



## **Economic Impact of a Critical Access Hospital on a Rural Community**

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### **Key Findings**

- A critical access hospital employs 127 employees with \$6.0 million in wages, salaries and benefits.
- Total annual impact includes 170 jobs and \$7.1 million in wages, salaries, and benefits from hospital operations.
- Operations impacts are long-term impacts that occur each and every year the hospital is in operation.
- For each \$1 million of construction expenditures, there are nine construction employees with annual wages, salaries, and benefits wages of \$322,551.
- Total annual construction impacts for each \$1 million of construction are eleven jobs with \$403,189 in wages, salaries and benefits impact and \$100,797 in taxable retail sales impact.
- Construction impacts only occur during the year of construction and will vary from year to year.
- A template is provided to assist critical access hospitals in determining their economic impact.

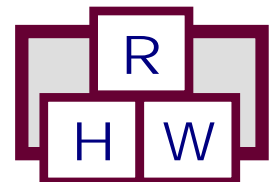
### **Background**

Critical access hospitals (CAHs) are a critical part of the health system for many rural communities.<sup>1,2,3</sup> The health sector in a rural community, anchored by a CAH, is responsible for a number of full- and part-time jobs and the resulting wages, salaries, and benefits. Research findings from the National Center indicate that typically ten to fifteen percent of the jobs in a rural community are in health care and that typically rural hospitals are one of the top employers in the rural community.<sup>4</sup> The employment and the resulting wages, salaries, and benefits from a CAH are critical to the rural community economy.<sup>5</sup>

Health care is important to the local economy in order to retain/recruit the elderly (including retirees) to live in the local community.<sup>6,7</sup> Health services and safety services are the top concerns of the elderly in choosing where to live. The elderly are the largest users of health care and have had the largest growth in the past several years.<sup>8</sup>

Health care is important for retaining or recruiting industry and business to the local community. Decisions for industrial and business locations are significantly influenced by the availability of

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# The Economic Impact of a Critical Access Hospital on the Rural Economy

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quality education services and health services.<sup>9</sup> CAHs are a key part of the rural community health care system and the rural economic system.

## Purpose of the Study

The purpose of the study is to estimate the economic impact of a CAH. This information illustrates the need for rural and CAHs to share their specific economic impact to their rural communities.

Every dollar spent outside the medical service area takes money away from local businesses and the local economy. When residents obtain health care outside the MSA, no spending occurs in local health care or the local economy. Dollars spent outside the MSA also reduce the local tax base. A CAH community can use the economic impact study to educate local residents on the importance of utilizing local health care (including the local hospital) and on the importance of re-capturing the health dollars that are leaving the local community.

Presenting the economic impact study of the hospital to the local residents can assist the hospital to:

- foster communications with the community residents;
- gain the local residents' support for the local hospital and encourage local residents to utilize local hospital services and other health services; and
- foster community support for hospital capital improvement and/or expansion of programs and services.<sup>10,11,12,13</sup>

Impact studies can provide information on economic linkages of the local health sector (sector interactions and interrelationships). Health care may be the only high tech sector in a local economy.<sup>14</sup>

The economic impact data may also be useful to local policy-makers in other community economic development efforts. The economic impact study of the CAH can be critical for any economic development activities or programs to develop in the local economy.

## Approach

The National Center has measured the economic impact of many CAHs over the years. Data were collected for 91 CAHs, representing 18 states, spanning the years 2012 to 2016. These data were from previous studies prepared by the National Center, from IMPLAN data<sup>14</sup> and from studies prepared by the Oklahoma Office of Rural Health. IMPLAN is a private company that generates data and software that are utilized to derive the multipliers for the economic impact studies.

## The Data

Population data for the medical service areas were obtained from each economic impact study. The populations of the medical service areas of the CAHs ranged from 2,246 to 44,159, with a mean (average) population of 17,663 (**Table 1**).

Employment data, including wages, salaries, and benefits, were obtained from the studies (**Table 1**). Employment includes all full- and part-time employees. The range for employment was from 12

# The Economic Impact of a Critical Access Hospital on the Rural Economy

to 428 employees, with an average employment of 127 employees. The range for wages, salaries, and benefits was from \$0.4 million to \$26.4 million, with an average of \$6.0 million. These are the direct impacts of employment and wages, salaries, and benefits of a CAH and represent long-term

impacts that occur each and every year that the hospital is in operation.

Construction activities (not land or equipment) can also be measured. However, hospital construction expenditures will vary from year to year. Construction impacts occur only during the year of construction. IMPLAN data provide employment ratios per million dollars of construction and average annual construction wages, salaries, and benefits. The average from IMPLAN data for the CAHs' medical service areas are nine employees per every million dollars of construction expenditures. The IMPLAN data also provided the average wages, salaries, and benefits for each employee of \$35,839. Thus, each million dollars of construction expenditures result in nine construction employees with annual wages, salaries, and benefits wages of \$322,551.

The average construction employment and labor income for different levels of construction expenditures are illustrated; these include \$1, \$5, \$10, and \$15 million in construction expenditures. Results are provided at the bottom of **Table 1**.

During the years in which the hospital has construction activities, the employment impact and the wages, salaries, and benefits impact for hospital operations and hospital construction can be added together to show the total impact of the hospital.

## The Multiplier Effect

The data in **Table 1** reflect the direct impacts of a CAH. The secondary and total economic impacts are measured from multipliers generated from an input-output model, utilizing IMPLAN data.<sup>14</sup> The

**Table 1**  
**Summary Data Results**  
**from Critical Access Hospital Studies**  
**and IMPLAN Data, 2016**

Number of Studies in Sample	<b>91</b>	
Population of Medical Service Areas		
Average	<b>17,663</b>	
Range	2,246-44,159	
Hospital Employment		
Average	<b>127</b>	
Range	12 - 428	
Hospital Wages, Salaries and Benefits (WSB)		
Average	<b>\$6.0 million</b>	
Range	\$0.4 million - \$26.4 million	
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Hospital Construction Data		
Per \$million of Construction Expenditures		
Average Employment	<b>9</b>	
Average WSB	<b>\$322,551</b>	
<hr/>		
<b>Average Employment &amp; WSB</b>		
<b>for Alternative Construction Amounts</b>		
<b>Construction</b>	<b>Average</b>	<b>Average</b>
<b>(\$millions)</b>	<b>Employment</b>	<b>WSB</b>
\$1	<b>9</b>	<b>\$322,551</b>
\$5	45	\$1,612,755
\$10	<b>90</b>	<b>\$3,225,510</b>
\$15	135	\$4,838,265

SOURCE: Data from National Center, Oklahoma Office of Rural Health, and IMPLAN; National Center studies from 2012-2016; Oklahoma SORH studies from 2013-2016; IMPLAN data from IMPLAN Group, LLC [www.implan.gov].

input-output model is widely used by economists to illustrate the multiplier effect.

# The Economic Impact of a Critical Access Hospital on the Rural Economy

## Results – Impact of Hospital Operations

From the data, a CAH on average employs 127 employees and pays \$6.0 million in wages, salaries, and benefits. From the 91 CAH sample, the average multipliers for hospital operations and hospital construction were calculated.

The economic impacts from hospital operations are shown in **Table 2**. The average hospital employment multiplier was 1.34. For every job in the hospital, the multiplier indicates that an additional 0.34 jobs are created in other businesses and industries in the local economy. The average secondary employment impact from CAH operations is 43 jobs and the average total employment impact is 170 jobs for a CAH.

The average hospital wages, salaries, and benefits

**Table 2**  
**Economic Impact of Operations**  
**for a Critical Access Hospital**

<b>HOSPITAL</b>		
<b>Employment</b>		
Direct Impact		127
Multiplier	1.34	
Secondary Impact		<u>43</u>
Total Impact		<u><b>170</b></u>
<b>Wages, Salaries, and Benefits</b>		
Direct Impact		\$6.0 million
Multiplier	1.19	
Secondary Impact		<u>\$1.1 million</u>
Total Impact		<u><b>\$7.1 million</b></u>
Average retail sales impact		<u><b>\$1.8 million</b></u>

SOURCE: Data from National Center, Oklahoma Office of Rural Health, and IMPLAN.

multiplier was 1.19. The CAH generates an average of \$1.1 million in secondary wages, salaries, and benefits impact and an average of \$7.1 million in total wages, salaries, and benefits impact.

The model also estimates how much of the total wages, salaries, and benefits impact is spent in retail stores in the rural community. A CAH generates an average of \$1.8 million in taxable retail sales in the rural community. This means that of the average labor income impact of \$7.1 million, an average of \$1.8 million is spent on taxable retail sales.

## Results – Impact of Hospital Construction Expenditures

**Table 3** presents the average impacts of alternative levels of construction activities of a CAH. The average hospital construction employment multiplier was 1.23 and the average hospital construction labor income multiplier was 1.25. The multipliers are applied to the alternative levels of construction activities; \$1, \$5, \$10, and \$15 million of construction expenditures. The taxable retail sales impacts are also shown in the table.

For example, the impact of \$10.0 million in hospital construction expenditures results in an average of 111 total employment impact with \$4.0 million in average wages, salaries, and benefits impact and generates an average of \$1.0 million in local taxable retail sales. The local and state sales tax can be applied to the taxable retail sales to illustrate the local and state sales tax impact.

# The Economic Impact of a Critical Access Hospital on the Rural Economy

**Table 3**  
**Economic Impact of Construction Activities**  
**of a Critical Access Hospital**

Employment Impact					
Construction (\$millions)	Average Employment	Multiplier	Secondary Impact	Total Impact	
\$1	9	1.23	2	11	
\$5	45	1.23	10	55	
\$10	90	1.23	21	111	
\$15	135	1.23	31	166	

Labor Income (Wages, Salaries & Benefits) Impact					
Construction (\$millions)	Average WSB	Multiplier	Secondary Impact	Total Impact	Retail Sales Impact
\$1	\$322,551	1.25	\$80,638	\$403,189	\$100,797
\$5	\$1,612,755	1.25	\$403,189	\$2,015,944	\$503,986
\$10	\$3,225,510	1.25	\$806,378	\$4,031,888	\$1,007,972
\$15	\$4,838,265	1.25	\$1,209,566	\$6,047,831	\$1,511,958

SOURCE: IMPLAN data [www.implan.com].

## Results – Total Impact of Hospital Operations and Construction Activities

The average impacts from both operations and construction of a CAH can be added together to illustrate the total economic impact of the hospital for a given year. This is illustrated in the template at the end of this study.

The impacts from operations occur each and every year the CAH is in operation. The construction impacts occur only during the year of construction. Construction activities can be overlooked in illustrating the economic impact of a hospital.

## Policy Implications

Many policy issues involve providing access to health care services to rural communities. The impact of a CAH may be useful in analyzing access to health care policy issues. These issues can be at

the local, county, regional, state, or national level. CAHs importance to their local communities and local economies is illustrated through economic impact studies. These studies encourage local utilization of health care, strive to ensure the provision of local health care services, and illustrate health care’s importance to the local economy. Knowing the economic impact of a CAH can assist policy-makers in making future decisions.

## Economic Development

CAHs enhance the rural community’s opportunity to attract new business and industry.<sup>9</sup> This could, in turn, result in new jobs and new families moving into the rural community. The elderly (including retirees) choose to live in rural communities with health care services.<sup>6,7</sup> This represents an additional opportunity for enhancing the local economy. The elderly are a growing sector of the population. The

# The Economic Impact of a Critical Access Hospital on the Rural Economy

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elderly retirees have income to spend and utilize the largest amount of health services.

From the studies developed and the research conducted by The National Center, the contribution of critical access hospitals is vital in improving the health and wellness of the local residents and in enhancing the overall economic strength of the rural community.<sup>10,11,12,,13</sup>

## Template for Determining the Economic Impact of Your Local Hospital

A template is provided on the next page to estimate the economic impact of a specific CAH. Data needed to complete the template include:

- ✓ Total full- and part-time employment for the hospital (including contract labor)
- ✓ Total wages, salaries, and benefits for the hospital (including payments for contract labor)
- ✓ Total annual hospital construction expenditures (NOT including equipment or land)

It is optional whether medical service area-specific multipliers, employment per million dollars of construction, and annual average construction wages from IMPLAN are utilized. Users are, however, encouraged to use their own area-specific IMPLAN data so the impact reflects the actual study area.

The local retail sales tax capture ratio is used to determine the taxable retail sales in the medical service area, as well as local and state sales taxes generated in the medical service area. It is optional

whether the local retail sales tax capture ratio is utilized from county data. However, users are encouraged to utilize their area-specific local retail sales tax capture ratio. The local retail sales tax capture ratio is the ratio of county taxable retail sales to county total personal income. The county taxable retail sales may be available through your state tax agency. The total personal income is available from BEA data at [www.bea.gov](http://www.bea.gov).

Your CAH can utilize the data provided from the research study or seek these optional data to make the impacts specific to your medical service area.

If assistance is needed in completing the template, contact the National Center for Rural Health Works or seek additional information from the website:

[www.ruralhealthworks.org](http://www.ruralhealthworks.org)

## The Economic Impact of a Critical Access Hospital on the Rural Economy

### Template for Determining Economic Impact of Your Critical Access Hospital<sup>1</sup>

#### Determine Employment and Labor Income from Your Hospital Construction Expenditures

	Total in Millions	Employment/ \$million Constr.	Est. Direct Employment	Est. Annual WSB/Employee	Est. Annual Labor Income
Construction Total		9		\$35,839	

#### Employment Impact

	Direct Employment	Multiplier	Secondary Impact	Total Impact
From Operations		1.34		
From Construction		1.19		
Total Impact				

#### Labor Income (Wages, Salaries & Benefits) Impact

	Direct Labor Income	Multiplier	Secondary Impact	Total Impact	Sales Tax Ratio	Retail Sales Impact
From Operations		1.23			25%	
From Construction		1.25			25%	
Total Impact						

New original data provided for the critical access hospital.

These cells are calculated values.

The employment per million dollars of construction and the estimated annual construction wages, salaries, and benefits per employee are derived from IMPLAN data. If the critical access hospital obtains multipliers specific to their medical service area, then these two numbers can also be obtained from the IMPLAN data specific to their medical service area.

The multipliers provided in these cells are the averages from the research study. The critical access hospital should consider and is encouraged to utilize IMPLAN multipliers specific to their medical service area.

The local retail sales tax capture ratio can be derived utilizing total personal income for the county medical service area and the total taxable retail sales, if available from the state tax agency. (Divide the total taxable retail sales by the total personal income.)

<sup>1</sup> This spreadsheet is available in Excel with formulas from the website: [www.ruralhealthworks.org](http://www.ruralhealthworks.org). Go to Economic Impact studies, Critical Access Hospitals. Additional information is provided on how to present the economic impact of your critical access hospital to your local community.



# The Economic Impact of a Critical Access Hospital on the Rural Economy

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