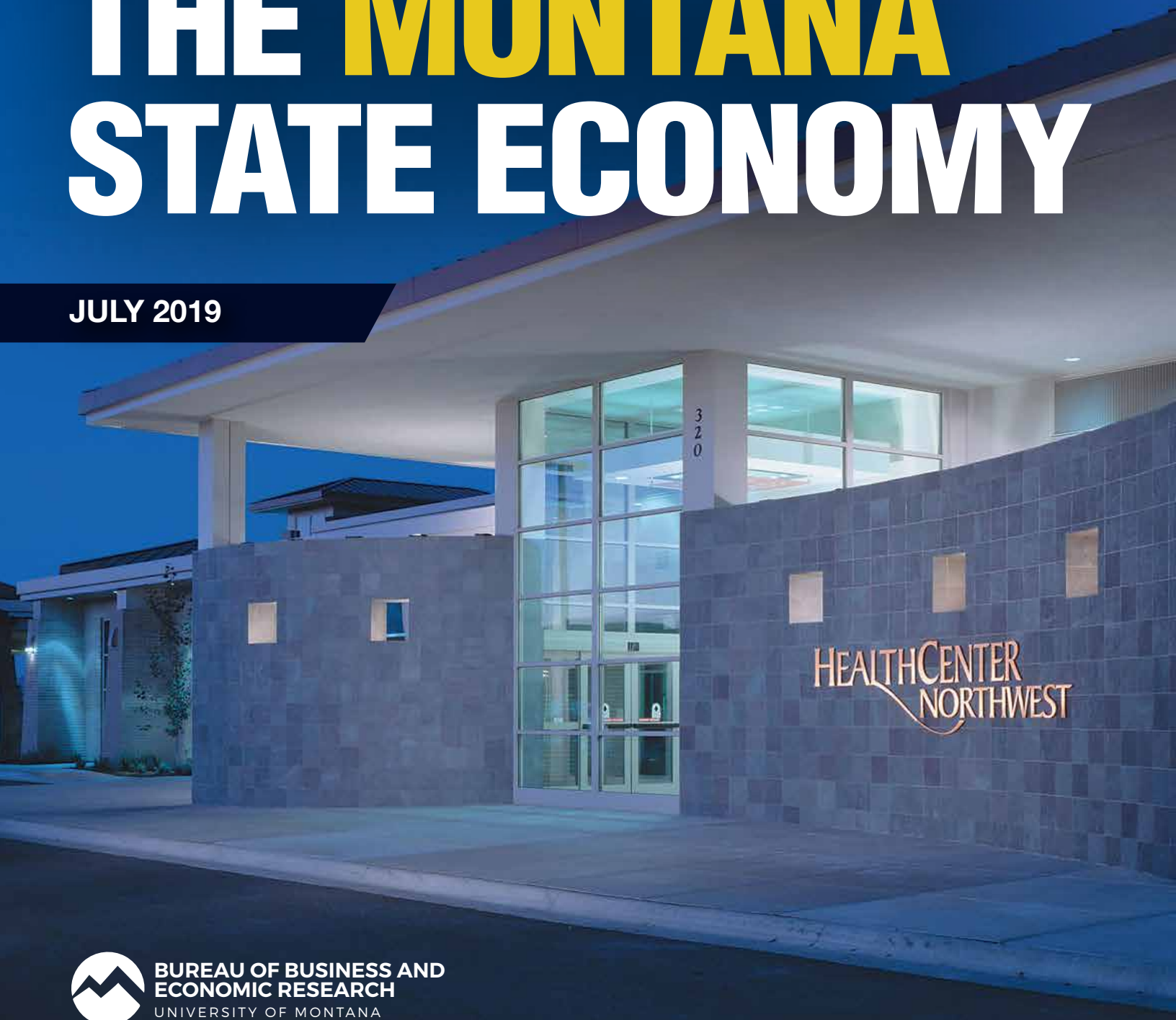


MONTANA'S HOSPITALS AND THE MONTANA STATE ECONOMY

JULY 2019



BUREAU OF BUSINESS AND
ECONOMIC RESEARCH
UNIVERSITY OF MONTANA

Contents

Findings at a Glance 3
Background 4
Research Methodology 5
Montana’s Hospitals and the Montana Economy 6
Montana’s Hospitals and Medicaid 8
Summary 10

Table 1: REMI Results for Montana Hospital Economic Impact 8
Table 2: Montana Hospitals and Medicaid Funds Received 9

Findings at a Glance

- In 2017, Montana's non-governmental hospitals employed over 24,000 people with a payroll of over \$1.5 billion
- Montana's hospitals directly account for almost 7 percent of Montana's total private sector employment, and almost 10 percent of total private sector wages
- The average annual wage for Montana's hospital employees is 150 percent of the average annual wage for all private industry employees
- The higher average annual wage accounts for \$504 million more in income for the Montana economy when compared to the average annual wage for all private sector employees
- Impact analysis indicates that Montana hospitals are responsible for 61,000 private sector jobs economy-wide, and over \$3.1 billion in personal income
- For every hospital job added or lost, an additional 1.2 jobs are created or destroyed economy-wide
- For every dollar in personal income earned or lost by hospital employees, an additional \$0.61 is generated or lost economy-wide
- Montana's hospitals are responsible for almost \$10 billion in total output, \$4.7 billion in Gross Domestic Product, and \$5.9 billion in value added for the Montana economy
- For every Medicaid dollar paid by Montana taxpayers, federal taxpayers match it with an additional \$1.89 in federal funds
- For every dollar of reduced Medicaid spending, the state forgoes \$2.89 in Medicaid funding
- Medicaid funds to Montana hospitals alone account for 12,000 jobs statewide
- For every \$100 million in Medicaid funding received or foregone, 1,366 jobs are added or lost from the Montana economy
- For every \$100 million in Medicaid funding received or foregone, \$69.1 million in personal income is gained or lost from the Montana economy
- Medicaid funds received by Montana hospitals account for \$1.9 billion in output, \$883.4 million in Gross Domestic Product, and \$1.1 billion in personal income

Background

Establishments in the hospital subsector provide inpatient health services, many of which can only be provided using specialized facilities and equipment that form a significant and integral part of the production process. Hospitals provide services that households and businesses consistently rank at the top of the list for relocation. Its importance for economic development is well documented in all economic development literature. Healthy populations are not only more productive but also can direct more dollars to other sectors in the economy, creating jobs and income.

Health care spending is a form of investment in human capital, and as such, depreciates over time and hence requires periodic reinvestment. Health care spending, particularly among the 65+ population, is an important form of this “reinvestment” that injects dollars into the local economies. Montana in particular has a sizable 65+ population when compared to the U.S., 18 percent versus 15.6 percent. Total personal health care per-capita spending for the 65+ population during 2012 was \$18,988, the highest among all age demographic groups.

Health care spending reduces mortality and improves the quality of life for Montana residents, both as patients and to society in general as well. Further, healthier populations demand less private and governmentally provided insurance resources.

Because the delivery of health care is labor intensive, the ripple effects of health care sector spending supports jobs and income generation elsewhere, and plays a significant part in the economic vitality of rural areas. Through its dependence on labor intensive delivery, coupled with above average wages, the ripple effects of economic activity associated with hospitals are significant. As hospital employees spend locally, they contribute to the diversification of the economy, creating jobs, income and increased tax revenues for the entire economy. A better diversified economy is also a better insulated economy from the pitfalls of national recessions.

Community Benefit Programs directly contribute to local economies as well as tax exempt hospitals offer charity care and many other community benefits. Community Benefit Programs by their very nature allow dollars to recirculate within the economy that otherwise would be lost. Additionally, out-of-state inpatients, and their visitors, help contribute to the economic base of the economy by contributing dollars earned from outside the state. Medicare and Medicaid dollars also contribute to the base economy by providing the inflow of tax dollars well beyond the tax obligation of Montana taxpayers. Hospitals also provide substantial agglomeration economies, that is, additional economic activity attributable to residual activities of the hospital sector directly. For example, physicians and other medical providers choose to locate in areas with hospitals, providing additional stimulus the economy.

The demand for health care will only increase over the next several decades. Baby boomers are qualifying for Medicare at a rate of 10,000 per day nationally, one every eight seconds for the next ten years. Montana has more baby boomers as a percent of its total population than is the experience for the U.S. And the variation across Montana counties is noteworthy, Prairie

County has 26 percent of its population Medicare eligible, while Gallatin County has less than 10 percent.

Personal health care spending increases almost three-fold for the 65+ population compared to the working age population. And over 30 percent of spending on health care for the 65+ population is for hospital services.

In a general sense then hospitals by their very nature enhance the attractiveness of the state for business relocation and population growth. Studies consistently document the importance of health care for relocation decisions by business and the retirement age population in particular. And because a significant component of health care spending is “basic,” it is an economic driver for job and income creation by bringing in out-of-state dollars. Hence much of health care spending is above and beyond those dollars simply “churned” within the economy that reduces spending elsewhere.

Research Methodology

The Bureau of Business and Economic Research (BBER) conducted this study using one of the most advanced and well documented economic impact models in the U.S. The REMI model has been used by business, consultants, economic development specialists, and government agencies for almost 40 years to answer the question “How important is a particular sector to the overall health of an economy?” REMI is a 70 sector model calibrated to represent the economic interactions in the Montana economy. As such, it can capture the inter-industry linkages among Montana industries to a high level of detail. Studies using REMI have been published in numerous peer reviewed economic journals, hence, its reputability as an economic modeling tool is assured. The BBER was also able to increase the level of confidence in the model’s outcomes by contrasting its results with that of an earlier study conducted for the Montana Hospital Association in 2013. For the earlier study, the modeling was performed using IMPLAN. IMPLAN is a similar model capturing economic inter-dependencies among industries using a different modeling approach. Similar to REMI, IMPLAN has been around since the mid 1970’s and has been used by academics, government entities, economic developers, corporations, not-for-profits and consultants. IMPLAN too has been well established in peer-reviewed research. Hence, the BBER is able to approach the question of the importance of hospitals to the Montana economy using two entirely different approaches, albeit the former is a six-year old study.

Data for the REMI model was secured via the Montana Hospital Association and the 2017 American Hospital Association Annual Survey. Data was obtained for all but two of Montana’s non-governmental hospitals.

Economic impact may be defined as the net change in the economy resulting from an increase or decrease in hospital spending. New spending can generate a larger impact than the new spending stream alone since successive rounds of spending occur within the economy when new money is injected. These multiplier effects can be assessed by modeling the direct spending of hospitals from business within the state economy, then comparing this spending

stream to additional indirect spending by businesses from businesses as they accommodate the needs of hospitals. For example, a medical supply firm may directly benefit from hospital spending, and as a result, require additional inputs obtained by buying from other state located businesses. The more integrated local businesses become, the greater the indirect spending stream. “Buy local” campaigns in particular will increase the proportion of dollars that circulate locally. Further, an induced impact is realized as well. In the case of hospitals, the induced impact can be substantial as household incomes increase as the result of hospital employees spending most of their paychecks within the state. This in particular can be substantial since the average wages of the hospital sector are well above the average wage of all private sector jobs in Montana.

Montana’s Hospitals and the Montana Economy

In 2017, Montana’s non-government hospitals employed 24,526 employees, with a payroll of \$1.5 billion. This accounts directly for 6.5 percent of Montana’s total private employment, and 9.8 percent of Montana’s total private wage bill. When one includes other health care entities choosing to locate near Montana’s hospitals, the agglomeration economy, private employment jumps to 18 percent of total private employment and 21 percent of Montana’s total private wages paid for 2017. When one compares the average wages paid in the hospital sector to the average wage paid across all private sector industries in Montana, the hospital sector accounts for an additional \$504.1 million in income generation. The average private sector wage in Montana is \$40,981, for health care in general, \$47,431. And for hospitals in particular, the average annual wage is \$61,444, or 150 percent higher than the average wage for all private sector industries combined. This is the catalyst behind the “induced” impacts discussed earlier, households employed by the hospital sector have incomes beyond other private sector employees and therefore can provide extra stimulus dollars for economic vitality.

While hospitals contribute significantly to all their local economies, particularly in many of Montana’s extremely rural economies the hospital may serve as the backbone industry. Although beyond the modeling possibility of this study, rural Montana economies, defined as those with fewer than 3,000 private sector employees, have hospitals in most of these counties that account for almost 10 percent of the private employment base. Eighty-two percent of Montana’s counties with fewer than 3,000 private sector employees have a hospital, and hence its payroll is an important economic driver.

Using the REMI model and data supplied by the MHA, Montana’s hospitals support almost 61,000 economy-wide jobs in Montana, or 16 percent of Montana’s private employment base. Typically economic impacts are presented in a multiplier fashion for ease of interpretation. Employment multipliers describe the total jobs generated as a result of 1 job in the target industry, in this case, hospitals. Again, using REMI and data supplied through the Annual Survey of Hospitals, Montana’s private hospitals generate an employment multiplier of 2.15. An employment multiplier of 2.15 means that every direct hospital job created 2.15 jobs in the total economy emerge: the original job and 1.15 additional jobs. For ease of interpretation, for every hospital employee hired, an additional 1.2 private sector jobs are created in the economy. In the 2013 BBER study using IMPLAN and hospital data for 2012, an employment

multiplier of 1.96 resulted. The slightly higher multiplier in this 2017 study may be attributed to increased inter-industry linkages and higher average incomes relative to the “all industry” private sector wage level. Differences in labor productivity could also be partially responsible. Nevertheless, the closeness of these two employment multipliers using timeframes 6 years apart and two different modeling approaches suggests that the employment multipliers are well within a high level of confidence. Of course, multipliers also work in reverse. For every hospital employee who loses their job, an additional job within the economy will be lost as well.

A second measure of economic contribution is typically labor income, or in the case of the REMI model, personal income. Again using hospital survey data for the year 2017, a personal income multiplier of 1.61 is generated. A personal income multiplier of 1.61 suggests that for every dollar of direct personal income for hospital employed households, an additional \$0.61 of personal income is generated economy-wide as businesses purchase from each other and households spend their paychecks. The IMPLAN model used in the 2013 study generated a labor income multiplier of 1.47, that is, for every dollar of labor income an additional \$0.47 in labor income is created economy-wide. The labor income multiplier when contrasted with the personal income multiplier is lower since labor income is primarily only wage income, whereas personal income accounts for additional income sources such as dividends, interest, rental, and royalty income. And as is the case with employment, inter-industry relationships have changed over the last six years resulting in different indirect and induced impacts. But again, these multipliers are well within the expected ranges.

Activity associated with Montana’s hospitals also accounts for \$4.7 billion in Montana’s Gross Domestic Product, and \$5.9 billion in value added. Value added represents employee compensation, proprietary income, interest, rents, royalties, dividends, profits and indirect business taxes. Value added is the difference between a product’s sales price and the cost of intermediate inputs used to produce it. Value added recognizes that hospitals purchase goods and services from other businesses to deliver healthcare. The difference between output and value added is that output includes the value of intermediate goods and services used by hospitals to deliver healthcare, whereas value added does not. Many prefer value added as the economic measure because, at the economy-wide scale, output measures multiply count the value of inputs.

The Gross Domestic Product measure of economic impact, a measure of value added, is used to track the size of the state economy because it is a non-duplicative aggregation of production activity across all industries in the state. Table 1 below summarizes the results of the REMI modeling run using 2017 data.

Table 1: REMI Results for Montana Hospital Economic Impact

IMPACT PARAMETER	DIRECT	ECONOMY-WIDE	MULTIPLIER
EMPLOYMENT	28,275	60,877	2.15
PERSONAL INCOME	\$2.0 billion	3.1 billion	1.61
GROSS DOMESTIC PRODUCT (2019 \$)	Na	\$4.7 billion	Na
OUTPUT (2019 \$)	Na	\$10.0 billion	Na
VALUE ADDED (2019 \$)	Na	\$5.9 billion	
FEDERAL TAXES	Na	\$173.1 million	Na
STATE AND LOCAL TAXES	Na	\$153.0 million	Na

Source: BBER, REMI, 2017. Taxes estimated using IMPLAN, adjusted for 2017.

Montana’s Hospitals and Medicaid

Montana’s hospitals received \$1.3 billion in gross Medicaid funds, and \$575.9 million in net Medicaid funds. Medicaid funds received by Montana’s hospitals provide considerable potential gains to the state economy. The addition of federal tax dollars to the state of Montana supports jobs and provides additional stimulus to the state economy that is paid for by taxpayers all across the U.S. In essence, federal Medicaid dollars are similar to income earned from products made in Montana and exported elsewhere. Federal Medicaid dollars are “outside” dollars brought into the state economy to provide health care for the financially indigent. These dollars are “basic” to the Montana economy, and hence are the drivers behind new economic opportunities and growth.

Although Medicaid payments to health care providers are made on behalf of Medicaid enrollees, the direct recipients of these funds are providers, including hospitals, and other health care professionals. Medicaid funding thus impacts directly health care providers, supporting jobs, creating incomes, and the purchases necessary to provide health care to Montana’s financially indigent.

Both state and federal Medicaid spending have a multiplier effect. State Medicaid spending alone yields a multiplier effect as money circulates into the state economy to make purchases and support salaries. However, because of the matching arrangement with the federal government, the economic impact of Medicaid spending is intensified by the infusion of new dollars from the federal government that would otherwise not exist.

A dollar of state Medicaid spending attracts at least one dollar from the federal government. Thus, the total impact multiplier relative to the multiplier for the state dollar alone, is considerably larger. The Federal Medicaid Assistance Percentage (FMAP) ranges from a floor of 50 percent to a high of 74 percent. The 2018 FMAP for Montana is 65.38 percent, for a Medicaid multiplier of 1.89. This means that for every dollar the state of Montana contributes to Medicaid, the federal government will match it with \$1.89 in federal funds. Conversely, should the state reduce its Medicaid spending by \$1.00, it will forgo the \$1.89 match from

federal taxpayers. Hence, the state is actually reducing its total Medicaid spending by \$2.89 to save \$1.00 in state funds.

Additionally, Medicaid reduces the hospital sectors charity care and bad debt. During 2017, charity care and bad debt among Montana’s hospitals totaled more than \$194 million.

Table 2 summarizes the importance of state and federal Medicaid funds to not only Montana’s hospitals, but also to the economy in general. Medicaid spending alone accounts for almost 12,000 Montana jobs economy-wide. In order to better understand the importance of Medicaid to the Montana economy, employment and personal income may be put in terms of jobs and personal income generated per \$100 million dollars of Medicaid spending. For every \$100 million in Medicaid funds received by Montana’s hospitals, 1,366 jobs are supported economy-wide. In 2013, using the IMPLAN model, for every \$100 million in Medicaid funds received by Montana hospitals, 1,185 jobs were supported. The lower number of jobs supported is mainly attributable to the modeling methodology employed. The 2013 study only examined the federal Medicaid funds in terms of their overall economy-wide impact. The 2017 study using the REMI model accounts for both state and federal Medicaid funds. In terms of personal income, Medicaid funds in 2017 generated \$69.1 million in personal income economy-wide for every \$100 million in Medicaid funds received by Montana hospitals. Again, contrasting this result with that of the 2013 study using the IMPLAN model and a different methodology, for every \$100 million in Medicaid spending \$64.6 million in labor income is generated. Again, the slightly lower figure is the result of comparing labor income to personal income, the latter more inclusive of other sources of household income.

Table 2: Montana Hospitals and Medicaid Funds Received

IMPACT PARAMETER	DIRECT	ECONOMY-WIDE	IMPACT PER \$100 MILLION MEDICAID FUNDS
EMPLOYMENT	Na	11,555	1,366
PERSONAL INCOME (2019 \$)	Na	\$584.3 million	\$69.1 million
GROSS DOMESTIC PRODUCT (2019 \$)	Na	\$883.4 million	Na
OUTPUT (2019 \$)	Na	\$1,883.8 million	Na
VALUE ADDED (2019 \$)	Na	\$1,101.3 million	Na
STATE AND LOCAL TAXES	Na	\$15.6 million	\$7.2 million

Source: BBER, REMI, 2017. Taxes estimated using IMPLAN, adjusted for 2017.

Summary

The Affordable Care Act of 2009 had provisions for states to expand Medicaid coverage within their financially indigent populations. The expansion extended Medicaid eligibility to 138 percent of the year's federal poverty level. States took different approaches to expanding Medicaid, while some initially refused the expansion. By now, the literature is becoming richer in terms of the Medicaid expansions under the ACA. Although no two states are identical in their economic composition nor in their approach to Medicaid, hundreds of studies now exist at the state level on the Medicaid expansion in terms of several measurement parameters. (See, for instance, "The Effects of Medicaid Expansion under the ACA: Updated Findings from a Literature Review," Larissa Antonisse, Rachel Garfield, Robin Rudowitz, and Samantha Artiga, March 28, 2018). Over 202 studies are summarized with respect to the ACA Medicaid expansions in terms of coverage, access to care, utilization of health care services, affordability, health outcomes, and economic measures including uncompensated care, employment and the labor market in general. Although this literature review is well outside the scope of this report, a few findings are worth mentioning. Many studies now show a correlation between the Medicaid expansion and improved health outcomes. Further, research shows there is little or no significant increases in state spending from state funds as a result of the expansion through 2015. Studies also show a reduction in uncompensated care costs for hospitals and clinics as well as positive, or at least neutral, effects on employment. Studies that explored the potential for Medicaid to crowd out private insurance markets have found mixed results. However, of the studies reviewed, most showed no crowd out of the private insurance market and only some showing slight declines in private coverage in states expanding Medicaid.

Studies also show declines in uninsured rates visiting the ED department of hospitals, and in one state study, no significant relationship between Medicaid expansion and changes in total ED volume was found. The Medicaid expansion was also correlated with declines in hospital length-of-stay for Medicaid patients.

National, multi-state, and single state studies show that states expanding Medicaid under the ACA have realized budget savings, revenue gains, and overall economic growth. Numerous studies demonstrate that the Medicaid expansion resulted in state savings by offsetting costs in other areas, including state costs related to behavioral health services, crime, and Supplemental Security Income (SSI) program costs. A Montana study shows that as Medicaid's role in financing substance use disorder (SUD) services has grown under the ACA, federal Medicaid dollars replaced federal block grant and state dollars previously used to fund uninsured Montanans with SUD.

Perhaps most noteworthy for this study, however, is the literature on the Medicaid expansion with respect to hospital based care. Research shows that Medicaid expansions result in reductions in uninsured hospital visits and uncompensated care costs. One study suggests that the Medicaid expansion cut every dollar that a hospital in an expansion state spent on uncompensated care by 41 cents between 2013 and 2015, resulting in a nation-wide savings of \$6.2 billion. Important for Montana, a study published in 2018 found that the Medicaid

expansion is associated with improved hospital financial performance and significant reductions in the probability of hospital closures, especially in rural areas. The Medicaid expansion also has improved hospital operating margins, and these effects on margins were strongest for small hospitals, for profit and non-federal government operated hospitals.

In this study, hospitals contribute to over 60,000 economy-wide jobs in the state, generating over \$3.1 billion in personal income. These employment and personal income multipliers suggest that hospitals in Montana alone account for an additional 1.2 jobs for every hospital job created. With respect to personal income, for every dollar of personal income received by hospital employed households, an additional \$0.61 is generated economy-wide. Hospitals are responsible for almost \$10 billion in output, \$4.7 billion in Gross Domestic Product, and \$5.9 billion in value added. Medicaid dollars, as but one payer into the hospital system, accounts for over 11,000 jobs economy-wide generating \$584.3 million in personal income. Or perhaps more intuitively, for every \$100 million received in Medicaid funding, 1,366 jobs are supported with a total economy-wide personal income of \$69.1 million for every \$100 million in Medicaid funding.

The health care sector, and hospitals in particular, account for a substantial portion of a state's economic vitality. By being part of the basic industries in Montana, it accounts for new economic growth opportunities for Montanans. Hospitals, and health care in general, are also important for economic development in terms of business recruitment and retention. And for households, the availability of health care is paramount in their location decisions. Health care is a form of reinvestment spending that helps support and generate new jobs, labor income, and provides tax revenues for government. Many challenges confront the hospital sector today with respect to payments from both government and private sector sources. This study frames the hospital sectors importance to the economy in terms of new jobs and income, or in the case of declining funding sources, the contractions possible and the resultant loss of jobs and income economy-wide.