	71,912	11,190	44,475	127,577
Pharmaceuticals	17,922	926	9,582	28,430
Value Added (\$ Millions)				
Doctors and Dentists	10,059.9	2,212.2	9,113.4	21,385.5
Nursing and Protective Care	2,349.2	335.3	1,989.0	4,673.5
Hospitals	22,673.7	4,964.8	20,497.4	48,135.9
Other Medical and Health Services	2,307.4	621.5	2,160.4	5,089.4
Pharmaceuticals	573.2	49.2	464.2	1,086.5

Source: MIG, Florida Department of Revenue, Agency for Health Care Administration.

**Table A19.** Value of output (healthcare expenditures in the counties of the Rural Health Networks of Florida) (\$Millions), 1998.

County/Region	Doctors and Dentists	Nursing & Protective Care	Hospitals	Other Medical & Health Services	Pharmaceuticals
<b>Big Bend Rural Health Network</b>	<b>401.0</b>	<b>199.0</b>	<b>327.0</b>	<b>106.8</b>	<b>6.6</b>
Gadsden	8.0	2.4	8.2	2.9	1.2
Jefferson	1.7	4.6	0.0	4.0	0.0
Leon	357.5	178.9	281.6	94.2	4.6
Madison	5.2	4.1	9.0	1.1	0.0
Taylor	11.7	4.4	28.2	0.8	0.8
Wakulla	16.8	4.6	0.0	3.9	0.0
<b>Health Partnership of North Central Florida</b>	<b>441.9</b>	<b>62.3</b>	<b>714.0</b>	<b>144.6</b>	<b>6.0</b>
Alachua	405.2	23.1	678.3	100.8	4.6
Bradford	9.4	9.2	0.0	7.0	0.0
Dixie	5.8	0.0	0.0	3.4	0.0
Gilchrist	3.2	7.2	0.0	5.1	0.0
Hamilton	2.2	2.1	1.9	2.0	0.0
Levy	6.5	5.9	11.0	12.3	0.0
Suwannee	7.6	14.9	17.1	13.9	1.4
Union	1.9	0.0	5.6	0.1	0.0
<b>Heartland Rural Health Network</b>	<b>793.4</b>	<b>203.2</b>	<b>1,923.9</b>	<b>170.4</b>	<b>30.4</b>
Charlotte	220.0	57.2	574.5	50.6	7.7
DeSoto	8.7	3.5	42.2	4.6	0.0
Hardee	25.6	6.8	16.8	3.0	0.0
Highlands	53.0	19.1	295.5	18.2	3.8
Polk	486.1	116.6	995.0	94.0	18.9
<b>Lake Okeechobee Rural Health Network</b>	<b>1,858.5</b>	<b>280.1</b>	<b>3,315.7</b>	<b>629.0</b>	<b>64.1</b>
Glades	0.0	0.0	0.0	0.0	0.0
Hendry	9.0	7.6	21.3	5.2	0.0
Martin	165.3	22.9	381.3	85.8	9.5
Okeechobee	26.0	9.8	112.8	3.3	1.4
Palm Beach	1,658.1	239.8	2,800.3	534.6	53.2
<b>Northwest Florida Rural Health Network</b>	<b>781.1</b>	<b>109.1</b>	<b>1,617.8</b>	<b>154.7</b>	<b>19.9</b>
Escambia	534.6	55.2	1,012.1	79.3	10.9
Okaloosa	187.5	33.8	500.5	43.6	5.2
Santa Rosa	55.3	10.3	89.4	20.8	2.4
Walton	3.8	9.8	15.7	11.0	1.4

**Table A19.** Value of output (healthcare expenditures in the counties of the Rural Health Networks of Florida (\$Millions), 1998 (con)).

County/Region	Doctors and Dentists	Nursing & Protective Care	Hospitals	Other Medical & Health Services	Pharmaceuticals
<b>Panhandle Area Health Network</b>	<b>50.4</b>	<b>38.5</b>	<b>95.4</b>	<b>11.5</b>	<b>1.6</b>
Calhoun	4.7	12.2	6.9	2.4	0.0
Holmes	5.7	6.1	12.4	0.3	0.0
Jackson	23.1	16.0	58.0	6.8	1.6
Liberty	2.4	3.8	0.0	0.1	0.0
Washington	14.5	0.5	18.0	1.8	0.0
<b>Rural Health Network of Monroe County</b>	<b>48.4</b>	<b>11.9</b>	<b>154.6</b>	<b>16.7</b>	<b>8.3</b>
<b>St. Johns River Rural Health Network</b>	<b>746.5</b>	<b>202.3</b>	<b>1,522.6</b>	<b>189.2</b>	<b>30.7</b>
Baker	2.0	7.6	7.7	0.0	0.0
Clay	106.4	12.2	113.7	25.4	1.5
Flagler	70.5	4.8	44.9	10.3	1.8
Putnam	45.4	11.1	134.3	24.2	2.7
St. Johns	81.3	36.2	77.7	20.5	1.1
Volusia	440.8	130.4	1,144.4	108.8	23.6
<b>Non-Rural Health Network Counties</b>	<b>11,676.1</b>	<b>3,169.2</b>	<b>35,335.3</b>	<b>2,895.0</b>	<b>679.4</b>
Bay	237.6	37.2	201.9	50.9	6.0
Brevard	621.2	104.0	395.0	216.2	25.2
Broward	1,970.2	188.0	751.5	703.2	126.8
Citrus	119.9	49.0	98.5	31.4	4.3
Collier	295.3	53.0	253.2	102.0	14.8
Columbia	39.9	11.4	59.7	10.5	0.0
Duval	1,178.4	140.7	940.3	294.2	33.6
Franklin	3.0	4.8	3.0	4.0	0.0
Gulf	4.7	17.8	0.0	2.1	0.0
Hernando	125.1	28.6	132.8	31.6	7.3
Hillsborough	1,265.9	137.9	880.3	446.0	55.0
Indian River	169.1	27.2	132.6	35.5	8.3
Lafayette	0.0	1.0	0.0	0.0	0.0
Lake	223.9	43.6	223.8	57.2	8.9
Lee	669.2	73.0	199.7	140.8	23.1
Manatee	284.4	75.8	210.8	61.7	12.4
Marion	327.4	53.8	111.5	98.0	10.5
Miami-Dade	2,688.4	372.1	2,759.5	620.8	164.4
Nassau	15.4	15.2	0.0	3.8	1.5
Orange	1,413.5	199.1	1,182.3	272.2	41.5
Osceola	98.9	40.9	92.0	15.7	9.0
Pasco	413.1	77.3	330.7	77.8	16.3

**Table A19.** Value of output (healthcare expenditures in the counties of the Rural Health Networks of Florida (\$Millions), 1998 (con)).

County/Region	Doctors and Dentists	Nursing & Protective Care	Hospitals	Other Medical and Health Services	Pharmaceuticals
Pinellas	1,636.9	663.2	3,105.8	430.7	60.3
St. Lucie	182.3	56.2	615.3	34.3	11.3
Sarasota	561.5	401.7	990.8	166.6	22.2
Seminole	366.7	56.3	215.2	86.7	16.6
Sumter	8.4	6.4	0.0	4.9	0.0

NA – Not Available.

Source: Minnesota Implan Group, 2001, Florida Department of Revenue, Agency for Health Care Administration.

**Table A20.** Health expenditures for Rural Health Networks with and without downward adjustments (\$ Millions), 1998.

Rural Health Network	Major Cities in Rural Health Network	Health Expenditures Including Major City	Total Health Expenditures Without Major City
Health Partnership of North Central Florida	Gainesville	1,982.3	1,133.4
St. Johns River	Jacksonville	3,159.7	2,537.4
Northwest Florida	Pensacola	2,877.9	2,584.7
Big Bend	Tallahassee	1,832.2	755.9
Lake Okeechobee	Belle Glade Boca Raton Boynton Beach Delray Beach Jupiter Beach Lake Worth Loxahatchee North Palm Beach Port St. Lucie West Palm Beach	7,308.9	5,393.1

**Table A21.** County and city populations for counties whose health expenditures were adjusted downward to reflect economic impacts of rural part areas only in the Rural Health Networks of Florida.

Rural Health Network	County	1999 County Population	Metropolitan Statistical Area	Major City in the County	1999 Population of Major City*	Percentage of County Population that is Rural (%)
Health Partnership	Alachua	198,484	Gainesville	Gainesville	92,291	53.5
St. Johns River	Clay	141,353	Jacksonville	Jacksonville	695,877	34.1
St. Johns River	St. Johns	119,685	Jacksonville	Jacksonville	695,877	34.1
Northwest Florida	Escambia	282,432	Pensacola	Pensacola	57,112	85.8
Northwest Florida	Santa Rosa	120,952	Pensacola	Pensacola	57,112	85.8
Big Bend	Leon	215,926	Tallahassee	Tallahassee	135,938	37.0
Lake Okeechobee	St. Lucie	118,117	Fort Pierce/ St. Lucie	Port St. Lucie**	81,845	72.7
Lake Okeechobee	Palm Beach	1,049,420	West Palm Beach/ Boca Raton	Belle Glade Boca Raton Boynton Beach Delray Beach Jupiter Beach Lake Worth Loxahatchee North Palm Beach West Palm Beach	360,964	65.6

\*Reflects MSA-based adjustments described in Methods.

\*\*St. Lucie was subtracted from Martin County because Martin County belongs to the Fort Pierce/ St. Lucie MSA. Fort Pierce was not subtracted from Martin County because it is located near the border of St. Lucie and Indian River Counties, leaving it less likely to recruit economic activity from Martin County.