

# An Economic Assessment Report Community Impact Associated to Glen Rose Medical Center

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*A Report Completed for:*

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## **ABSTRACT**

This study investigated the economic impact of Glen Rose Medical Center (GRMC) to Somervell County. This impact assessment uses the IMPLAN model for county impacts as well as added job creation. GRMC is related to economic value that brings tax revenues, job creation and business development to the local region. GRMC is estimated to have a \$52.3 million economic impact to the region, which ranks it among the highest single economic sector in Somervell County. The medical center has an additional job creation of 500 jobs. Economic impacts are derived from the operational cost of GRMC with other community sectors such as physician businesses, related business revenues and out-of-county visitors creating additional value.

## Previous Research Related to Regional Hospital Economic Impact

Medical center economic impact has become a national focus of research as hospitals have incurred an increasingly greater cost of care with increases in annual bad debt expense. In a study for the University of Washington's medical center, researchers concluded:

*“cost of supporting a primary care clinic is likely to be more than offset by the revenues generated from the use of hospital and referral services by patients who received care in the primary care setting” (Schneeweiss, Ellsbury, Hart & Geyman – Journal of American Medical Association, 1989)*

In a 2001 study for the economic impact value of the Houston Medical Center completed by the Federal Reserve Bank of Dallas the study followed a methodology that treats the hospital center as an economic unit valuable to the community (Federal Reserve Bank of Dallas-Houston Branch, 2001) This approach parallels other community economic centers such as business development and tourism. This model is applied to a regional hospital by factoring in:

1. Direct spending of the medical center within the local economy
2. Induced values for related business earning, which are invested in the local economy
3. Job creation of additional spending

The report for the Texas Medical Center produced the following economic impact statement:

Summary of Economic Impact Results - Texas Medical Center	
Economic Impact of Texas Medical Center (\$ in Millions)	(Year 2000 operations)
TMC and affiliates	\$ 2,063.60
Faculty and staff	\$ 409.10
Students	\$ 133.20
Visitors	\$ 29.40
<b>Total direct expenditures</b>	<b>\$ 2,635.30</b>
Secondary expenditures due to TMC	
Added regional production	\$ 1,581.20
Income-induced spending	\$ 1,607.50
<b>Total regional expenditures</b>	<b>\$ 5,824.00</b>
<i>SOURCE: Texas Medical Center; authors' calculations.</i>	

A November 2008 article by the American Medical News identified that local physicians bring economic values to local communities. The article found:

*“Medical societies locally and nationally are presenting economic impact studies showing that physician practices pump billions of dollars into local and state economies through payrolls and purchases of local goods and services” (Karen Caffarini, AMNews staff, 2008)*

This article reviewed several other research articles and found all point to economic impacts from medical centers and physicians. An example result is the Robert Graham Center, a research group sponsored by the American Academy of Family Physicians. They completed a 2006 report focusing solely on the impact of family practice physicians in each of the 50 states. It found that individual family physician had an annual economic impact of \$700,000 to \$1.5 million per year with specific value depending on location.

The results from the study produced regional values, which are listed in the following table.

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State	Economic impact per physician
New York	\$1.0 million
Florida	\$941,000
Ohio	\$923,000
Michigan	\$907,000
Mississippi	\$1.3 million
Colorado	\$892,000
Idaho	\$812,000
Texas	\$1.1 million

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*Source: November 2008 article by the American Medical News by Robert Graham Center, 2006*

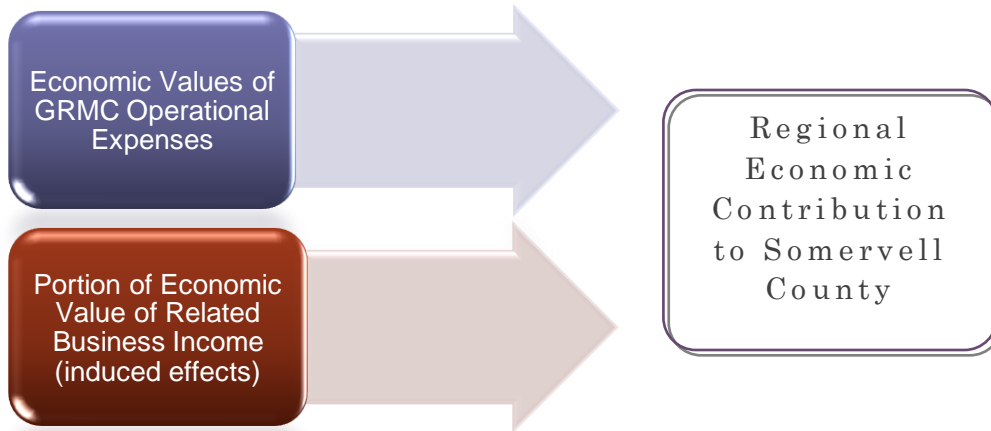
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Texas is reported to have one of the highest regionally impacting local economies by \$1.1 million per physician business. These impacts are derived from employee and staff spending and economic value of secondary and induced values. One interesting point in economic impacts of physicians is that most reside close to their business operation, which increases regional economic values as they live and spend in the same community as business operations, which reduces economic leakage and increase economic value.

An approach to measuring the economic value of Glen Rose Medical Center would be to follow the assessment model previously outlined and consider hospital related businesses and physician gross revenues to calculate related business induced economic values.

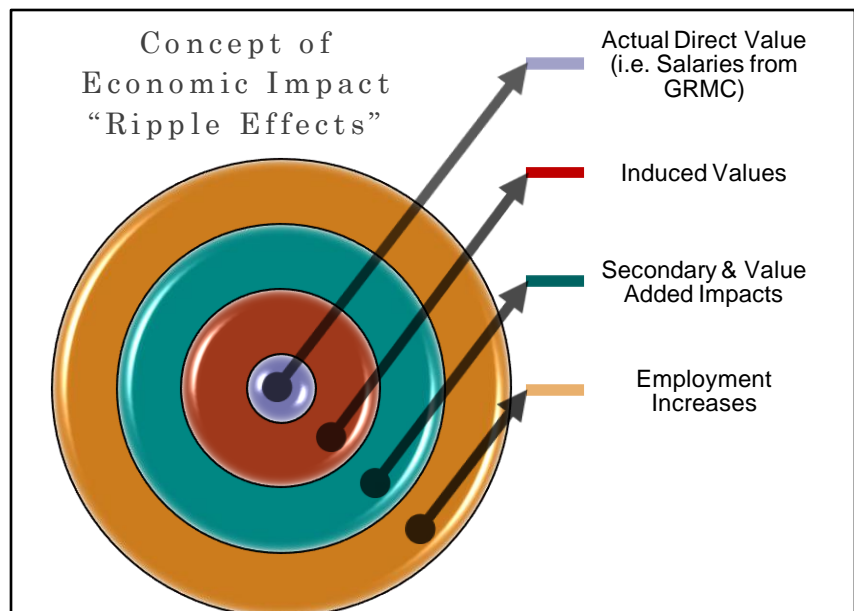
## Determining Economic Impact

Economic impacts are values above the related core values such as actual expenses or income. Direct values in this study include hospital-operating expenses such as payroll, supplies or professional fees. A secondary impact area is a portion of the economic value of related businesses and physician business income. The following figure defines this applied concept of economic value.



Economic impacts are measured by multiplier values that represent the increase in economic value from a \$1.00 value in a local economy (see descriptive figure).

Economic impacts exist as ripples in the economy that occur from a direct economic value and moves through the economy as inducing additional spending, which creates secondary impact and increases in employment.



Economic impact values are represented as economic multipliers. A model of assessment that creates multiplier values is known as the IMPLAN model (Impact analysis for PLANning), which is a widely known input-output economic modeling system to create multiplier values for targeted region.

Input-output accounting describes the commodity flows from producers to intermediate and final consumers. The total industry inputs of commodities, services, employment compensation, and value added and imports are equal to the value of the commodities produced. Purchases for final use (final demand); drive the model as producers purchase goods and services from other producers who, in turn, must purchase commodities to provide for the producers who are selling to final demand. This cycle of indirect purchases continues until leakages from the region (imports and value added) stop the cycle. In the input-output model, multipliers are mathematically derived which uniquely describe the change of output for each and every industry as a result of producing one dollar of final demand which are unique to each industry.

IMPAN multipliers for this study utilize Type SAM multiplier values (Type II) for output benefits, which include direct and induced spending. This study also uses employment multipliers to estimate job creation from medical center employment. The following table is a list of the IMPLAN multipliers used in this report.

<b>IMPLAN - Type SAM Output Area (Somervell County)</b>	<b>Output</b>	<b>Employment</b>
394Offices of physicians- dentists- and other health	\$1.207303	1.192676
395Home health care services	\$1.209235	1.077812
397Hospitals	\$1.248264	3.238994
398Nursing and residential care facilities	\$1.190534	1.060874
400Individual and family services	\$1.180450	1.352872
325Retail Stores - Health and personal care	\$1.191561	1.132966

*Source: IMPLAN Economic Impact Report – Somervell County, Texas*

As an example, values associated with Hospitals for output values measure \$1.25 per \$1.00 in associated values in Somervell County. Employment values represent 3.24 jobs per 1.00 or an additional 2.24 jobs for each employee directly employed by hospitals in Somervell County.

## Economic Impact of Glen Rose Medical Center

As previously mentioned, the economic model for this assessment is:

1. Economic value of operational spending for Glen Rose Medical Center
2. Physician business and related business income
3. Visitor economic impact from spending by those uses services but residing out of Somervell County
4. Additional jobs created by economic impacts from Glen Rose Medical Center, physician businesses and related businesses

### Methodology for Measuring Economic Impact

Methodology used to create economic impacts employs a conservative approach. Utilizing only one economic multiplier (Type SAM) to represent total value is conservative and avoids “double counting effects” that occur when adding several multipliers together.

This report utilizes the 2008 fiscal year operational expenses as direct economic values for GRMC. Operational expenses follow the financial statement categories and use IMPLAN multipliers for each associated category.

Related business economic values were derived from personal phone surveys to identified businesses that are possible related to operations of GRMC. The phone interview communicated a completely anonymous report and only a summary of results. The goal for this approach was conservative and only to measure the portion of business income related to GRMC.

Physician economic impact for Glen Rose was more difficult to measure. To facilitate time and communication constraints, this report utilizes the 2006 report of physician value of \$1.1 million (Robert Graham Center, 2006). This values is then proportionately allocated to each physician business located in Glen Rose.

Visitor travel information was drawn from a sample of visitor surveys collected in 2007 during assessment of tourism economic impact. This sample included visitors traveling within 60 miles and measured their spending for travel cost and meals. Since the sample size was limited, a 95 percent confidence interval was used to create an estimated an average spending of \$16.87 per visit. This value was applied to those visiting GRMC that reside in counties beyond Somervell.

#### Economic Impacts Related to GRMC

Glen Rose Medical Center fiscal year expenses are the primary economic values created from operations. These influence the region in their associated values as they support community businesses, pay local salaries and through depreciation represent local capital suppliers. In 2008, GRMC spent \$16.5 million in operational expenses. These expenses create an economic impact of \$24.8 million in regional values. The medical center also reports 250 full-time employees, which determines that GRMC creates 371 additional jobs in the local economy, which are in addition to the 250 level of current employment.

Business surveys resulted in all businesses (100%) reporting revenues related to GRMC. These businesses also reported negative affects if reductions in services from GRMC were to arise. The following table is a summary of business responses and calculations of report values.



### Summary of Related Business Survey

Does GRMC affect your business Revenues?	100%	Economic Impact Directly related to GRMC	\$17.4 million
Total Economic Impact of Gross Business Revenues	\$43.8 million	Would a reduction in GRMC services negatively affect your business?	100%
What portion of your business is directly related to GRMC? (%)	39.75%	Estimated Loss in business is reduced services by GRMC	34%

These businesses have economic impacts from gross sales of nearly \$44 million and estimate that \$17.4 million of their economic impacts are directly related to GRMC (39.75%).

A hypothesis is that business revenues would be replaced by other medical centers, and not all relationships in revenue would be exclusive to GRMC. However, businesses reported nearly equal losses in revenues (34%) as sales related directly to GRMC (38%). This identifies a strong relationship between hospital services related to business revenue.

As previously mentioned, physician businesses in Texas are estimated to create \$1.1 million in economic impact and with reported physician businesses in Glen Rose. This represents an additional \$9.9 million in economic impacts from physician business revenue.

Patients served were another aspect of economic value related to GRMC. The following is 2008 source of GRMC patients served.

### Glen Rose Medical Center Customers Served in 2008 by County

County	Inpatient 2008	ER 2008	2008	% Values
Somervell	310	2,208	2,518	40.0%
Hood	309	1,859	2,168	34.5%
Bosque	67	514	581	9.2%
Erath	12	86	98	1.6%
Johnson	23	241	264	4.2%
other	47	612	659	10.5%
Totals	768	5,520	6,288	

As illustrated in the previous table, 60 percent of GRMC customers reside outside of the county, which creates a positive balance of trade with likely more spending to support GRMC derived from counties outside of Somervell County. These visitors bring additional travel value, retail shopping and other forms of revenue in terms of tourism spending.

Tourism value for this study was difficult to assess, but with 60 percent of patients residing in surrounding counties, there is an obvious importing of visitor spending. Using surveys from a 2007 tourism study for Glen Rose, and measuring only those traveling from surrounding counties and only calculating travel and meal cost, there is an economic impact from out-of-county visitors of nearly \$121,000. This is a very conservative estimate using a 95 percent confidence interval mean value due to the low sample size and context of the survey. The true economic value from visitor spending related to GRMC logically maybe higher, but difficult to determine with current information.

The following table is a summary of all areas of economic impact GRMC provides to the local economy.

Glen Rose Medical Center 2008 Economic Impact from Operations, Job Creation and Community Economic Impact

	GRMC Direct Eco. Impact <sup>1</sup>	Additional Job Creation <sup>2</sup>
Salaries & Benefits	\$ 13,779,355	371
Supplies	\$3,546,457	
Purchased Services	\$3,348,448	
Operational Activities	\$ 2,105,787	
Capital Investments (annualized)	\$ 717,752	
Other Operations	\$ 1,284,763	
<b>Total Economic Impact from Operations</b>	<b>\$24,782,562</b>	<b>371</b>
Physician Related Economic Impact	\$9,944,000	9
Visitor / Travel Out-of-County Patients	\$120,856	<i>na</i>
Other Related Business Economic Impact	\$17,411,038	120
<b>Total Values Related to GRMC</b>	<b>\$52,258,456</b>	<b>500</b>

<sup>1</sup> -Economic impacts are derived from Type SAM output multiplier values for each industry (direct + indirect + induced)

<sup>2</sup> - Employment value above current GRMC employees, physicians and businesses x Type SAM IMPLAN Multiplier Value

As illustrated in the previous table, the estimated economic impact directly related to GRMC is \$52.3 million in regional economic values. These values represent directly related spending in Somerville plus the associated economic impacts associated to the county. This value also considers that not all related economic values stay in the county, which are called leakages and are accounted for in the IMPLAN model values used in this report.

Job creation is an additional value and measures the additional jobs created in other sectors from positions related to GRMC. This table also illustrates the additional jobs created from GRMC employees, physician businesses and other related business. These combine together to create an additional 500 jobs related to GRMC. Business surveys resulted in many comments related to the loss of staff that could occur if GRMC reduced services, and these losses in jobs would create additional job losses in the community.

## Comparing GRMC Economic Value to Other Areas

Economic impacts are difficult to relate to as they account for values beyond current levels. However, comparison to other known economic values provides a comparison to better relate value.

Hotel revenue and estimated tourism value are related economic values and definitely important sectors to Glen Rose. In 2008 and the final quarter of 2007, hotel revenue for Glen Rose hotels annually is \$4.6 million and has an estimated economic impact of \$5.6 million (IMPLAN Type SAM \$1.21). This value is another significant sector to the local economy and in some cases related to GRMC.

Tourism is a very large asset for Glen Rose and is likely related in some value to the operation existence of the GRMC. According to Glen Rose Convention and Visitors Bureau, information request for those traveling to Glen Rose include questions related to local medical facilities. This may include questions for the elderly or a youth group

parent concerned for a child's health care in the event of an emergency. In addition to the tourism role of GRMC, tourism in Glen Rose is currently valued at 31 million (Using a 2007 consulting report), which again is lower than the estimated \$52.3 million calculated value for GRMC.

## Required Funding for Glen Rose Medical Center

In reviewing 2008 financials, the increases in bad debt costs, depreciation and operational cost created a 2008 financial loss. In 2008, net revenue was \$18.5 million, but annual cost of \$19.8 million resulted in a loss of \$1.3 million.

The 2008 financial loss in relationship to total economic value (\$52.3 million) is very small and is a type of county investment. In relation to total value, there is a \$40 return in economic value for \$1.00 in annual loss (\$52.3 million / \$1.3 million loss).

## Conclusion

In reviewing economic research related to hospitals and health services, there is national interest in understanding the economic impact of hospital / health operations. Research has concluded that regional cost to operate these hospitals is more than covered by economic impacts. This hypothesis by other researchers is revealed true in this report.

Previous research outlines major medical education centers as values in the billions with associated business economic impacts as a sector of the value. Glen Rose Medical Center may consider increasing the concept of adding some educational unit to the medical center, which would bring extended services as well as the associated increases in economic values such as increases in residents, educational revenues and services. The additional cost may not be offset by the value, but investigated interest may provide insight.

The \$52.3 million economic impact seems to be one of single largest economic sectors of Glen Rose related to community services and economic value. When compared to the obvious community assets such as tourism spending that attracts visitors to the region, it is clear Glen Rose Medical Center is an additional community asset. When placed in relation to population (2000 census), there is an economic impact from GRMC of \$7,685 per county resident (\$52.3m / 6,800 residents).

An additional recommendation is to replicate this study using 2009 financials and extend the survey efforts to include additional community businesses as well as incorporate patient surveys to measure their travel cost, level of service and other local business impact such as pharmacy and other services used in Glen Rose. This report is an initial study relating to potential economic impact, with limited time and information constraints. However, this report serves as a baseline data source and modifications to assessment will result in likely higher economic returns.