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Yes We Can! Or Can We?

Medicaid Expansion Post-ACA and its Impact on Health Outcomes in all 50 States

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Abstract

This thesis analyzes the impact of Medicaid expansion under the Affordable Care Act on health outcomes in all fifty states. The United States healthcare system is complex and often fails to achieve strong health outcomes despite spending the most on healthcare throughout the Western world. The country is often compared to single-payer systems found in other countries, and there has been a push for universal coverage across the board. The United States attempted to address this problem in the mid-19th century for populations in need of welfare through the establishment of Medicaid, a government-subsidized healthcare coverage plan aimed at assisting those who cannot afford private coverage. Medicaid has been developed over time, widening eligibility requirements to include larger population groups. One particularly notable and familiar expansion occurred in 2010 under the Affordable Care Act (coined "Obamacare" under the Obama Administration), in which Medicaid was expanded to provide coverage to larger low-income populations and to reduce various barriers to access. However, the Supreme Court ruled in 2012 that forcing the expansion of Medicaid under this federal legislation violated state sovereignty, and this resulted in each state having the option to opt-in to the ACA's Medicaid program. Many states expanded from the outset, a few took their time deciding, and a dozen states still have not expanded Medicaid to this day. This sparks the question of how effective is Medicaid in improving the health of those who are in need of public assistance, and can one see such impact when comparing states that expanded against those who did not? This paper investigates the structure of Medicaid programming and implementation, and offers explanations into how states make such decisions, and analyzes data in order to identify the impact of Medicaid expansion under the ACA on health outcomes in every state. It is evident from the data that Medicaid expansion's impact on health outcomes is quite varied across groups, even when looking specifically between income groupings or other variables. We conclude that Medicaid

does not necessarily achieve its goal of improving health in eligible populations, and that further research is needed to investigate the possibility of fundamentally restructuring Medicaid programming as it exists today.

Around the world, healthcare and politics are severely intertwined. In the United States, healthcare coverage is an incredibly complex and important balancing game that tends to reflect the polarization of political parties. The United States sets itself apart from other developed[1] countries in its lack of universal healthcare coverage, and consistently ranks last on various measures of health coverage and quality despite spending the most on healthcare per capita (Davis et al., 2014.; Schroeder, 2007). To complicate things even further, federal healthcare legislation delegates implementation to individual states, leading to various disparities amongst states based on economics, infrastructure, and their legislative history (Jacobs & Callaghan, 2013). Healthcare policy in the United States has varied greatly over the past few decades, and disagreement is seemingly inherent in the American governance of healthcare. However, a recent opinion survey showed that Americans, no matter race, gender, or 2020 voting history, tend to agree that high-quality healthcare is a necessity, not a privilege (*Home*, n.d.). Reflecting on this causes one to wonder: did the expansion of Medicaid through the Affordable Care Act of 2010 improve coverage of care and health outcomes overall?

Medicaid was established in 1965 under the Social Security Amendments, and since then has undergone numerous modifications to establish coverage for low-income populations. In 2010, Medicaid underwent significant changes under the Affordable Care Act during the Obama Administration, seeking to expand health insurance coverage and reduce healthcare costs (*Program History | Medicaid*, n.d.). However, this expansion was not universal: states had the option to opt in, with implementation beginning in January 2014. Many scholars have studied how this expansion of coverage impacted health in different states through various individual-

[1] 'Developed countries' refers to countries with high quality of life, strong economy (includes per capita GDP), and their technological assets and industrial development. This typically includes Western countries, such as the United States, the United Kingdom, Italy, France, Canada, Germany, etc. (Majaski, 2020)

level and population-level health statistics, with the ultimate finding being that Medicaid expansion outcomes vary among different measures. This paper will review and analyze the existing knowledge of the relationship between expansion status under the ACA, and the impact its implementation has on health statistics and health disparities, as well as concepts relating to the topic (e.g., the structure of Medicaid, why states expand Medicaid, different measures of health, and more). This paper will also contribute to the literature, as it strives to provide a comprehensive picture of Medicaid expansion or non-expansion across all 50 states and the pattern of between-state inequalities in health outcomes.

Background

Before the ACA

In the United States, healthcare was widely privatized and unregulated until the early 20th century, with 'welfare' programs being created in 1935 by President Roosevelt in the wake of the Great Depression (*Constitutional Rights Foundation*, n.d.). This welfare state grew quickly, and in 1965 President Johnson signed the Social Security Amendments, officially establishing Medicaid for low-income populations and Medicare for those over the age of 65. While Medicare is federally funded, Medicaid is jointly funded by both the federal government and state governments. At its inception, Medicaid established federal coverage of a proportion of a state's healthcare costs to incentivize states to establish a set of crucial health services (*A Brief History of Medicaid*, 2016). Medicaid has developed these incentives to increase coverage and uptake of Medicaid within states.

While Medicaid is the United States' step towards the concept of 'universal coverage,' there are still many aspects of this program that provides potential barriers to care. Cost-sharing is one such example, in which Medicaid recipients may be charged by the state for portions of

their care through the form of deductibles (out-of-pocket amount that must be paid before state coverage takes effect), co-pays (a fixed amount for a specific health service), and more. Over time, these health services and programs evolved to include more populations through the redefinition of the poverty line, placing emphasis on pregnant women and people with disabilities, and more. However, some populations deemed vulnerable by the state or federal government may be exempt from cost-sharing (*Cost Sharing | Medicaid*, n.d.).

The 1980s saw the expansion of groups eligible for Medicaid, mainly including low-income pregnant women and children not receiving assistance. The 1990s changed the Medicaid program as well, expanding to include eligibility for documented immigrants and eliminating the automatic eligibility of Medicaid when receiving public assistance (*A Brief History of Medicaid*, 2016). The Medicaid program has experienced a great amount of reform and change even before the ACA, but this begs the question of whether it had worked during this time period. Medicaid has always been federally regulated but implemented by the states. While all states do have some form of Medicaid programming to help low-income populations, each state determines the necessary income level for eligibility, resulting in wide variance of both coverage and quality. Because of this, some scholars analyzed the relationship between Medicaid programming and health statistics during this time period.

Prenatal care was widely studied as a key health statistic in estimating improvements as a result of Medicaid, as expansion in 1981 was targeted towards low-income pregnant women. Epstein and Newhouse (1998) compared South Carolina and California in various prenatal health statistics, and concluded that enrollment in the Medicaid program increased, but that any changes in prenatal care were small and inconsistent. Piper, Ray and Griffin (Piper et al., 1990) focused on Tennessee and concluded that there was no change in prenatal care pre and post-expansion, while Dubay et al. (2001) were able to conclude some improvement in prenatal care in

Tennessee, but unfortunately no improvement in California, Georgia, or Michigan. Haas's team (Haas et al., 1993) concluded similar findings in Massachusetts. Howell (2001) reviews a significant amount of literature on this topic, and concludes that any association between Medicaid expansion and prenatal care improvements is weak and can be tied to overall improvements in natal health, rather than to Medicaid expansion.

To summarize, improvement in prenatal care and other natal health statistics was relatively small and inconsistent nationally across the board; through the 2000s, Medicaid expansion's impact on health statistics specific to the expansion population was minimal at best. Before 2010, rates of uninsured populations were on the rise due to increasing costs of healthcare and lower rates of coverage (Gilmer & Kronick, 2005; Long & Rodgers, 1995). Is the same true for expansion passed in 2010? And what did the Affordable Care Act change that hadn't been seen before?

The Affordable Care Act

In 2010, President Obama signed a 906-page bill that aimed to expand coverage to a larger portion of the population, increase coverage nationwide, and reduce healthcare costs on both the consumer's and the government's part. Coined "Obamacare," this phase of Medicaid expansion greatly reformed the program in multiple ways while also eliminating the negative aspects of private insurers: it allowed those under the age of 26 to continue to receive coverage under their parents' insurance plan; those at 138% of the poverty line qualify for Medicaid, and do not need to have children to be eligible; recipients cannot be denied coverage due to pre-existing conditions; and it included many more "essential benefits" that were not previously included in Medicaid plans, to name a few notable additions (Writers, 2021). The three main goals of the ACA were to reform the private insurance market, expand eligibility for Medicaid,

and to fundamentally improve the way decisions are made in healthcare (Silvers, 2013). The ACA also offered incentives that were seemingly too good to be true.

While Medicaid is still partially funded by the states, the ACA allowed for the federal government to take up most of the cost: "Washington covers all the cost of expansion for the first three years and, afterward, continues to pick up an unusually large portion of the administration and benefit costs—96 percent of costs, on average" (Crowley & Golden, 2015; Jacobs & Callaghan, 2013). However, if a state refused to expand its Medicaid program in line with the ACA, the entirety of the state's federal Medicaid funding would be stopped; this was done to ensure that Medicaid expansion worked across the board to eliminate variance and inter-state health disparities (Michener, 2020). This mandate sparked outrage amongst states and resulted in major consequences for the ACA and Medicaid.

Soon after the passage of the ACA, lawsuits were filed by individuals and states alike; the main concerns were 1) that mandating every individual to be insured is beyond the scope of a state's control, and 2) the expansion of Medicaid infringes on state's sovereignty, as defined in the 10th amendment (Crowley & Golden, 2015; Jacobs & Callaghan, 2013). The suits made their way to the Supreme Court, which ruled in 2012 under the *National Federation of International Business v. Sebelius* landmark case that states cannot be coerced into expand Medicaid to avoid termination of existing Medicaid programs and federal funding: "If a state accepts the new ACA Medicaid expansion funds, it must abide by the new expansion coverage rules, but, based on the Court's opinion, it appears that a state can refuse to participate in the expansion without losing any of its current federal Medicaid matching funds" (Mitchell, 2018). While all other provisions of the ACA were maintained, this decision was critical as it allowed for an opt-out option for states; today, 12 states have not adopted Medicaid expansion under the ACA. The ACA was intended to cut overall costs federally once implementation began, but it was immediately

theorized that federal costs may increase over time as a result of private insurance costs displacing Medicaid and those insured may decrease as a result of the opt-out option (Parente & Feldman, 2013). The implications of this will be further explored throughout this paper, as this decision adds another layer to the complexity of each state's implementation of Medicaid.

To Expand, or Not Expand (or Expand Late)?

The ACA passed in 2010, with implementation beginning in January 2014; as stated earlier, Medicaid incentivized state participation and implementation as over 97% of the cost to insure the newly eligible population (Holahan et al., 2013); many states had the potential to also experience a net revenue if they opted in (Flagg, 2016). States were able to adopt at any point, yet despite the incentives, over half of the states opted out of Medicaid expansion before the implementation date: 14 states have never expanded while 12 expanded late, leaving 24 states that expanded Medicaid from the outset. Given the seemingly natural choice of expansion for financial benefits in addition to increased coverage and potential for improved health, scholars began to question why so many states chose to not expand from the outset. Before diving into the implications of this variance in expansion, some scholars have explored why some states expand when others don't, and why dichotomous classifications of this decision may not provide the entire picture when performing analysis.

Before implementation of the ACA even occurred, some spoke out about why states should not expand: Dayaratna (2012) cited concerns of Medicaid expansion to include more people harming those who were already receiving Medicaid, while Turner and Roy (2013) suggested that Medicaid expansion would hurt the economy and increase spending. The ACA was deemed highly controversial and was greatly impacted by party politics, with many Republicans speaking out against the legislation; despite agreeing with most of the reforms in the ACA, many had a problem with the mandate requiring every individual to have insurance and

just general issues with government's role in healthcare (Dalen et al., 2015). Even further, the elections held in 2012 and 2014 offered an opportunity for Republicans to speak out against Medicaid expansion and to make it a key policy point (Dalen et al., 2015). However, the actual reasoning behind why some states opted out is much more complex.

One reason some states cited was the recent publication of the Oregon Health Insurance Experiment performed in 2013. It compared Medicaid recipients chosen by lottery in Oregon two years prior against those eligible but not chosen, utilizing various health measures including both mental and physical health. A working paper from 2011 demonstrated that in the first year after this experiment, those who had received Medicaid had higher rates of health care utilization, lower medical debt, and better self-reported health (Finkelstein et al., 2011). Later analysis drew more conclusions to identify the true impact of Medicaid expansion on health. In terms of mental health, Medicaid recipients experienced significantly improved rates of self-reported mental health and reduced rates of depression (Paradise, 2017). In addition, Medicaid's expanded coverage allowed for increases in detection of diabetes and medication uptake, but did not have a significant impact on diabetes or blood pressure; in other words, Medicaid expanded coverage and access, but did not have a direct impact on physical health. Baicker and her team (2013) concluded overall that Medicaid recipients did not experience improved physical health outcomes when compared against non-recipients.

Scholars have interpreted the results of this study differently. Grant (2014) argues that the conclusions of the study "minimized" the results regarding health improvements and equated no *significant* improvement to no improvement whatsoever. Regardless, the experiment fueled conservatives in the field. Cannon is one such conservative who had spoken out against Medicaid both before and after the passing of the ACA, claiming in 2005 that "Medicaid discourages work and charitable efforts among the taxpayers who fund it, while discouraging

self-sufficiency and encouraging dependence among beneficiaries" (Cannon, 2005), and in 2011 that the OHIE results "rebuke to those who are pushing states to expand Medicaid" and prove that expansion of Medicaid to larger populations is not urgent (Cannon, 2011). Avik Roy is another who, in response to the OHIE, recommended giving money to poor people directly rather than go through Medicaid for the financial benefits - this is the same person who said Medicaid, an insurance type, is the "developed world's worst healthcare system" (Roy, 2012; Grant, 2014)). It is clear that the OHIE played a major role in adoption of Medicaid expansion under the ACA in 2014, with many legislators and governors citing it as the main reason for their dissent against the ACA expansion (Grant, 2014).

In addition to the OHIE, there are other reasons that states may not expand; one such reason is political polarization. From the Obama administration onward, political polarization and party-line voting had increased immensely, eventually trickling down into citizens (Meyer-Gutbrod, 2020). One study found that party control of a state is closely correlated with whether that state opted in to expand Medicaid or not (Jacobs & Callaghan, 2013). There was a seemingly clear understanding that Democrat-controlled states would expand while Republican-controlled states would opt out, especially considering the ACA passed without any Republican votes. Even further, some theorized and observed early on how Democrats unified to reform and quickly implement such expansion, while Republicans unified to oppose the expansion and remain stagnant (Jones et al., 2014; Oberlander, 2011). The state politics spillover was proven true in part, as Republicans went above and beyond to file lawsuits and widely resist expansion (Bolton, 2014; Parker, 2014).

Some outliers remained – various Republican-controlled states and some individual Republican legislators opted in to expansion. Meyer-Gutbrod (2020) argues that this difference is explained by the mitigation of partisan policy as a result of inter-party competition, which

ultimately lends itself to bipartisanship; while polarization is key in competition for institutional control, this alignment shifts in the face of extreme partisan policy in swing states, contributing to the differences in Medicaid expansion. Electoral pressure is seemingly evident in this phenomenon, which is seen in other studies analyzing the differences in decisions made by legislators (Flagg, 2016). This also had major implications later on in 2017 when attempts to appeal the ACA failed in the Senate due to the expansion of certain Republican-controlled states (Meyer-Gutbrod, 2020). However, the classic division down the party line does not capture the entire story of variance.

Economics may also play a large role in what determines expansion. When considering Medicaid expansion, many believed that poorer states would jump at the opportunity to receive federal funding to offer expanded access to care in their state and that the "economic argument would trump ideology" (Flagg, 2016; Peacock, 2014). In general, states with higher income per capita expanded at the outset, while lower income states did not (Jacobs & Callaghan, 2013b). In attempts to explain this reasoning, Governor Walker of Wisconsin continuously claimed that the federal government and their enhanced federal funding "could not be trusted," but this did not mean that the amount of money offered was insufficient (Flagg, 2016). Alternatively, Ohio Governor Kasich followed the expected pattern where such an amount of money cannot be turned away (Kasich, 2013). Flagg's interviews with Ohio legislators all aligned with this understanding that they couldn't possibly say no, especially when the deal would ultimately result in revenue for the state (Flagg, 2016). Overall, it seems obvious that states would expand Medicaid simply because of the financial gain, but many states still chose to opt out. While economics, political polarization, and experiments on Medicaid all contribute to the variance found in expansion, some have found that the classification used by the Kaiser Foundation is insufficient.

A unique take on the question of whether to expand or not looks at this measurement as one that does not capture the entire story. The Kaiser Family Foundation has published numerous updates on which states have expanded, which states have not, and which states expanded late. However, some scholars have found that these three options are too simple to describe what is actually going on and miss important intricacies involved in Medicaid expansion; for example, Tennessee has not expanded Medicaid but they have received over $8 million dollars in funding towards expansion to find a system that works for them. Instead of the simple yes/no/kind of, some have argued that a combination of the above factors can paint a better picture of why certain states expand. Jacobs and Callaghan (2013) work through these factors by assigning point totals to each variable for each state and rank them based on political polarization, economics, and policy history. Alternatively, Fedewa et. al (2019) utilize a classification system that is based on the Kaiser Family Foundation's system, but recodes it to specify "Very Early," "Early," and "Late" to account for disparities in timing of expansion. Objectively speaking, policy perspectives may argue that the example of Tennessee remains under the "non-expansion" category, and such classification is taken into account during the data analysis portion of this paper.

Finally, states had at least two years (but more likely over four years) to decide if they wanted to expand Medicaid or not. The ACA was passed in 2010, and the SCOTUS issued a ruling on the ACA through *National Federation of Independent Business v. Sebelius* in 2012; expansion was not to be put into effect until January 1, 2014, so states had 2-4 years to decide on whether or not to expand. However, several states expanded late – some expanded within a few months of implementation (Michigan in April, New Hampshire in August), some from 2015-2016 (Pennsylvania, Indiana, Alaska), and a large portion of states expanded very late from 2019 through today. With a dozen states expanding late, one may wonder what changed that a state

chose to expand Medicaid after 2014. Some states were simply working through their bureaucratic structures and were not able to finalize their decision in time, such as Pennsylvania and New Hampshire (KFF, 2015; Norris, 2020). Other states delayed their expansion for years, and many remain non-expanded today with plans to expand sometime in 2021.

Since many states had expanded and quite a few did not, scholars began asking the question: do expansion states have better health outcomes when compared to non-expansion states? There is extensive literature that discusses the impact of Medicaid expansion in various states utilizing myriad health outcomes and measures, and this next section will include a brief description of variables studied, as well as extensive analysis of what is known about the impact of Medicaid expansion.

Current Literature on the ACA and Health Outcomes

Despite its complexities and its critics, Medicaid did have an impact on various health outcomes across the country. Many scholars have completed research into specific states, comparing health inequities between non-expanded and expanded states, as well as overall health statistics to help identify where tangible change has occurred. It is important to remember that Medicaid is an insurance type, not a health system (unless one is talking to Avik Roy). Therefore, Medicaid's impact on health outcomes is directly related to an increase in access, quality of care, and coverage.

At its inception in the 1960s, Medicaid had improved health outcomes: infant mortality rates dropped, cases of infectious disease declined, and access greatly improved (Kinney, 1990). However, following decades did not experience such significant success on health outcomes, especially when analyzing prenatal care since the ACA expansion in the 1980s mostly focused around expanding access to pregnant women (Dubay et al., 2001; Epstein & Newhouse, 1998; Haas et al., 1993; Piper et al., 1990). The ACA and Medicaid expansion in 2014 has had many

scholars, researchers, politicians, and citizens wondering if the ACA actually worked in improving health for those in poverty. There are multiple ways to analyze the effectiveness of the ACA and Medicaid expansion: this section will first detail the impact of expansion on key health indicators, specifically maternal and infant health many scholars selected specific states or groups of people to stratify by to utilize a most-similar-symptoms or differences-in-differences analysis, as well as specific health outcomes to give tangible data regarding the impact expansion had; other scholars look nationwide, generally analyzing the differences from years before the ACA to years after; finally, beyond health outcomes, some scholars have analyzed the institutional impact the ACA has had on hospitals and other care facilities to simply analyze the effect of expanded coverage on care.

Maternal and Infant Health

While there are many indicators of population health, prenatal care, infant mortality, and other birth-related events are key indicators of healthcare quality for multiple reasons. Firstly, birth-related hospitalizations are the leading cause of hospitalizations for women, and has made maternal/infant health a public health priority; in addition, birth-related events are widely accepted and utilized as one of the best indicators of a country's healthcare quality (Pileggi et al., 2019). Infant mortality is utilized across the board to identify community health status, socioeconomic statuses of different regions, and the access to and quality of care that is provided in that area (*Why Focus on Infant Mortality?*, 2008). With this in mind, some scholars looked at care in relation to infancy and motherhood, specifically with postpartum care and natal morbidity statistics.

Firstly, Karpman and his team (2016) found that low-income mothers had larger increases in coverage in expansion states than in non-expansions states, nearly doubling the decline in uninsured rates. A notable study utilized a most-similar-systems design when

comparing Utah (at the time, a non-expansion state) and Colorado (an expansion state) in postpartum health coverage and utilization of such care. Gordon and her team (2020) concluded that new mothers in Utah lost coverage at higher rates and accessed fewer outpatient visits under Medicaid than mothers in Colorado, inferring that Medicaid expansion results in more stable coverage in postpartum care. In addition to general increases, it is important to consider maternal and infant care within racial disparities; black women experience worse maternal morbidity than white women, and maternal health overall demonstrates decades-old significant racial disparities that Medicaid expansion may address (Fang et al., 2000; Singh, 2021).

Many scholars utilized social determinants of health and racial disparities within their analysis of maternal and infant health. Bhatt and Beck (2018) concluded that infant mortality had decreased significantly in Medicaid expansion states, with larger decreases in black infants when compared to white infants. Wherry (2018) found significant increases in prenatal care in Medicaid expansion states, with notable increases in prenatal care uptake in less educated mothers. Brown and her team (2019) found that birth weight and premature birth statistics experienced significant improvements in disparities amongst black infants compared to white infants in Medicaid expansion states when performing a difference-in-difference-in-differences analysis. However, Brown also concluded that the data in their differences-in-differences analysis showed no significant improvement in these maternal/child health statistics overall since 2011, contradicting other studies. While this result holds major implications for the relationship found between maternal health statistics and Medicaid expansion overall, these studies offer an important note on the major role social determinants play in access/quality of care and notable health disparities; this topic will be expanded upon later on.

Upon analyzing these sources, it may seem like Medicaid expansion's impact on maternal and infant health outcomes may vary, and is not always significant, nor is it always

improving. It is important to remember that Medicaid was expanded in 1981 to specifically expand coverage to pregnant women to improve health outcomes in mothers and children, and studies on this expansion showed that health outcomes barely improved as a result. Today, quite a few studies have found improvements in such statistics since the implementation of the ACA and indicate that, broadly speaking, maternal and infant health in those receiving Medicaid is improving. While minimal, it is important to keep in mind that no significant improvement does not mean no improvement whatsoever. Beyond maternal and infant health, other health statistics are necessary to analyze in order to provide a comprehensive perspective.

Diagnosis and Self-Rated Health

In addition to specific health outcomes, other measures of health and access are needed to offer an additional perspective. Self-rated health status is a reliable measurement and a strong predictor of mortality, as people tend to have a good sense of their own health and rate it as such (Crossley & Kennedy, 2002; Jylhä, 2009). In addition, increased diagnosis of different diseases and conditions is important as it demonstrates an increase in preventative care. Each of these measurements require further explanation, and have experienced improvements as a result of Medicaid expansion.

Some may assume that self-rated health may be prone to bias, as many people might rate themselves lower or higher than their actual health status for various reasons. However, it has been proven that SRHS is a strong indicator of morbidity and mortality, and is utilized often when considering the impact of Medicaid expansion (Jylhä, 2009). Many studies have found that Medicaid expansion's impact on SRHS is small, if not nonexistent; many conclude Medicaid expansion did not have a significant effect on SRHS when utilizing differences-in-differences analyses (Courtemanche et al., 2017; Miller & Wherry, 2017; Simon et al., 2016; Sommers et al., 2015). One study found the opposite, comparing a couple of expansion states to Texas (a non-

expansion state) in terms of SRHS; they concluded that expansion states experienced an increase of better rated SRHS of 4.8%, while Texas experienced a 7.1% decrease in such good health ratings (Sommers et al., 2016). Even so, it is clear that the overwhelming amount of research shows SRHS is not significantly impacted by Medicaid expansion. Kobayashi (et al., 2019) concludes that, in light of the fact that most studies have found SRHS to not be affected, that such subjective indicators may not be useful in analyzing the impact of Medicaid expansion. This is an important critique, as SRHS is viewed as an extremely reliable measure that then fails to inform any changes due to Medicaid expansion.

Beyond SRHS, diagnosis of conditions and disease screenings are important, yet seemingly counterintuitive indicators of improvement. When first analyzing rates of disease, one may be inclined to think health is worsening if the number of cases is increasing; alternatively, number of cases may be an indicator of improved diagnostics and increased rates of primary care uptake in those previously unable to do so. One source found that there were "significant positive expansion effects on severity of illness, which indicates that people with greater need for inpatient services were more likely to gain health coverage than not" (Mazurenko et al., 2018; Pickens et al., 2018). Cancer screenings are often used as indicators as well. Sammon and team (2018) found that, despite national declines in prostate cancer screenings, the gap between high and low income men receive screenings had narrowed, indicating more equitable access to health. Sabik, Tarazi, and Bradley (2015) concluded that women in non-expansion states had a lower probability of receiving breast cancer screenings or Pap tests. Others found the opposite: Huguet et. al (2019) found that cancer screenings had increased in both expansion and non-expansion states without significant difference between these groups. Hendryx and Luo (2018) found that cervical cancer screenings had increased for low-income women post-ACA overall (regardless of state expansion status) – however, Fedewa and team (2019) argue against this, in

that such screenings rose in low-income populations across the board, but that increases were significantly higher in expansion states that expanded early. There are many more scholars who have analyzed cancer screenings as they relate to expansion of Medicaid, and this summary is not by any means exhaustive, but it proves its point.

The answer to the question of Medicaid expansion's impact culminates in the example of cancer screenings: it truly is a mixed bag. Countless scholars have concluded different findings in the connection between expansion and cancer screenings, and some such conclusions are reflected above: some find that cancer screening rates are highly dependent on Medicaid expansion, and others claim that there is no difference as screening rates increase across the board. Through this point, Medicaid expansion's impact had varied greatly across different populations. However, institution utilization and the cost of caring for the uninsured offers a different, more consistent result.

Institution Utilization and Cost

When considering Medicaid and its structure, institutions in the United States have naturally become major indicators of Medicaid efficacy and implementation. Safety net hospitals (SNHs) are one critical example of this, defined as "hospitals and other providers that organize and deliver a significant level of health care and other health-related services to patients with no insurance or with Medicaid…often referred to a 'last resort'" (2019). A major concept considered with SNHs are compensated care costs, calculated as the total monetary losses on charity care for those uninsured and 'bad debt' (Dranove et al., 2016). In theory, uncompensated care costs would be reduced due to expansion of coverage, even with increased care uptake from expanded insurance coverage. Some researchers look to these as indicators of Medicaid expansion and the impact it had on such institutions' care for a wide range of health outcomes, rather than specific outcomes.

Dobson and their team (2017) analyze safety net hospitals, and analyze amount of Medicaid inpatient days and uncompensated care costs from 2012-2015. They concluded that SNHs in states that expanded Medicaid experienced statistically significant increases in inpatient days with significant decreases in uncompensated care costs since 2012 – more people had access to care and that coverage of such care had increased when compared against non-expansion states. Other scholars' findings support this conclusion: Dranove's team (2016) estimate that these costs decreased a 1% since 2011 in expansion states, and that costs in the non-expansion states could have decreased up to 1.7% had they chose to expand; Berry and his team (2016) focused on people living with HIV (PLWHs) and their coverage from 2011 to 2013 in expansion states versus non-expansion states, concluding that Medicaid coverage increased for PLWHs and that compensation care costs decreased for this population; Bazzoli (2016) did not analyze expansion under the ACA specifically, but found data on individual hospital expansion of coverage in California that shared similarities with the ACA's Medicaid structure, concluding that for-profit hospitals were benefited the most through reductions in uncompensated costs. Overall, rates of insured increasing did not bear an additional cost to such hospitals and institutions, allowing for more individuals to receive quality care under federal funding.

It can be noted here that an increase in insured individuals and Medicaid beneficiaries is also a significant success. While it may seem obvious that expansion of Medicaid results in a higher percentage of those insured, Medicaid enrollment is not automatic. Those who qualify have to choose to enroll, and go through the process of proving eligibility, maintaining such evidence, and so forth. Enrolling in Medicaid may appear to be a no-brainer, but there are actually a few reasons some may choose to not enroll, or even to unenroll themselves. One reason may be stigma surrounding Medicaid enrollment, as one study found that 14% of respondents (two-thirds of which were on Medicaid at the time of the study) had felt stigmatized

due to an experience regarding healthcare, with other studies concluding that stigma is a significant deterrent to accepting such forms of welfare (Allen et al., 2014; Rahardja & Levinson, 2004). Stigma in Medicaid can come from many aspects of the program, such as the language used against recipients, perception of Medicaid being 'worse' than Medicare or Social Security (all of which are welfare programs), and interactions with 'street-level bureaucrats' when working to prove their eligibility (Mills 1996; Grogan Park 2017; Gordon 1994; Soss 1999). From this, it is clear that Medicaid uptake is not automatic, nor is it preferable. Further, Medicaid enrollment is not automatic, which may result in many eligible people not enrolling until they are already sick or in need of medical care, counterintuitively leading to 'poorer' health in Medicaid enrollees. Despite this context, Medicaid expansion has been extremely successful in increasing the rates of insured individuals in spite of these negative aspects.

While this measurement of institutional cost and insurance coverage is not directly reflective of health outcomes, these data show an economic perspective that demonstrates the impact of Medicaid on the general population. Analysis of this section shows that, in this specific topic, Medicaid is extremely successful. Costs to care for the uninsured are decreasing as coverage increases, more people are utilizing health services and getting necessary treatment, and some scholars have even calculated a high potential for improvements in non-expansion states. Put together, it is clear that Medicaid expansion is having a strong impact on various populations: the ACA had a significant effect on a larger population and resulted in better health outcomes and access to care across various measurements. However, this may be too good to be true – it is important to also consider the impact the ACA Medicaid expansion had on different societal factors connected to health, specifically racial disparities.

Racial Disparities and the ACA

Healthcare systems impact various populations and individuals in different ways, and disproportionately negatively affects specific demographic groups through different health and societal aspects. Social determinants of health are a growing topic that has grown in relevance and within the literature exponentially over the past few decades as social factors are highly correlated with inequalities experienced in the health of different communities (Braveman & Gottlieb, 2014; Health & Organization, 2008). Such social factors include socioeconomic status (which includes income, occupational experience, and economic/social standing in relation to others), race/ethnicity, education, housing, and more. Medicaid expansion is intended to address inequities experienced by those with low socioeconomic status, as it expands coverage to a larger percentage of those with low income. It also aims to address health inequities due to race and ethnicity, and ultimately reduce them (Michener, 2020; Ossei-Owusu, 2016). This section will discuss what success Medicaid expansion has had in reducing such racial disparities in health, and what implications this holds.

Systemic racism is inherent throughout the United States' healthcare system, and the ACA is unfortunately not immune to this. A large percentage of Medicaid beneficiaries are Black or Hispanic (20% and 30%, respectively). The ACA's original intention was to expand coverage and access across the board for those living in poverty, it indirectly allows for possible reduction of inequalities as many of those living in poverty may also be racial minorities ("Distribution of the Nonelderly with Medicaid by Race/Ethnicity," 2020; Michener, 2020). However, the SCOTUS ruling that allowed certain states to opt out of Medicaid expansion added another layer of disparity between states. Many of the states that opted out had divided governments or were controlled by the Republican party, including many Southern states. Michener (2020) summarizes the implications of the ruling: "… more than 60% of uninsured

poor black adults excluded from Medicaid due to states' refusal to expand (i.e. those in the coverage gap) lived in just four southern states: Georgia (19%), Texas (16%), Florida (14%), and Louisiana (11%).” Since Medicaid expansion and implementation is left almost entirely to each state’s legislatures, this variation lent itself to further racism and disparities as such jurisdiction of each state’s governance is a major contributor to systemic racism in the United States (M. Brown, 2003; Michener, 2020). Overall, race and Medicaid expansion are heavily intertwined politically, and rarely in a positive perspective. Such findings are also reflected in coverage rates and health outcomes of different races and ethnicities.

In general, expansion of Medicaid has improved racial disparities in coverage nationally: Chaudry and her team (2019) found that the coverage disparity between Black and white citizens had decreased 5.7% since 2013; Buchmeller (2016) echoed these findings, reporting that coverage gaps narrowed with the percentage of uninsured Hispanic people decreasing by 7.1% and uninsured Black people by 5.1% with more success in expansion states; Chen (2016) found that reductions in uninsured populations were more substantial in Black populations across income levels in the initial years of the ACA implementation; Angier and team (2017) found that all racial and ethnic groups experienced reductions in uninsured visit rates, but that this finding could not be applied across the board when comparing expansion and non-expansion states and all racial minority groups; finally, Yue (2018) found that Medicaid expanded access overall, but that the impact on different racial groups were extremely mixed, with Hispanic disparities actually widening. Overall, Medicaid expansion’s impact on racial disparities is a mixed bag.

While this analysis only depicts coverage rates and the reduction of disparities in these parameters, it does well in giving perspective to just how varied the results of Medicaid expansion are in reducing racial disparities. Coverage and access are critical when attempting to achieve better health outcomes overall, and Black people specifically are negatively impacted by

various conditions more so than white people (a key example often cited is disproportionately high maternal morbidity in Black women compared to white women). The ACA had the best intentions to reduce such disparities, but failed in achieving this due to the SCOTUS ruling. It can be hypothesized that had states been mandated to adopt expansion, improvements in health may have been seen, resulting from the standardization of the practice. Unfortunately, this was not possible, and the ACA failed Black and brown populations at the hands of Republican-controlled states and federalism.

Hypotheses

It is evident that Medicaid expansion and the goals of the ACA are exceedingly complex, with the results holding many implications for the health of a nation. This summary depicts the disparities in health and access to quality care amongst socioeconomic statuses, the quantitative impact Medicaid expansion has had on those newly eligible, and the potential societal, racial, and institutional implications found in the implementation of the ACA. Understanding what we know and why it is significant is critical in progressing towards improvement in health nationwide. Variance is consistent throughout each concept discussed in relation to Medicaid expansion.

Maternal and infant health have shown inconsistent improvement, but improvement nonetheless. As a key indicator of quality of care and health in a nation, maternal and infant health was critical to include in this analysis. The results of this section follow the narrative of Medicaid expansion: while there is improvement overall, consistent and significant improvement in expansion states compared to non-expansion states is hard to find. While access to care has increased, and prenatal care is at an all-time high, different measures of this concept result in different conclusions. This variance in health offers a specific story regarding the impact of the

ACA on a tangible health outcome, and contributes well to the understanding of the Medicaid mixed bag.

Institutional measurements offer a unique perspective that does not fit the script, in that these measures show consistent and significant improvement in expansion states versus non-expansion states. Compensated care costs have been reduced across the board in expansion states as more people gain coverage and utilize health services more. This is considerable, as Medicaid beneficiaries have a choice – just because one is poor does not mean they are automatically enrolled in Medicaid and receive those benefits. Despite potential stigma and the hurdles one encounters when proving eligibility for Medicaid, insurance rates have been shown to increase significantly as a result of expansion under the ACA. This result has also impacted the costs different institutions bear, and ultimately reduced such costs as federal funding relieved that burden. This section is a bright point in consistency and success for Medicaid expansion, but unfortunately, this conclusion is not sustained throughout this analysis.

The ACA had mixed success in addressing and reforming racial disparities in coverage and access; while coverage disparities were significantly reduced, the inability to mandate such expansion nationally greatly impacted the coverage of those living in non-expansion states, especially Black and brown people. Analyzing specific health outcomes and data, information regarding institutional implementation and success, and the impact on racial disparities as a function of social factors provides a comprehensive picture of how successful the ACA has been in expanding Medicaid to improve access and outcomes. The literature clearly demonstrates that improvement is found, but various factors have contributed to this result's national inconsistencies. Overall, the ACA got dealt a bad hand through the SCOTUS 2012 ruling; regardless, significant racial disparities still exist in various health measures, and the ACA ultimately fell short in their goals to reduce such disparities.

This review has made one finding quite clear: Medicaid expansion under the ACA has varying success when considering which health outcome one analyzes, the institutions' success in reducing costs, and social factors involved in this relationship. With all of this in mind, the rest of this paper sets out to analyze the impact of Medicaid expansion under the ACA, pre-ACA (in 2009) and post-ACA (2018). This research aims to analyze every state, stratifying them by expansion status and analyzing various health statistics. Utilizing the literature as a starting point for this project helps to fill in the gaps to answer the question: does Medicaid work in a post-ACA country?

In order to answer this question, various hypotheses were formed and tested. Firstly, if Medicaid access is expanded to include more population groupings, then we should expect to see an increase in coverage in expansion states but not necessarily in non-expansion states. This first hypothesis is important, as the literature review found that Medicaid expansion does increase coverage. It was next hypothesized that, while the health outcomes as a result of Medicaid expansion may vary, if the ACA expanded access to more people through the expansion of Medicaid, then we should expect to see an increase in general health ratings in expansion states compared to non-expansion states. This analysis can also be specified to target specific subsets of the population that may be more impacted by Medicaid expansion than other groups. Therefore, the third hypothesis states that since the ACA has expanded Medicaid to those at 138% of the poverty line, those who fall under this category will experience improved health ratings in 2018 from 2009 compared to those who are not in this category. A fourth hypothesis will also be tested that will act as a reference for the data, or as a robustness measure, by looking at overall population life expectancy for expansion versus non-expansion states; the fourth hypothesis states that since Medicaid expansion's improvement of health outcomes can only occur in expansion states, we should see improved population life expectancy in expansion states

compared to non-expansion states. These four hypotheses will guide the data analysis in the next section.

Data Analysis

In an attempt to answer the question of Medicaid expansion's impact, a preliminary data analysis was performed to provide some guidance into what the data shows. Before diving into the methods followed in this analysis, it is important to review the types of data involved in public health analysis. There are many ways to approach this analysis, including on the individual level, the population level, and at the institutional level as well.

When working in public health, there are hundreds of measurements used to determine one's health status. Individual-level data include measurements taken at the patient-level; these can include diagnosis of individual diseases or conditions, diagnostic measures such as weight or blood pressure, self-rated health status, and more. Individual-level statistics can also include social determinants of health, which are societal aspects of one's life that may greatly impact their overall health while not necessarily being caused by their health; these include race, ethnicity, socioeconomic status, education, and other measurements. Social determinants can also help to explain inequalities and disparities in health, whether it is one's access to care, the quality of care they experience, or health conditions that are disproportionately high for certain demographic groups (2019). Individual-level data and statistics are good for analyzing a specific community's health status to implement health programs, but are not necessarily practical when analyzing data across large regions or populations. When performing statistical analyses, extremely large sample sizes may not be sensitive to particular data.

Another way of measuring health is using population-level, aggregate data. This data focuses on the health of an entire community, region, or population to inform future programs utilized in those areas or to evaluate the effectiveness of a health program. These measures

typically include life expectancy, infant mortality, and rates of certain conditions such as cancer or diabetes. Population-level data is considered somewhat controversial as it extrapolates how to address patient-level issues based on broad data, and while good for policymaking (Michael & Yen, 2009), this can hold major implications and ultimately fail to properly predict the impact of a certain program or policy on people (Haneuse & Bartell, 2011). However, aggregate data are useful in analyses across larger populations to draw conclusions that can further inform more in-depth programs and research. Overall, each of these measurement types hold different implications and are useful in different analyses. Interestingly, previous analysis on Medicaid effectiveness in expanded and non-expanded states include both individual-level and population-level data to seek out answers to this question.

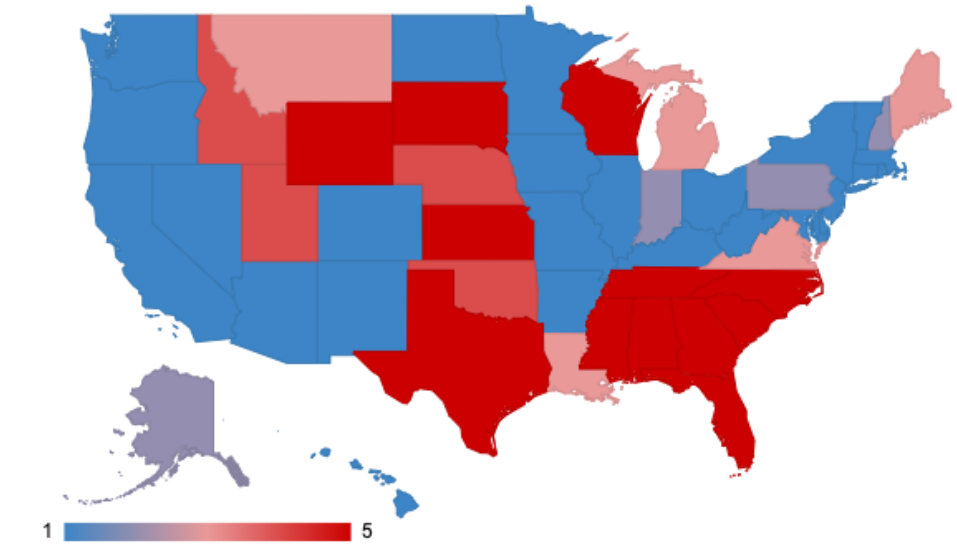
In this preliminary analysis, both individual level and aggregate data were utilized. The Behavioral Risk Factor Survey (BRFSS) was the primary source of data, which is a highly valid source of health data performed by the CDC every year through interviewing over 400,000 individuals over the phone. The BRFSS therefore is based on individual level, where each data point is one person's race, income, self-rated health, diagnoses, and much more. In order to gain a comprehensive perspective on the data, the data was included as both individual data and was later aggregated by different variables to create more concise data and to allow for more sensitive data analyses. All data analyses were performed through the IBM SPSS data processor and through Excel. The next section will detail the variables included during the preliminary data analysis found within the BRFSS.

Data Context

The data analysis consisted of two individual samples, one from the 2009 BRFSS and one from the 2018 BRFSS. These years were selected to reduce the impact of potential confounding variables related to the timeline - 2009 was far enough in advance where aspects of the ACA had

not yet been developed or implemented, and 2018 allowed for 5 years of progress from the implementation of ACA in 2013 to capture the true effects of Medicaid implementation. However, further stratification of the data was needed in order to find reasonable results; when using a dataset of over 400,000 data points, anything will be statistically significant. Therefore, the data was stratified by state; as detailed above in the literature review, some states chose to adopt the ACA Medicaid expansion from the outset, while others opted out completely. To better illustrate this, Figure 1 below depicts a map of the United States and each states' Medicaid Expansion status; red indicates no expansion whatsoever, green indicates expansion from the outset, and orange or yellow indicates late expansion. In the dataset, states were coded binarily, as either "Yes" for expanded from the outset, or "No" for not expanded or expanded late. This allowed for population-level analysis using individual-level data.

Figure 1: Medicaid Expansion by State (2021)



1 = Expanded, 3 = Expanded Late, 5 = Never Expanded

Different variables were utilized throughout the data analysis process to try to gain a more comprehensive picture of the relationships between health and Medicaid expansion. Firstly, the main health question in the BRFSS was a general self-rated health status question, which was recoded to allow for low scores to equal poorer health and higher scores equating better health (on a scale from 1, 'poor health,' to 5, 'excellent health'). In addition to the health variable, income was another question referred back to for data analysis, as Medicaid eligibility is determined by income level. Income levels were coded by the BRFSS as follows: 1 for < $10,000 a year, 2 for < $15,000 a year, 3 for < $20,000 a year, 4 for < $25,000 a year, 5 for < $35,000 a year, 6 for < $50,000 a year, 7 for < $75,000 a year, and 8 for more than $75,000 a year. The data was later broken down more simplistically, allowing for income scores of 1-4 to be coded as "Poverty" and 5-8 to be coded as "Not Poverty," in accordance with poverty levels for families of 4 during this time period. The BRFSS variable for health care coverage was also used; while both the 2009 and the 2018 BRFSS included a question regarding Medicaid, over 300,000 participants in 2019 refused to answer this question. Therefore, the only coverage question that could be used within this study simply asked if the person had healthcare coverage (private, Medicare, Medicaid, employer, or other).

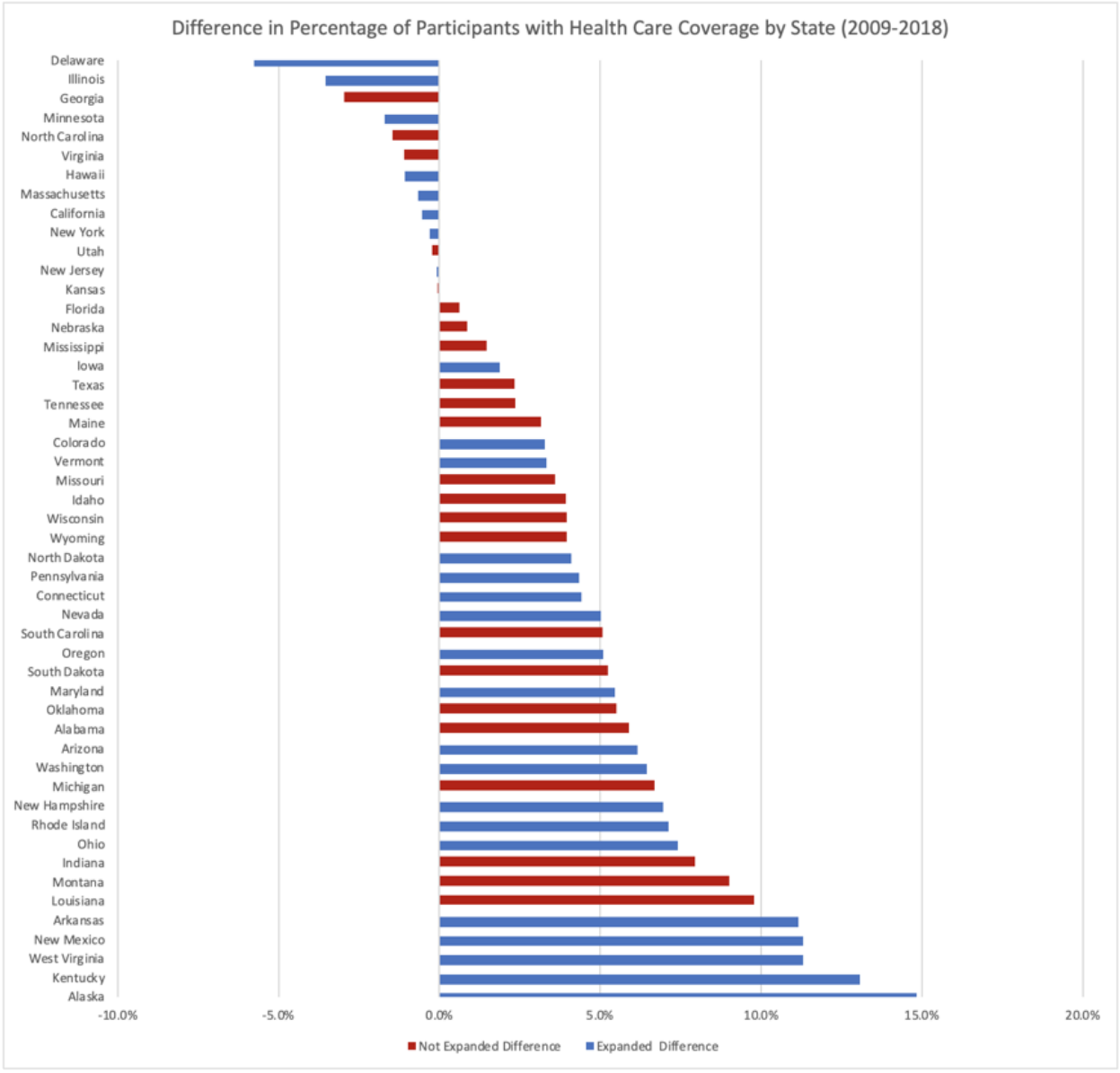
Finally, in order to determine the robustness of this analysis, population-level data outside of the BRFSS to see the trend of health in each state over time were also included. Therefore, CDC data was utilized to determine the population life expectancy of each state from 2009 and 2018. Each of these variables and health measurements was utilized within the data analysis, and comprehension of each measurement is critical in understanding the subsequent results.

Methods and Results

Hypothesis 1

The first question that may seem to have an obvious answer is whether or not health care coverage increased in states that expanded. The first hypothesis states that the percent of the population with health care coverage should increase in expansion states. Overall, 10.5% of the 2009 BRFSS participants identified as uninsured, and only 8.1% of 2018 participants indicated this. This relatively basic number shows a general increase in coverage, but cannot be concretely attributed to Medicaid expansion. Therefore, individual states coverage rates from 2009 to 2018 where studied to see if there is a trend amongst those that expanded Medicaid and those that did not. Graph 1 demonstrates the difference in health care coverage reported by BRFSS participants, where negative numbers indicate that coverage has decreased and positive numbers indicate that coverage has increased. The graph indicates there is a wide variance of coverage amongst states regardless of expansion status, but the majority of states have had coverage increase. The top five states that experienced the largest increase in coverage are all expansion states. Notably, there are quite a few expansion states that have had coverage decrease (specifically, Delaware, Illinois, Minnesota, Massachusetts, California, New York, and New Jersey). This is interesting, as it does not follow the trends analyzed in the literature. Regardless, these overall data findings match the trends discussed in the literature review in that Medicaid expansion generally leads to an increase in coverage with some exceptions.

Graph 1: Health Care Coverage Change over Time

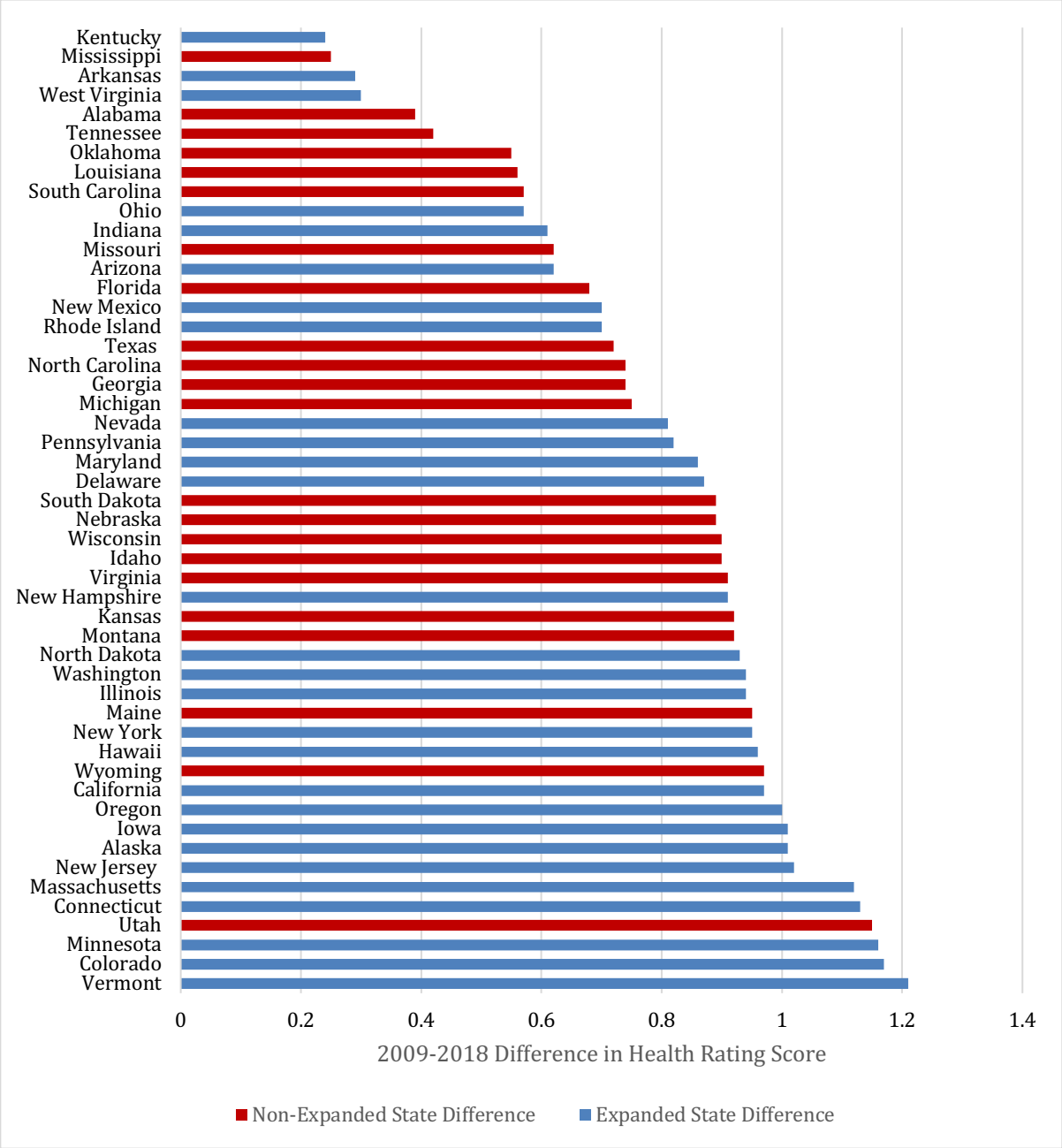


Hypothesis 2

Once coverage was analyzed, the next variable worked with was the general health ratings. This data refers back to the second hypothesis, in that we should expect to see improved health ratings for expansion states, with larger change than seen in non-expansion states. Firstly, the average health ratings of each entire state were compared, and the findings are depicted in Graph 2. Negative numbers indicate decreasing health ratings over time (meaning health is

getting worse based on self-health ratings), whereas positive numbers indicate increasing health ratings over time (meaning health is getting better based on self-health ratings). Overall, it appears that health is improving from 2009 to 2018, and most of the states with larger improvements in health are those that expanded Medicaid (except Utah, which expanded in 2020). When looking at the states with the highest changes, this trend confirms the second hypothesis; however, looking further down the chart, there are still a few expansion states that did not experience larger changes over their non-expansion counterparts. This graph depicts the variance that data often shows with Medicaid outcomes.

Graph 2: States' Health Rating Change from 2009 to 2018



Overall, expansion states had an average health score increase of 0.85, while non-expansion states 0.75. While expansion states overall had a slightly larger increase, the significance of this difference must be tested. A two-tailed independent samples t-test determined the significance of the difference between expansion states and non-expansion states; the results of the test are

summarized here: t (48) = 1.540, p = 0.130. Therefore, the difference between expansion states and non-expansion states is not significant, and such results could be replicated by random. After looking at states overall, the third hypothesis prompts further specification of the analysis by income.

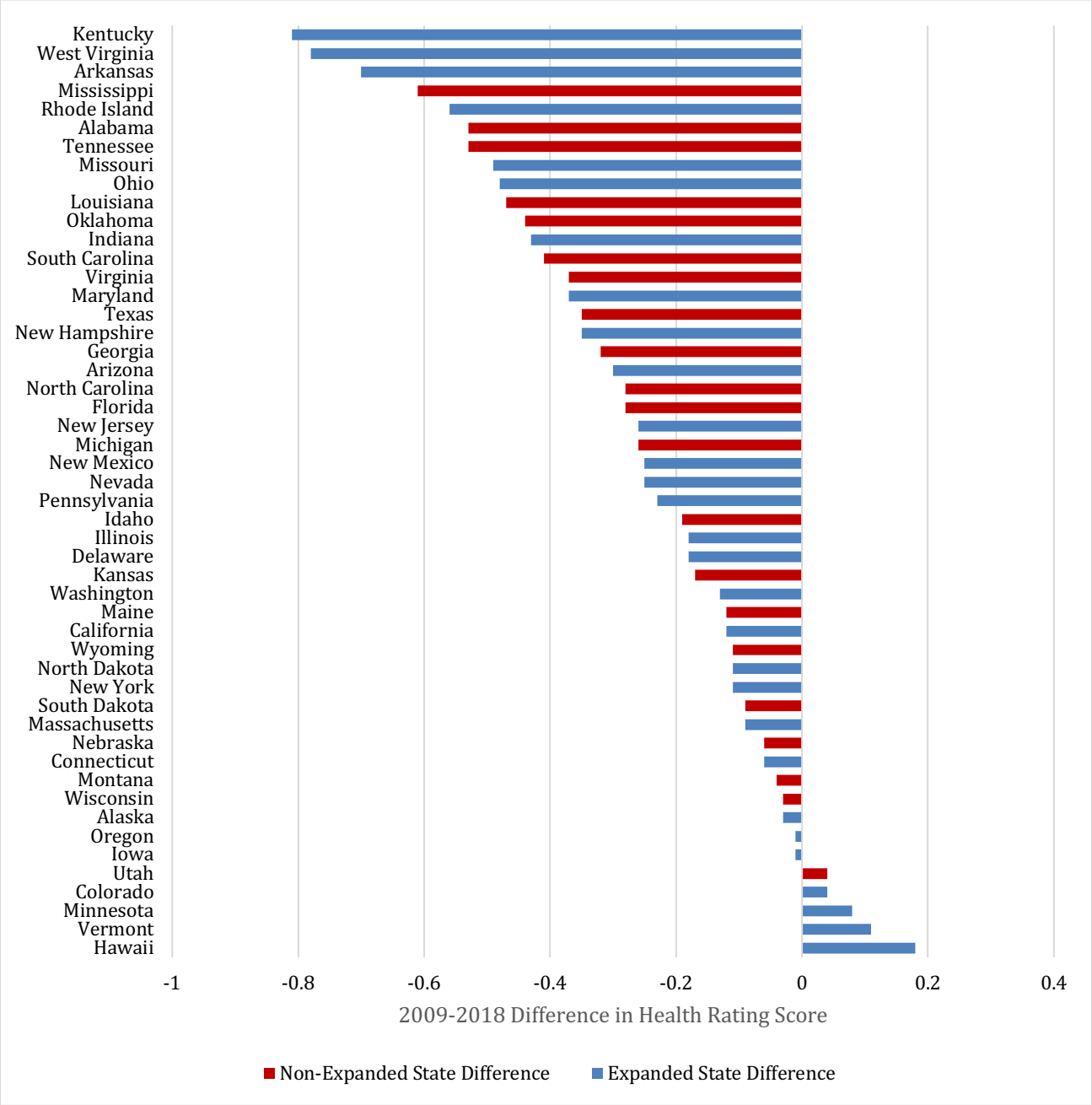
Hypothesis 3

Income is an important independent variable, as Medicaid eligibility is entirely based on income and assets. The BRFSS's scope of income is quite narrow, but it can still be utilized to more clearly depict a relationship between expansion and health since health improvements are expected in those low-income populations who have gained more access through redefinition of eligibility. Each individual income group by state were analyzed first, and the findings are summarized here. In every income group, regardless of expansion status, health ratings declined with the most significant declines occurring in the highest income levels. The only exception to this finding is in the lowest income level (those who earn less than $10,000 a year), and in this grouping, both expansion and non-expansion states experience slight increases in their general health. Overall, health by each income group appears to be declining, which contradicts earlier findings; next, the data was stratified further to see if that makes this picture clearer.

In order to simplify the findings, the income variable was further stratified by those at 138% of the poverty line (and therefore Medicaid eligible) and then those who were above this distinction. Graph 3 and Graph 4 below depict the findings of those defined as in "Poverty" and those defined as "Non-Poverty," respectively. As is depicted in the previous graphs, negative numbers indicate a decrease in health ratings and positive numbers indicate an increase. Graph 3 shows that, for those eligible for Medicaid, health ratings are overwhelmingly declining for most states. Notably, the five states that experienced the most decline in health ratings were expansion states; on the other hand, the same can be said for the four states with the most improvement in

health ratings. Beyond this, expansion status is again a mixed-bag with both expansion and non-expansion states experiencing various outcomes. The average change for both expansion and non-expansion states were extremely similar (-0.250 and -0.251, respectively), with both experiencing declines in health rating. A two-tailed independent samples t-test for the differences between expansion and non-expansion states was performed, and the results were as follows: $t(48)=.013$, $p = .989$. The differences were extremely far from significant, indicating that any differences between the two groups were negligible.

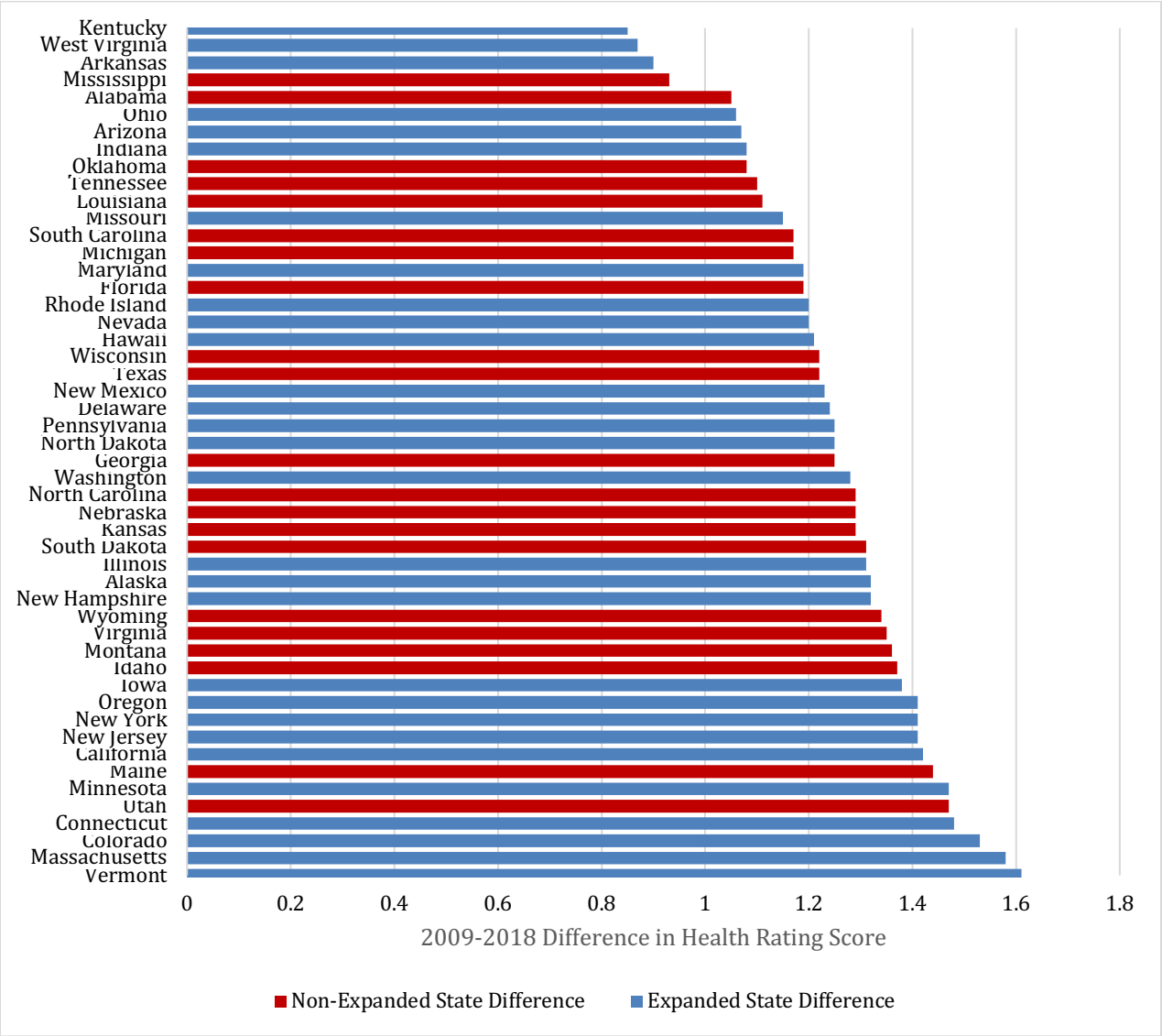
Graph 3: Average Health Rating Change over Time for "Poverty"



In Graph 4, it is clear that those above the poverty line have experience significant improvements in health rating since Medicaid expansion (despite the bill not technically applying to such individuals). Again, expansion and non-expansion states can be found at both ends of the spectrum, with expansion states experiencing both the least and the most improvements in

health. The means are also remarkably close again, with expansion states showing an average increase by 1.265 and non-expansion states increasing by 1.240. A two-tailed independent t-test shows that the differences between expansion statuses is not significant, t (48) - .568, p = .573.

Graph 4: Average Health Rating Change over Time for "Non-Poverty"



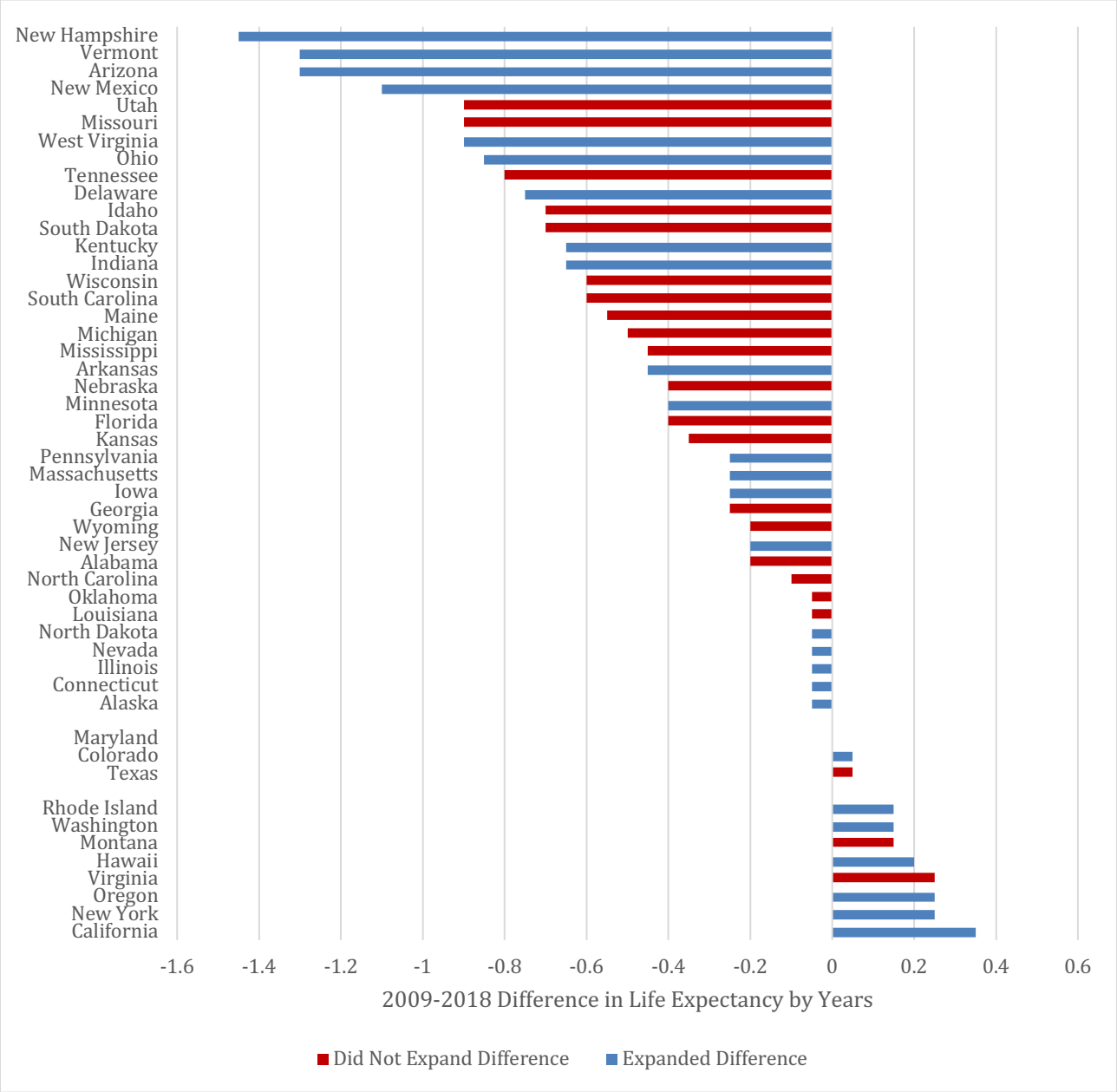
Overall, stratifying more distinctly into poverty and non-poverty has allowed for a more simplistic and clearer look into the relationship between income and health, and how that differs by expansion status. Analyzing the data by income specifically has resulted in interesting outcomes, and certainly unexpected ones given the literature review. Reasonings for these

findings will be discussed shortly, but to gain a sense of what was going on in the United States nationally, beyond the BRFSS, was the next step.

Hypothesis 4

Population life expectancy is a widely used statistic in the public health sphere, often utilized as a health indicator for countries throughout the world. With this in mind, hypothesis 4 prompts analysis of the difference in life expectancy for each state's population from 2009 to 2018. As per the fourth hypothesis, it theorized that the results will show a larger increase in life expectancy within expansion states than in non-expansion states. Similarly to the initial analysis of general health, this statistic is unable to be stratified and is organized solely by state. Graph 5 below demonstrates the trends found in each state's life expectancy, and again, it can be seen that the majority of states are experiencing a decline in life expectancy (similar to the results seen in the poverty health analysis). Expansion states can be found at both ends of the health rating spectrum, and expansion status does not seem to be impacting life expectancy in each state. This is especially seen in expansion states, as the four with the largest decreases and the three with the largest increases in population expectancy are all expansion states. The overall average life expectancy change in expansion states declined by 0.343 years, while non-expansion states' average life expectancies had a larger decline of 0.375 years. This graph defies what was mentioned in the literature review, and interpretations of the results will be discussed in the next section. One final independent samples t-test again shows the differences in expansion statuses as not significant, t (48) = .266, p = .792.

Graph 5: Life Expectancy Difference by State from 2009 to 2018



This data analysis has shown that, while the literature review demonstrated general health improvements and better health outcomes as a result of Medicaid expansion, the BRFSS has demonstrated that Medicaid may not be having such significant health outcomes as believed. Discussion of how this may be the case, as well as potential limitations of this data analysis, is summarized in the next section.

Discussion

The findings of this data analysis are not shocking, as the literature review found that Medicaid expansion's impact on health outcomes is quite a mixed bag. While the BRFSS showed health ratings mostly increasing in each, population life expectancy told a different story. Similarly, while non-poverty populations' health greatly improved, those under the poverty line experienced large decline of health ratings (despite Medicaid expansion targeting such populations). Overall, each of my hypotheses expected to see large increases or improvements within expansion states, but this was not the case within the data. Despite stratifying to target subsets of the population that should be most impacted by Medicaid expansion, the results were still highly varied and did not show a strong relationship with expansion status. While such results are understandable given the literature's overall designation that Medicaid expansion's impact is not overwhelmingly clear, it certainly begs the question of why we are seeing such results.

There are many reasons as to why these results showed such trends. One potential reason for this may be that each state is considered to be an individual actor comparable against other states, but there are many aspects within each state that may lend it to certain results. Firstly, the binary descriptor of Medicaid expansion allows for simplification but may miss some important data. For example, states like Montana and Louisiana expanded in early 2016, but were coded as non-expanded as the cut-off year was 2015; however, depending on Montana and Louisiana's implementation of Medicaid, they may have been able to quickly implement Medicaid expansion and improve health outcomes for their low-income populations. Simply agreeing to expanding Medicaid is the crucial first step that 13 states have failed to do and continue to this day to be non-expanded. However, implementation of the law plays a large role in this process, and requires further analysis to see the intricacies of such implementation. Another aspect of this is

the timing of their expansion and subsequent implementation. The first state to expand Medicaid under the ACA was Connecticut, immediately signing on in 2010; other states characterized by "expanded," such as Alaska, signed to expand Medicaid in late 2015. This five-year difference between the two states results in more questions of timing: does point in time of expansion matter? How many years does strong implementation take, and what other factors play into implementation of expansion? These questions are important, and could be utilized in further analysis in the future.

Reflecting on these findings more generally, it is important to understand the nature of Medicaid. Despite its best intentions, Medicaid as a program is not always perceived by those eligible as a great savior for their health. One example of this can be seen as a practical issue; often times, those eligible for Medicaid may not enroll until they have already been diagnosed with illness or have been injured. The literature review describes how Medicaid enrollment is an intensive process, making it difficult for those eligible to enroll. While the ACA did reduce some of these barriers (e.g. those at 138% of the poverty line are not required to have children), enrolling in Medicaid is still an extremely arduous process that many may not partake in just because they are eligible. Rather, they may never enroll until they are forced to due to health concerns; this, therefore, impacts the results of this data analysis by their health being worse despite having more coverage. In addition to this practicality, there are still many societal barriers in the process such as stigma, access to necessary documentation, and other inequitable barriers.

As explained in the literature, stigma plays a large role in Medicaid enrollment. While those eligible may wait to enroll until absolutely necessary, many of those eligible do choose to enroll from the outset. However, their experiences are often extremely negative. Many testimonials and studies conducted have shown that the majority of respondents within such

studies who receive Medicaid have experienced feelings of stigma and felt that it was a major deterrent to Medicaid enrollment. This may contribute to the poor health outcomes within expansion states, in that Medicaid expansion does not directly translate to increased enrollment or improved health. This is an extremely important finding, as Medicaid is a major source of coverage for low-income populations within the United States. In order to understand why Medicaid is not successful in lowering health inequities or improving health outcomes, we must look at the relationship between the legislation and the implementation, as this study has shown that it is not as simple as one would hope it to be. More health care coverage does not equate to better health outcomes overall, and that is critical for future health policy considerations within the United States.

In summary, the results of this data analysis are not surprising, but potentially disappointing nonetheless. While the Affordable Care Act is complex and difficult to understand as a policy, Medicaid itself has had a great impact on the health of those eligible since its inception. Despite this, the results of this study have shown that simply expanding Medicaid does not result in stronger health outcomes overall within each state. There is a lot of work to be done in the implementation of expansion, and beyond this, on making health more equitable overall for vulnerable populations that can be identified through social determinants of health (such as race, age, gender, socio-economic status, and more).

Conclusion

This paper investigated the inner workings of the ACA and what impact it had on health outcomes across the country. Historically, Medicaid has improved health outcomes for vulnerable populations generally, depending on the nature of its expansion. Despite this, health status continues to fluctuate, and many in the public health realm find that social determinants of health continue to play a larger role as time passes. While Medicaid eligibility is based solely on

income, other factors such as race, gender, and socioeconomic status play large roles in determining one's health status. The relationship between race and Medicaid historically, for example, is a difficult one as the literature review details. Medicaid also has an impact on institutional costs and each state's structure of healthcare, but is again dependent on the state's implementation. This investigation into Medicaid and the subsequent health outcomes within the affected populations has offered an important contribution to the existing literature surrounding Medicaid expansion's impact under the ACA. Despite the seemingly directionless results, the variance amongst expansion and non-expansion states directly conflicts the conception that Medicaid as a program is overwhelmingly successful. While the program has improved health for many, the ACA's rendition of this program has not shown such success. This analysis also prompts further research, both in replicating this study and in developing further questions and hypotheses.

What Next?

The data analysis performed in this paper has provided important information that prompts further questioning. In terms of research, further analysis would include specific variables as they relate to Medicaid, such as what kind of coverage one has; while newer surveys include such questions, looking back in time presents difficulties in the quality of questions asked. In addition, health is a difficult concept to measure. Self-rated health is often utilized, but other measures are worth exploring; many studies focus on specific diagnoses and health measures, so further analysis that utilizes a variety of health measures is invaluable. Finally, in a perfect world, such surveys would involve participants that succeed in responding to the majority of the questions; unfortunately, the BRFSS works with a lot of non-response bias, so additional analysis should look towards other surveys for more complete analysis. Overall, this paper has provided a strong foundation for further analysis into the impact of Medicaid on the population.

This analysis also prompts one to question how to move forward legislatively. Today, health care systems and practices differ greatly from country to country, and many in the United States call for universal healthcare. However, this analysis has offered insight into government subsidized healthcare and its implementation; so much of this process depends on the states, and it is here that decentralization of government may play a very large role in the health of the population. Federalism as a whole greatly impacts the success of policies created on the federal level with state-specific implementation; such discrepancies are not only seen within health policy, but across the board. While a federal bill, the Affordable Care Act may have been greatly impeded the prospect of successful expansion by the SCOTUS *National Federation of Independent Business v. Sebelius* which allowed states to opt out; regardless, both expansion and non-expansion states alike have had both health improvements and health declines as shown through the data analysis, so no significant results have occurred in either direction. This lends itself to the question if Medicaid truly works, or if it is just an extremely complex and difficult process that those eligible may not even enroll in. This paper has offered an important insight and has built on existing literature to identify the impact of Medicaid on health outcomes; with this in mind, one must next question the relationship between Medicaid legislation and the subsequent implementation as a result of both societal struggles and government structure.

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