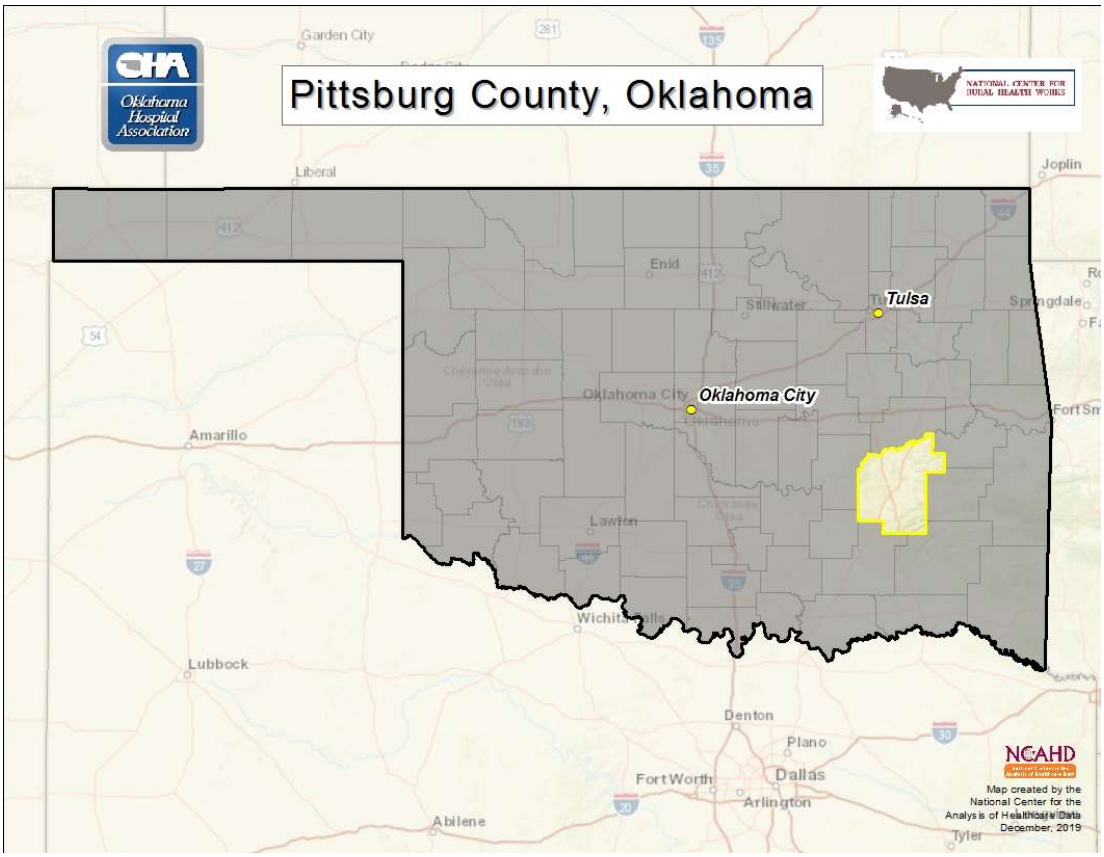
ECONOMIC IMPACT OF THE PROPOSED MEDICAID EXPANSION ON PITTSBURG COUNTY IN 2020



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Economic Impact upon Pittsburg County

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EXECUTIVE SUMMARY

The Oklahoma Hospital Association (OHA) asked Leavitt Partners (LP) to project the revenue Oklahoma hospitals might receive under Medicaid expansion. The Leavitt Medicaid expansion model attributed patients and Medicaid payments for those patients to Oklahoma short-term (general and specialty) and critical access hospitals over the first five years of expansion. Once Medicaid payments to hospitals were calculated, they adjusted those for crowd-out effects using parameters found in prior research studies (See **Appendix A** for more information.)

The OHA had previously contracted with the National Center for Rural Health Works (NCRHW) in March, 2015 to conduct an economic impact study of projected revenues, jobs and labor income that might be generated over an eight-year period (2016-2023). Data generated by Leavitt Partners was used in this study too, except that crowd-out had not been factored for this study as it has for the current study. (For more information on the first study, please contact Mr. Rick Snyder, OHA).

OHA contacted NCRHW requesting us to conduct research using the current Leavitt data (2020 – 2024) to determine both the statewide impact and county economic impact of the projected revenue Leavitt's Medicaid expansion model estimated. NCRHW's research integrated this data within our models to calculate both the direct and secondary impact of the revenue upon the county, and then determine the potential jobs and subsequent labor income that would be generated by the increased revenue. Leavitt data estimated an additional $1,353,056,153 in revenue would be generated statewide, that we determined would cause an additional $1,122,606,462 in spending statewide for a total of almost $2.48 billion dollars ($2,475,662,615) from direct and secondary spending. This increased revenue would generate over seventeen thousand jobs (17,415) that would contribute an additional $1,061,924,289 in labor income statewide. With 70 of the 120 short-term, critical access or children's' hospitals located in rural, the impact of the expansion would positively impact both urban and rural areas in Oklahoma.

In Pittsburg County, we determined Medicaid Expansion would cause an additional $16,133,783 in spending countywide for a total of $23.9 million from direct and secondary spending. This increased revenue would generate 241.4 jobs that would contribute an additional $11,719,011 in labor income countywide. The impact includes the impact of McAlester Regional Health Center, which is a short term acute care facility with 576 employees.

METHODOLOGY

Our research assumed that with the expansion of Medicaid, the money previously spent our healthcare by the consumer (including business), would be subsequently spent within the county or state. Therefore, our analysis was of the total revenue projected by Leavitt for the proposed Medicaid expansion which we aggregated the county level. We generated a model that measured the potential impact upon nine health sectors that are measured through our economic data source, IMPLAN (See **Appendix B** for more information). These sectors include the following types of economic activity attributed to healthcare within all economies:

- Physician Offices
- Dentist Offices
- Offices of other Health practitioners

- Outpatient care centers
- Medical and diagnostic labs
- Home health care services
- Other ambulatory care services
- Hospitals
- Pharmacies

The direct economic impact of the revenue generated from Medicaid expansion includes increases to patient enrollment for any of the services listed above and operational expenses, such as wages, salaries, and benefits, medical supplies, and other hospital operational expenses. (**Note**: This analysis does not include any impact from construction for capital project that may occur from this expansion.) These activities create a "Ripple Effect" in the economy by increasing demand in other sectors due to employee's spending money in the local and state economy and through the continual purchase of supplies and services of the hospital, which is also known as the secondary economic impact.

We calculate the secondary impact utilizing an input-output models designed to analysis the transactions among the industries within the county including the direct, indirect and induced interrelated circular spending behaviors. For example, an increase in the demand for health services requires more equipment, more labor, and more supplies, which, in turn, requires more labor to produce the supplies, etc. By simultaneously accounting for structural interaction between sectors and industries, input-output analysis gives expression to the general economic equilibrium system. (For more information, see **Appendix B**.)

Our economic model determine how many jobs are generated based upon the health sectors' county averages to estimate the number of jobs that are expected from the revenue as well as the jobs to create through secondary spending.

Labor income is an amount estimated to be created though the additional jobs within each of the counties from the proposed Medicaid expansion. The IMPLAN model tracks the spending of labor income based upon the previously mentioned sectors. The spending patterns of those individuals employed in the above mentioned nine sectors within the county become the labor sector multiplier that is applied to the labor income estimated by IMPLAN to be generated for the county through the proposed Medicaid expansion.

RESULTS FOR THE STATE AND PITTSBURG COUNTY

For Pittsburg County, the estimated revenue from Medicaid expansion ($16,133,783) will generate an additional $7,765,265 in secondary revenue for a total revenue of $23.9 million dollars (**Table 1**). The multiplier of 1.48 means that for every $1 spent countywide, an additional $0.48 is generated in secondary spending. The $16,133,783 of additional spending generated 180.7 jobs in the health sector. The employment multiplier of 1.34 results in an additional 60.7 jobs that are primarily non-health sector jobs, for a total of 241.4 jobs in total from the expansion revenue. Labor income is an averaged health-sector wage that is multiplied times the employment (180.7), $9,621,051. The income multiplier of 1.22 results in a total of $11,719,011 of income generated throughout the county due to the proposed Medicaid expansion.

The statewide estimated revenue from Medicaid expansion ($1,353,056,153) will generate an additional $1,122,606,462 in secondary revenue for a total revenue of nearly $2.48 billion dollars (**Table 2**). The multiplier of 1.83 means that for every $1 spent statewide, an additional $0.83 is generated in secondary spending. The over $1.35 billion dollars of additional spending generated 9,779.1 jobs in all sectors within the state. The employment multiplier of 1.78 results in an additional 7,645.8 jobs for a total of 17,414.9 jobs in total from the expansion revenue. Labor income is an averaged health-sector wage that is multiplied times the employment (9,779.1), $716,651,815. The income multiplier of 1.48 results in a total of $1,061,924,289 of income generated throughout the state due to the proposed Medicaid expansion.

Table 1 - Economic Impact of the Proposed Medicaid Expansion on Pittsburg County

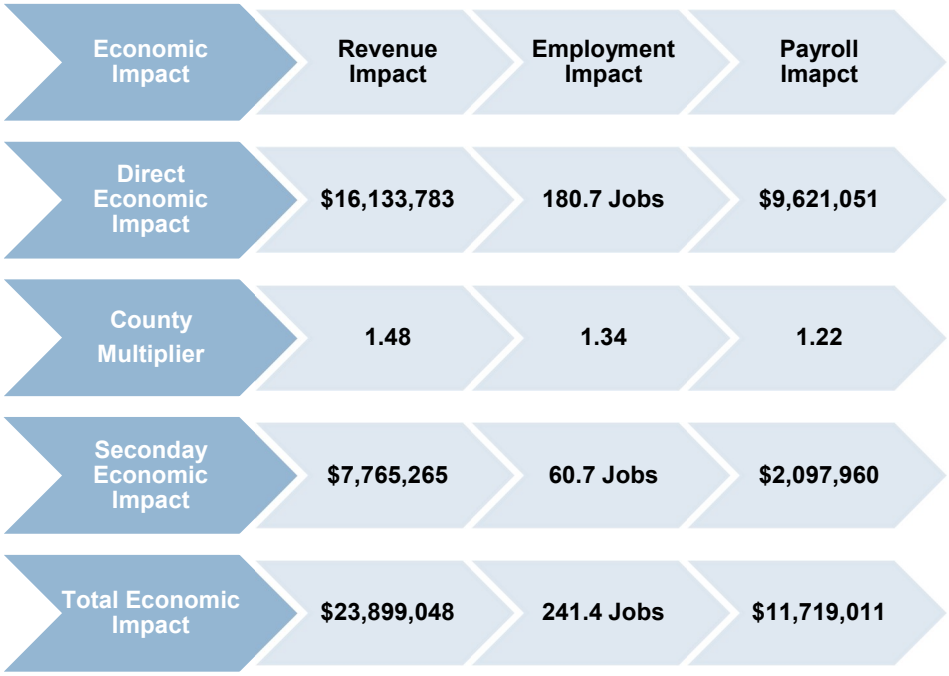

Table 2

2020 Estimated Statewide Economic Impact from Medicaid Expansion

	Direct Revenue	Statewide Multiplier	Secondary Revenue	Total Revenue
Revenues	$1,353,056,153	1.83	$1,122,606,462	$2,475,662,615
Employment	9,779.1	1.78	7,635.8	17,414.9
Labor Income	$716,651,815	1.48	$345,272,474	$1,061,924,289

Data Source: Research results conducted by NCRHW using IMPLAN and Leavitt Medicaid Expansion Revenue Analysis

RESEARCHERS

Gerald A. Doeksen – For this project, Dr. Doeksen worked as a consultant for the NCRHW. His background is as follows: After receiving his Ph.D. degree from Oklahoma State University in 1972, Dr. Doeksen began his career as an Extension Economist. Dr. Doeksen's major rural/community development related achievements can be divided into two time periods. These include his early work with input-output theory and applications and his pioneering efforts with community reserve budgets. His later years involved creating **The National Center for Rural Health Works.** Dr. Doeksen's early work with input-output analyses (tool used to estimate economics impact) is referenced in textbooks such as Harry W. Richardson's book titled "Input-Output and Regional Economics". He has given groundbreaking work related to aggregation and size of multiplers, Dr. Doeksen's Master's thesis and Ph.D dissertation both utilized input-output analyses.

Ann K. Peton - For the past 3 years, Ms. Ann K. Peton has been the Director of the **National Center for Rural Health Works**, having transitioned the research center and federal grant from Oklahoma State University in August 2016. Additionally, she has been the Director of the **National Center for the Analysis of Healthcare Data (NCAHD)** for the last 13 years. She established the NCAHD in partnership with Dixie Tooke-Rawlins, DO, President of the Edward Via College of Osteopathic Medicine. The mission of NCAHD is to provide data mapping and analysis support of your advocacy, medical education planning/expansion, research, and other healthcare workforce planning using both your data and ours which includes the nation's most complete collection of physician and non-physician data, demographic, socio-economic, and political data. Both centers are located in Blacksburg, Virginia.

In August of 2016, the FORHP agreed to the transition of the National Center for Rural Health Works (NCRHW) to VCOM with Ann as the Director in order to continue the important economic impact analysis research this center has created for the nation over the last 26 years. NCRHW's work focuses in three areas of support: 1) creation/updating of economic impact tools, surveys and needs assessment for public usage, 2) education of rural stakeholders of these products through workshops, webinars and the website, and 3) technical support to the various stakeholders as they use the products and federal partners statistical requests.

With over 30 years' experience working with local, state and national entities and individuals regarding geographic information systems (GIS) applications and usage, Ms. Peton established NCAHD in order to create and provide the most complete and consistent set of healthcare workforce data and mapping tools in the nation for physicians and seventeen other non-physician healthcare providers. Successful partnerships with AMA, AOA, HRSA and many other healthcare centers, national provider organizations and other stakeholders has affirmed NCAHD as a leader in support healthcare research, hospital network planning, grant writing and advocacy concerning healthcare workforce policy issues.

Spencer A. Jones – Intern with 2 years' experience in working for NCRHW conducting economic impact analysis and other research. Spencer graduated December 2019 with a degree in Statistics from Virginia Tech. He recently completed an Internship (summer, 2019) with the National Association of Rural Health Clinics (NARHC) in Washington, D.C.

LEAVITT PARTNERS

Appendix A

6/14/2019

OHA Medicaid Expansion Revenue Analysis

The Oklahoma Hospital Association (OHA) asked Leavitt Partners (LP) to project the revenue Oklahoma hospitals might receive under Medicaid expansion. This document describes the methodology used in this analysis. Using the results of our Medicaid expansion model, zip code demographics, and hospital service area information, we attributed patients and Medicaid payments for those patients to Oklahoma short-term (general and specialty) and critical access hospitals over the first five years of expansion.

The expansion model used a microsimulation and experience from other states to project the number of new enrollees in the expansion program by demographic profile. We used the joint distribution of gender, Native American racial identification, and disability status to apportion these projected new enrollees to zip codes. These three factors were chosen because they were present in both our expansion simulation results and in the zip code data available to us through Torch Insight. The zip code data in Torch is estimated at the zip code level based on American Community Survey (ACS) 5-year estimates.

Once expansion lives were apportioned to zip codes, we used the Medicare hospital service area file (HSAF) to apportion lives within zip codes to hospitals. The HSAF allows for calculation of each hospital's share of discharges of patients living in that zip code. Our use of this information assumes that Medicaid market shares within a zip code will mirror those for Medicare in the same zip code. We explored the possibility of adjusting the zip-level market shares using a regression model but found in rough preliminary analysis that the results did not change significantly with that methodology. We opted for the simpler method, with the associated assumptions.

We calculate Medicaid payments to hospitals (inpatient and outpatient) as a percentage of total non-administrative Medicaid payments for the patients in question. We use spending figures from the 2017 OHCA annual report to calculate total adult spending, removing spending for adults in SoonerPlan, supplemental plans, HCBS, and Insure Oklahoma to better match the expansion program. See the results file for calculations and more explanation. We estimate inpatient spending to be about 17.1% of total Medicaid expansion spending, with outpatient representing another 8.7%. Applying these percentages to the apportioned patients' non-administrative Medicaid payments yielded total Medicaid payments to the hospitals for expansion patients.

Once Medicaid payments to hospitals were calculated, we adjusted those for crowd-out effects using parameters found in prior research studies. Medicaid revenue relative to previously insured and previously uninsured patients in hospital inpatient and outpatient departments were obtained from a 2016 study by Vanderbilt and University of Michigan researchers. An estimate of the crowd-out of private insurance for Oklahoma (about 18.2%) was found in a 2010 study by Ohio State researchers. Expansion enrollees are assumed to have been previously uninsured if not previously commercially insured. All prior revenue from these patients (whether from private insurance or self-pay) is accounted for as crowd-out.

Should OHA wish to explore alternative scenarios, our results file is set up as a calculator, allowing for changes to the various parameters. The file also has an "about" sheet with more specifics on the various inputs and outputs.

Appendix B - IMPLAN Software and Data

Model and Data Used to Derive Multipliers

A Review of Input-Output Analysis

Input-output (I/O) (Miernyk, 1965) was designed to analyze the transactions among the industries in an economy. These models are largely based on the work of Wassily Leontief (1936). Detailed I/O analysis captures the indirect and induced interrelated circular behavior of the economy. For example, an increase in the demand for health services requires more equipment, more labor, and more supplies, which, in turn, requires more labor to produce the supplies, etc. By simultaneously accounting for structural interaction between sectors and industries, I/O analysis gives expression to the general economic equilibrium system. The analysis utilizes assumptions based on linear and fixed coefficients and limited substitutions among inputs and outputs. The analysis also assumes that average and marginal I/O coefficients are equal.

Nonetheless, the framework has been widely accepted and used. I/O analysis is useful when carefully executed and interpreted in defining the structure of an area, the interdependencies among industries, and forecasting economic outcomes.

The I/O model coefficients describe the structural interdependence of an economy. From the coefficients, various predictive devices can be computed, which can be useful in analyzing economic changes in a state, an area or a county. Multipliers indicate the relationship between some observed change in the economy and the total change in economic activity created throughout the economy.

- The basis of IMPLAN was developed by the U. S. Forest Service to construct input/output accounts and models. The complexity of this type of modeling had hindered practitioners from constructing models specific to a community requesting an analysis. The University of Minnesota utilized the U.S. Forest Service model to further develop the methodology and expand the data sources to form the model known as IMPLAN. The founders of IMPLAN, Scott Lindall and Doug Olson, joined the University of Minnesota in 1984 and, as an outgrowth of their work with the University of Minnesota, entered into a technology transfer agreement with the University of Minnesota that allowed them to form Minnesota IMPLAN Group, Inc. (MIG).

IMPLAN Software and Data

At first, IMPLAN focused on database development and provided data that could be used in the Forest Service version of the software. In 1995, IMPLAN took on the task of writing a new version of the IMPLAN software from scratch that extended the previous Forest Service version by creating an entirely new modeling system – an extension of input-output accounts and resulting Social Accounting Matrices (SAM) multipliers. Version 2 of the new IMPLAN software became available in May of 1999. The latest development of the software is now available, IMPLAN Version 3 Software System, the new economic impact assessment software system.

With IMPLAN Version 3 software, the packaging of products has changed. Version 3 utilizes 2007 or later data. When data are ordered, the data cost plus shipping are the only costs. Version 3.0 software and the new IMPLAN appliance are included in the cost of the data. There are no additional fees to upgrade to IMPLAN Version 3.0. Data files are licensed to an individual user. Version 2 is no longer compatible with 2008 and later data sets.

Version 3 allows the user to do much more detailed analyses. Users can continue to create detailed economic impact estimates. Version 3.0 takes the analysis further, providing a new method for estimating regional imports and exports is being implemented - a trade model. IMPLAN can construct a model for any state, region, area, county, or zip code area in the United States by using available national, state, county, and zip code level data. Impact analysis can be performed once a regional input/output model is constructed.

IMPLAN Multipliers

Five different sets of multipliers are estimated by IMPLAN, corresponding to five measures of regional economic activity. These are: total industry output, personal income, total income, value added, and employment. Two types of multipliers are generated. Type I multipliers measure the impact in terms of direct and indirect effects. Direct impacts are the changes in the activities of the focus industry or firm, such as the closing of a hospital. The focus business changes its purchases of inputs as a result of the direct impacts. This produces indirect impacts in other business sectors. However, the total impact of a change in the economy consists of direct, indirect, and induced changes. Both the direct and indirect impacts change the flow of dollars to the households. Subsequently, the households alter their consumption accordingly. The effect of the changes in household consumption on businesses in a community is referred to as an induced effect. To measure the total impact, a Type II (or Type SAM) multiplier is used. The Type II multiplier compares direct, indirect, and induced effects with the direct effects generated by a change in final demand (the sum of direct, indirect, and induced divided by direct).