**Expanding Medicaid in Missouri:**

**A Benefit-Cost Analysis**

Kate Curoe and Bill Liu

Dr. Derek Brown

May 3, 2019

**Executive summary**

The Patient Protection and Affordable Care Act (ACA) was a landmark bill that reformed the United States’ healthcare system.1 One of the most impactful portions of the bill expanded Medicaid eligibility to 138% of the Federal Poverty Line (FPL).1 Missouri is one of the few states that still has not expanded Medicaid.2 To examine what the possible benefits and costs would be and to determine if expanding Medicaid would be the smart choice for Missouri, a benefit-cost analysis was run. This analysis will expand on previous studies and literature that analyzed the impacts of expanding Medicaid in expansion states3 and that projected the economic impacts of expansion in Missouri through a cost-sharing analysis.4,5 Following Boardman’s 10 steps for a benefit-cost analysis,6(p5) we work through the methods, assumptions and analysis of the benefits and costs of expanding Medicaid in Missouri.

The analysis examined the impacts in the Medicaid population, taxpayer population, and society (Missouri) from 2020-2024. Insurance coverage, economic, healthcare, and health impacts were all accounted for and monetized. Over the 5 years, we project Medicaid expansion in Missouri will result in a net benefit of over $28.26 billion. Using a sensitivity analysis, the worst-case scenario would result in a net benefit of $27.44 billion, and the best-case scenario would result in a net benefit of $29.43 billion. Because the benefits greatly outweigh the costs in the initial five years after implementation, we recommend that Missouri expands Medicaid to increase eligibility to 138% of the FPL.

**Introduction**

On March 23, 2010, President Barack Obama signed into law the Patient Protection and Affordable Care Act (ACA).1 This enormous piece of legislation redefined the healthcare system in many ways. One such way was through the mandatory expansion of Medicaid eligibility to 138% of the Federal Poverty Line (FPL).1 After a Supreme Court ruling, the expansion of Medicaid became optional for states.1 As of 2019, fourteen states have chosen not to expand Medicaid; Missouri is one of them.2

**Technical report: Boardman’s 10 Steps**

**Step 1: Explain the purpose of the BCA**

Because 37 states (including Washington, DC) have already expanded Medicaid, economists, researchers, and policymakers have the luxury of looking to the outcomes of those states to determine what the impacts will be when expanding Medicaid.2 It is important to determine both the benefits and costs and to monetize them in order to make the most evidence-based decision on expanding Medicaid in Missouri. To do this, a benefit-cost analysis (BCA) needs to be performed. So far, no BCA has been completed to analyze the effects of expanding Medicaid in Missouri. However, there has been a cost-sharing analysis by the Center for Health Economics and Policy at the Institute of Public Health (IPH) at Washington University in St. Louis4 and an analysis of the economic impacts by the Department of Health Management and Informatics at the University of Missouri School of Medicine (Mizzou).5 While these both provide informative results, they do not include the benefits associated with expanding Medicaid in Missouri in their analyses. This BCA will be able to provide Missouri legislators with the most comprehensive analysis about the impacts of expanding Medicaid.

**Step 2: Specify alternative projects**

Since the implementation of the ACA in 2013,1 state legislators have overwhelmingly opposed the expansion of Medicaid in Missouri.7 In 2018, Todd Richardson, the newly appointed Director of Medicaid for Missouri, said, “My focus is not going to be on expanding Medicaid eligibility.”7 Because there seems to be no other Medicaid reform being seriously considered by state legislators, the alternative project to the expansion of Medicaid for this analysis is the status quo of not expanding Medicaid.

**Step 3: Decide whose benefits and costs count**

For this analysis, the three populations that will be examined are the Medicaid population, the taxpayers who are not part of the Medicaid population, and society as a whole which is Missouri. These three populations fully encompass the individuals that will be impacted by Medicaid expansion, while also acknowledging the difference in cost and benefits depending on whether the individual is a part of the Medicaid population.

**Assumptions**

This study examines the impact of Medicaid expansion through several different lens and sources. In an effort to be as comprehensive as possible, it takes into account data from various sources, projection models, past literature, and current perspectives. Several economic theories are cross-referenced for approximation legitimacy. Inherently, systematic assumptions made behind the calculation of such numbers cannot be overlooked in our analysis. The authors tries their best to achieve an objective analysis, and therefore highlight key assumptions below.

The total population of Missouri aged 0-64 in 2020 is estimated to be 5,279,446. This number was determined by applying Missouri’s population growth rate of 0.66%3 to the population aged 0-64 in 2017.8

Regarding factors that are market-influenced, we assume a no crowd-out effect modification to our calculations regarding insurance premium fluctuations and insurance savings. However, the data taken from the IPH study already took into account a 10% crowd-out rate to determine the total population of adults who will newly be eligible under Medicaid expansion.4 Because the mechanism is unclear, we were unable to back-trace the calculation.

Other notable assumptions include a parallel projection for rate of unemployment in Missouri compared to the rate of population growth. The rate is used to negate effects of population growth on the number of individual unemployed.9,10 A stand-alone impact factor is considered for the impact of Medicaid expansion on the job market.

There are also several assumptions highlighted in the Mizzou analysis that we adjusted, but cannot fully account for. Part of Mizzou’s calculation on the impacts from new jobs used Workforce Investment Areas (WIA) aggregated from county level data.11 Separate and individual calculations were adjusted to WIA impact index before summing to a state-level number. Since we do not have access to this data, the process is not replicated; only the end numbers are used. Mizzou’s analysis also used household multiplier instead of government multiplier in their impact model in hopes of adjusting for Missouri population.5 This is noted but again assumed to be true in our benefit-cost analysis. Lastly, for this analysis, the value of a statistical life is determined to be $11.00 million dollars.12

**Step 4: Identify the impact categories, catalogue them, and select metrics**

This BCA examines the impacts from Medicaid expansion in Missouri over a 5-year period after initial implementation in 2020. The year 2020 is chosen as the starting year because beginning in 2020, the federal government will finance 90% of the total costs of Medicaid for the expansion population.1 This rate will stay constant for subsequent years.1 We chose to analyze the impacts in a 5-year period because we wanted to focus on the short-term impacts since that may be more valuable to policymakers.

The first impact category is the impact on insurance coverage. First, there will be an increase in the number of eligible individuals that will enroll in Medicaid.13 This impact will be seen in the primary market, and it will have no effect on the Medicaid population but will have a cost associated with it for taxpayers. Therefore, this is a negative impact for society. The estimated number of newly eligible adults and children through the expansion of Medicaid is 271,500 in 2020, as determined by the IPH study.4 This number was calculated by applying the average enrollment rate seen in expansion states of 73% to the number of people who would become eligible after expansion in Missouri.4 A similar impact is that a portion of the disabled population in Missouri that never becomes dually eligible for both Medicaid and Medicare will become part of the expansion population.4 These individuals would be transferred out of the typical Medicaid population and become part of the expansion population. This impact would not affect the Medicaid population, but would be a benefit for taxpayers because Missouri will only have to pay for 10% of this population’s costs, rather than paying for the full cost at status quo. Overall, this impact will be positive for society. It is also a primary market impact. Using IPH’s estimation that 4.9% of SSI population will join the expansion population and by predicting the SSI population for 2020-2024 by using Missouri’s population growth rate of 0.66%4, we predict that about 4,856 individuals in the SSI population will become a part of the expansion population.

The next category of impacts is the economic impacts. The expansion of Medicaid in Missouri will create jobs.3 This is a part of the primary market because there is intentionality behind expanding Medicaid to boost the economy and the job market. The creation of jobs is a positive impact for each of the population groups. Our estimation about the number of jobs created comes from the year-adjusted numbers predicted in the Mizzou study.5 In 2020, we estimate that there would be 20,537 new jobs created due to Medicaid expansion. This number will taper in the consecutive years to 19,005 due to the sustainability of the jobs.5 Medicaid expansion in Missouri will also lead to an increase in the Gross State Product (GSP).5 The Mizzou analysis calculated the total value added to GSP with Medicaid expansion in 2020 to be $1,363,200,000.5 This number stays relatively constant throughout the years, so we kept it constant in our analyses as well. The last reason Medicaid expansion has an impact on the economy is because it increases tax revenue. Mizzou projected that in 2014, the total state and local taxes generated due to expansion would be $119,247,565.5 We chose to keep this constant in our time period because of the complexity of predicting the total state and local tax generated after expansion.

Another category of impacts is the healthcare impacts. Expanding Medicaid in Missouri will decrease the rates of uncompensated care because more people will be insured.14 This primary market effect will have no effect on Medicaid population and will have a positive effect on the taxpayers and society. This impact will be measured by determining Missouri’s uncompensated care costs and multiplying that by the 40% reduction in those costs as seen by expansion states.14 Because uncompensated care decreases, Medicaid expansion will also reduce private insurance premiums.3,5 This is a secondary market impact that has no effect on the Medicaid population and has a positive effect on both taxpayers and society as a whole. Mizzou’s analysis determined that expanding Medicaid would result in $1.19 million in savings in 2014.5 Using the economic growth rate of 4.5%,4 we would adjust that prediction to our timeframe of 2020-2024. Lastly, expanding Medicaid would increase administrative costs.5 This primary market effect will not affect the Medicaid population, but would have a negative impact on taxpayers and society. Our analysis uses the well-documented administrative costs of Medicaid as 5% of the total Medicaid costs.5

Lastly, Medicaid expansion in Missouri will have health impacts. Expanding Medicaid will reduce the number of individuals who are dying because they are uninsured.15 This is a primary market impact that will have positive effects on each of our study populations. In 2010, it was found that 461 individuals died in Missouri prematurely because they were not insured.15 This same number of deaths is used as a constant throughout our 5-year analysis period.

**Step 5: Predict the impacts quantitatively over the life of the project**

As aforementioned, assuming the Missouri expansion happens effectively 2020, we projected a five-year impact assessment in the interest of election terms. The variables are, however, treated differently. Those costs and benefits that respond directly to the economic growth rate are extended by the suggested economic growth rate of 4.5%.4 These include benefits from newly eligible adults, administrative costs (calculated based on newly eligible adults), disabled persons coverage costs, uncompensated care savings, and private insurance premium savings. There are, however, several variables that, by nature, do not respond to market forces, and each are argued to be constant. These include SSI applicant benefits, tax benefits from jobs created, GSP benefits from jobs created, and benefits from decreased mortality. The reasoning behind each is debated and examined before used in our benefit cost analysis. As a note for the next section, when considering the impact of each of the fields below, we produce a range in which sensitivity analysis is conducted. Where possible, the sensitivity range is checked against literature.

There is a special case. Additional income benefits gained from jobs created under the Medicaid expansion is calculated based on two separate numbers. This is a compromise due to the limitation of this analysis in obtaining the exact numbers from the primary source. In the Mizzou article, labor income is already calculated, so we used existing total amounts mentioned in the article to backtrack the calculation to labor income per job, calculated as 977,105,129 divided by 24,008 (Table 2).5 Labor income per job is then multiplied by the 2020-population-adjusted number to yield total benefits due to the additional labor income ($40,699.15 x 20537 jobs). Furthermore, the authors noted that job creation is not static. In the analysis by Missou, an initial 24,008 created jobs are projected, but the authors also noted that only 22,175 positions will be sustained by the end of their seven year projection.5 Because this intrinsic mechanism and rate of decrease is unknown, these numbers are first adapted to 2020 Missouri population10 (resulting in 20,537 and 19,005, respectively), then depreciated instantly in year 2 for a conservative analysis (Table 4).

Some economists may argue that jobs created in this Medicaid expansion scenario is a transfer within society, and therefore should not be counted at all in terms of benefits. This is not without its reasoning. Even though the job positions are created, those that will fill these positions will likely come from places of employment. Since not all of the positions are a net increase in salary, the loss of production from previous position will balance out the benefits created from hopping into this new position. The market for each existing skilled worker holds constant, and no obvious increase in salary is expected. However, from the societal point of view, the positions created from Medicaid expansion are created from scratch. With the expansion, new positions are created, and the benefits generated from each of those positions will be in addition to the benefits of the old positions if both are filled by a tax-paying employee. We cannot assume that person A leaving the old position results in a complete loss, as that position will also be filled. Therefore, it is reasonable to conclude that, we do not believe the benefits from jobs created is a transfer, and the drop in created jobs cited in the Mizzou paper is a result of the consideration of this market force.

**Step 6: Monetize all impacts**

Costs for expanded coverage for newly eligible adults is calculated by multiplying the suggested federal cost of Medicaid ($425 Per Member Per Month) by 12 months, times the number of 2020-adjusted newly eligible adults (271,500). The number of newly eligible adults is inflated using a Missouri population growth rate of 0.66%10 and a base population statistic of 271,500 eligible adults in 2017 as noted in the IPH paper. This adds up to roughly $1.38 billion dollars as cost for the year 2020. It is worth noting that the $425 dollar value is a post-adjustment number by itself. The IPH paper highlighted their assumption of 90% federal match rate for 2020, but only provided the end result of $425 as cost to the state. This number is assumed to be adjusted for the 10% state coverage cost.4

Administrative costs are monetized by using coverage cost for each respective years. As mentioned above, both Missouri analyses quoted a 5% administrative cost,5 making the projection consistent across studies. In year 2020, approximately $69.23 million dollars are the quoted administrative cost for the $1.38 billion dollar increase in coverage expansion.

To project the costs for increasing Medicaid coverage to disabled persons, we adopted IPH’s assumption of 4.9% annual rate of Supplemental Security Income (SSI) population replacement by expansion enrollment.4 Projecting using the latest Missouri’s SSI beneficiary data for 2017 (97,161),16 we estimated Missouri’s 2020 SSI statistical snapshot of 99,098. Forecasting the cost of extending coverage to this specific subset of the disabled population, about $24.76 million dollars will be added to Table 4 (4.9% times 99,098 people times $425 PMPM times 12 months.) As illustrated in the IPH analysis, this cost will be cumulative over the project assessment timeline, reflected in our analysis as recurring cost.

Through this increase in enrollment, the cost to Missouri goes down as a result. This is projected as benefits to the state because now a portion of the health risks and health costs are shared 90% federally. In the IPH analysis, after adjusting for inflation and size of population, a $55 million dollar savings is proposed.4 Because the associated secondary market for this impact is unclear and not enough enrollment and risk assessment data are found, we took the $55 million dollar annually as constant.

To take account of the income benefits as a result of job creation, the suggested 24,008 number of jobs created is adjusted to 2020 population (20,537 jobs), as well as the number of tapering sustainable jobs (22,175 adjusted to 19,005).5 Multiplying the backtracked labor income per job from Mizzou analysis, about $835.84 million dollars of benefits in terms of income will be generated in 2020.5 Assuming the tapering effect immediately in year 2021, about $773.49 million dollars of benefits in terms of income will be generated in 2021. This number is held constant over the following years of analysis.

Discounting benefits generated from increased tax revenues are more complicated. In the Mizzou paper, detailed highlights by county, region, and by Workforce Investment Areas are used to tally specific tax revenue effets, as well as by the industry and the projected job creation in those industries. This is beyond the capabilities and scope of this benefit cost analysis, and due to data limitations we cannot make the same calculations. The proposed 2014 tax benefit generated is used as a constant number ($119.25 million).5

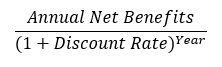
Similar problems was seen with the calculation of Gross State Product (GSP). GSP is calculated based on WIA regions for Missouri, and separately for Missouri state as a whole. These calculations cannot be traced, and assumptions have to be made. For the case of GSP, we noticed that the projected GSP benefits is fairly consistent across the projected years from 2014 to 2020, therefore, we used the 2020 projected number of $1.36 billion dollars and kept it constant over the analysis duration.5

Going along with the reasoning that Medicaid expansion will reduce the burden of uncompensated care, a literature review is conducted to determine the scope of the problem. Research suggest that Missouri suffer a $1.26 billion loss in terms of uncompensated care in 2016.17 This disproportionately affect safety-net hospitals. However, this cannot be translated directed into benefits of the expansion. For one, the loss is not generated exclusively by our newly eligible population. This population is not otherwise fully uninsured. A portion of the uninsured population previously buy plans from the exchange or from private employers. For two, uncompensated care can be generated by other groups, not just the expansion target population of adults 100-138% FPL. It is reasonable to conclude that only a portion of this cost can be remediated by the beneficial effects of expanded coverage. In fact, the Commonwealth Fund found that by comparing expansion and non-expansion states, the benefits effects accounts for 41% of the drop in uncompensated care costs.14 This statistic is used to approximate the beneficial effects of uncompensated care impact category for Missouri (41% times $1.26 billion) (Table 4).

Expanding medicaid will cause the private insurance premium to drop.3,5 The rate differs by population, and could be difficult to project depending on the specific market elasticity, population, and context. Considering similar assumptions of population growth, income distribution, market characteristics, and take up rate in Missouri, the social benefits from a drop in private insurance premium is forecasted to be $1.19 million for 2014. Growing this number using the economic growth rate, it is forecasted as around $1.55 million dollars for 2020.

As one of our last impacts, we debated on including the value of a statistical life (VSL). The concept and quantification of VSL is a highly debatable subject area, however, we think it is important to include it in the benefit cost analysis. This is due to the fact that a number of deaths are attributed to being uninsured in Missouri. Using Boardman’s general estimate for the value of a statistical life, the benefits of expansion in this area is nearly $5.07 billion dollars (461 deaths times $11 million).

**Step 7: Discount benefits and costs to obtain present values**

The benefits and costs listed in the previous sections are all considered, and using a discount rate of 4%, annual present values, net benefits, and a total net present value is calculated (Table 4). The annual net present value is calculated at the end of each year by . At the end of the five years included in this analysis, a overall Net Present Value (NPV) is generated from the values of all years (Table 4). There is a general trend of around $5 billion dollars in positive net benefits. This amounts to $28.26 billion dollars in net present value over the analysis years 2020-2024.

In consideration of the controversial nature of the value of statistical life, a secondary analysis is conducted without VSL. The net present value is still in the positives, $5.69 billion dollars (Table 7). This gives support to our analysis that, even in the absence of accounting for life lost, the efficacy of Medicaid expansion is still viable.

**Step 8: Compute the net present value of each alternative**

Our alternative is the status quo. We chose this because of the current and past political environment for Missouri. Considering past efforts in passing a Medicaid expansion bill, no other viable alternative projects are really on the table. Because of this, the only impact category that would be kept is the cost of covering disabled population that would otherwise be uninsured. Adding the column yields a net cost of approximately $135.48 million dollars to the state. The realistic number for Missouri would be much higher in the negatives, since there would be no federal cost sharing.

**Step 9: Perform sensitivity analysis**

The present value of annual net benefits is calculated with the consideration of a discount rate of 4%. This is in agreement with both existing Missouri Medicaid expansion analyses.4,5 However, literature suggest differing values ranging from 3% to 5%.6 These values are used in the sensitivity analysis. After reviewing literature, a range for Missouri population growth rate is employed: 0.2% to 0.7%.4 Consulting professionals at Brown School at Washington University in St. Louis, it is noted that an economic growth rate of 4.5% is quite optimistic. In fact, confirming this with literature, the lower range is much lower than the higher range: 0.4% to 5%.9 Also, the market fluctuation for private insurance premium decreases is difficult to predict, and a large range is cited: 0.4% to 5%.20 All other impact categories are either held constant, or vary by the means of a related variable.

Considering the many ranges reported, a lower-bound and a higher-bound sensitivity analysis was constructed. The NPV changed, but not by much compared to the magnitude of the NPV ($27.44 billion to $29.43 billion) (Table 5 and Table 6). This give strong support for this project and its ability to make a policy recommendation.

**Discussion**

The results from this benefit cost analysis is promising, and gives good argument in support of expanding Medicaid in Missouri. After an extensive literature review, our impact categories aims to capture the most extensive and tangible impacts of a possible Medicaid expansion program in Missouri. Numbers and rates, although not from original primary field statistics, are cross-referenced to existing and recent literature as well as government websites and statistics. Calculations are backtracked wherever possible to produce the most accurate estimation of the Missouri population. The subsequent sensitivity analysis showed that even with broader ranges for several key rates included, the confidence of our NPV does not vary much, suggesting its accuracy.

Looking at general trends, the majority of the costs of this proposed Medicaid expansion come from state-contributed coverage costs, and, on a magnitude less, coverage costs to disabled persons. The costs for covering disabled persons is immediately offset by benefits received by SSI applicants. The cost is compensated by overwhelming benefits from jobs created by expansion, not through the direct benefits of health. If we consider the possible number of lives saved just by having a basic health insurance, Medicaid expansion will provide insurmountable benefits to Missouri. Furthermore, even if we do not account for the value of statistical life, the benefit cost balance still favors expansion.

This is important to emphasize because the benefit cost analysis can be frame in a different way. If we look at Medicaid expansion as a project to bring jobs to Missouri, the majority of the project expenses is covered by the federal government, while most of the benefits will stay and sustain in the state. We should think of Medicaid expansion as an infrastructure project that bring jobs to Missouri, with additional health benefits. This project would then get the additional benefit of covering the disabled population more effectively. Given current state senators’ positions on this issue, in particular, senator Hawley’s history in fighting for the inclusion of preexisting conditions, this benefit cost analysis could provide key strategic value.

As mentioned in multiple places, literature is heavily referenced not just for accuracy of data, but for reasoning and framework. The two articles that stood out are from IPH and from Mizzou. Both provided invaluable information key to the construction of this benefit cost analysis. However, both are not without its setbacks. IPH focused on cost-effectiveness of a proposed Medicaid expansion project. Not many benefits are identified through the process. Mizzou focused heavily on job creation, calculation of county- and region-specific impacts by projecting gains in various industries. Our benefit cost analysis is really the only up-to-date and comprehensive analysis of the costs and benefits of Medicaid expansion in Missouri.

That being said, there are general limitations with our study. The lack of supporting primary field statistics will reduce the accuracy of our projected numbers. This limits our study from solidifying specific market forces mentioned above that could provide key information in current conversations regarding expansion. Also, the inability to backtrack all calculations in other sources means assumptions and biases are inherent from secondary sources. This is less of a problem if we are to collect our own study data. However, collecting data on the scope of a state Medicaid expansion project could mean problems with feasibility and practicality. We hope that this benefit cost analysis could be a key that opens a conversation on Medicaid expansion, and providing facts for various parties interested.

**Step 10: Policy Recommendation**

Through our benefit cost analysis, we accounted for impacts in the major areas of concern. We found that the initial costs of expanding Medicaid are completely outweighed by the benefits, even in the short terms. This is with the consideration of state-contributed Medicaid coverage in 2020. Our analysis should serve as a strong argument in favor of expanding Medicaid in Missouri. On top of this, there are multiple long term benefits to the health and livelihood of people living in Missouri.

With that in mind, the implementation of this policy could take several forms. Passionate Missouri citizens might consider making Medicaid expansion a ballot initiative, like individuals from fellow conservative states Idaho, Nebraska, and Utah did in 2018.18,19 Hospital groups, insurance providers, and other payers and providers of health can use these analyses as a starting point to look at the benefits in reducing uncompensated care. For advocacy groups and other interested parties, our analysis can serve as strong supporting evidence. For health analysts and policy researchers, this benefit cost analysis act as a call for further examination on more comprehensive considerations of the impacts of expansion.

**Works Cited**

1. Summary of the Affordable Care Act. The Henry J. Kaiser Family Foundation. https://www.kff.org/health-reform/fact-sheet/summary-of-the-affordable-care-act/. Published April 25, 2013. Accessed May 1, 2019.
2. Status of State Action on the Medicaid Expansion Decision. *Henry J Kais Fam Found*. April 2019. https://www.kff.org/health-reform/state-indicator/state-activity-around-expanding-medicaid-under-the-affordable-care-act/. Accessed April 11, 2019.
3. Antonisse L, Garfield R, Rudowitz R, Artiga S. *The Effects of Medicaid Expansion under the ACA: Updated Findings from a Literature Review*. Henry J Kaiser Family Foundation; 2018. https://www.kff.org/medicaid/issue-brief/the-effects-of-medicaid-expansion-under-the-aca-updated-findings-from-a-literature-review-march-2018/. Accessed May 1, 2019.
4. Center for Health Economics and Policy. *Analysis of the Fiscal Impact of Medicaid Expansion in Missouri*. Institute for Public Health at Washington University in St. Louis; 2019:12. https://publichealth.wustl.edu/wp-content/uploads/2019/02/Analysis-of-the-Fiscal-Impact-of-Medicaid-Expansion-in-Missouri-IPH.pdf.
5. Department of Health Management and Informatics, Dobson DaVanzo & Associates, LLC. *The Economic Impacts of Medicaid Expansion on Missouri*. University of Missouri School of Medicine; 2012. http://www.nhchc.org/wp-content/uploads/2013/01/MO-Medicaid-Report.pdf.
6. Boardman A, Greenberg D, Vining A, Weimer D. *Cost-Benefit Analysis: Concepts and Practice*. 5th Ed. New York, NY: Cambridge University Press; 2018.
7. Erickson K. Parson taps speaker of Missouri House to run Medicaid program. *St. Louis Post-Dispatch*. https://www.stltoday.com/news/local/govt-and-politics/parson-taps-speaker-of-missouri-house-to-run-medicaid-program/article\_959530f5-ae6a-5474-bfd1-fc21b385497d.html. Published October 22, 2018. Accessed May 2, 2019.
8. Population Estimates by Age. Missouri Census Data Center. https://census.missouri.edu/population-by-age/report.php?s=29&y=2017&d=&a=0-65. Published May 3, 2019. Accessed May 3, 2019.
9. Missouri Economic Research and Information Center (MERIC). Missouri Gross Domestic Product. Missouri Department of Economic Development. https://www.missourieconomy.org/indicators/gsp/index.stm. Accessed May 3, 2019.
10. Missouri Population 2019. World Population Review. http://worldpopulationreview.com/states/missouri-population/. Accessed May 3, 2019.
11. Johnson LK. Missouri Workforce System. JobsMoGov. https://jobs.mo.gov/community/mo-workforce-system. Published May 21, 2015. Accessed May 3, 2019.
12. Viscusi WK, Masterman CJ. Income Elasticities and Global Values of a Statistical Life. *J Benefit-Cost Anal*. 2017;8(2):226-250. doi:10.1017/bca.2017.12
13. Courtemanche C, Marton J, Ukert B, Yelowitz A, Zapata D. Early impacts of the Affordable Care Act on health insurance coverage in Medicaid expansion and non-expansion states. *J Policy Anal Manage*. 2017;36(1):178-210. doi:10.1002/pam.21961
14. Dranove D, Garthwaite C, Ody C. *The Impact of the ACA’s Medicaid Expansion on Hospitals’ Uncompensated Care Burden and the Potential Effects of Repeal*. The Commonwealth Fund; 2017. https://www.commonwealthfund.org/publications/issue-briefs/2017/may/impact-acas-medicaid-expansion-hospitals-uncompensated-care. Accessed May 3, 2019.
15. Dying for Coverage: The Deadly Consequences of Being Uninsured. Families USA. https://familiesusa.org/product/dying-coverage-deadly-consequences-being-uninsured. Published December 16, 2013. Accessed April 28, 2019.
16. Office of Retirement and Disability Policy. SSI Recipients by State and County, 2017. Social Security Administration. https://www.ssa.gov/policy/docs/statcomps/ssi\_sc/2017/mo.html. Accessed May 3, 2019.
17. Haefner M. Missouri hospitals see uncompensated care costs rise to $1.3B in 2016. Becker’s Hospital CFO Report. https://www.beckershospitalreview.com/finance/missouri-hospitals-see-uncompensated-care-costs-rise-to-1-3b-in-2016.html. Published February 9, 2018. Accessed May 3, 2019.
18. Antonisse L, Rudowitz R. *An Overview of State Approaches to Adopting the Medicaid Expansion*. The Henry J. Kaiser Family Foundation; 2019. https://www.kff.org/medicaid/issue-brief/an-overview-of-state-approaches-to-adopting-the-medicaid-expansion/. Accessed May 1, 2019.
19. Coleman A, Nuzum R, Hayes S. Medicaid Expansion Across the Country: A Check-In on Recent Ballot Initiatives. The Commonwealth Fund. doi:https://doi.org/10.26099/f0rn-qr70
20. Guyer J, Shine N, Musumeci M, Rudowitz R. A Look at the Private Option in Arkansas. *Henry J Kais Fam Found*. August 2015. https://www.kff.org/medicaid/issue-brief/a-look-at-the-private-option-in-arkansas/. Accessed April 29, 2019.

**Appendix**

Table 1: Impact Matrix of Medicaid Expansion in Missouri, 2020-24

|  |  |  |  |
| --- | --- | --- | --- |
| **Impact** | **Medicaid Population** | **Taxpayers** | **Society (MO)** |
| *Coverage Impacts* | | | |
| Newly eligible adults and children enroll in Medicaid | 0 | - | **-** |
| Portion of disabled population that never becomes dual eligible becomes part of expansion population | 0 | + | + |
| *Economic Impacts* | | | |
| Increase jobs & labor income | + | + | + |
| Increase Gross State Product | + | + | + |
| Increase tax revenue | + | + | + |
| *Healthcare Impacts* | | | |
| Reduce private insurance premiums | 0 | + | + |
| Increase administration costs | 0 | - | - |
| Decrease in uncompensated care | 0 | + | + |
| *Health Impacts* |  |  |  |
| Decrease in mortality due to being uninsured | + | + | + |

Table 2: Assumptions and Initial Numbers used for 2020 Baseline

|  |  |
| --- | --- |
| **Assumptions** |  |
| Population | 5,279,446 |
| Population growth rate | 0.0066 |
| Economical growth rate | 0.045 |
| Discount rate | 0.04 |
| Newly eligible adults and kids coverage | $1,384,650,000.00 |
| Administrative costs | $69,232,500.00 |
| Disabled persons coverage costs | $24,764,590.20 |
| SSI applicants benefits | $55,000,000.00 |
| Benefits from jobs: income | $835,840,253.84 |
| Benefits from jobs: tax | $119,247,565.00 |
| Benefits from jobs: GSP | $1,363,200,000.00 |
| Taper off income | $773,487,294.93 |
| Taper off tax | $119,247,565.00 |
| Taper off GSP | $1,363,200,000.00 |
| Uncompensated care decrease | $516,600,000.00 |
| Private insurance premium decrease | $1,549,689.55 |
| Mortality decreases | $5,071,000,000.00 |
| Labor income per job | $40,699.15 |