Medicaid Expansion and its Effect on Children's Health

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Abstract

This study examines the impacts on quality of life and overall health outcomes of low-income infants, children and adolescents. The main goal of this study is to determine if states that followed the ACA expansion with an increased Medicaid budget showed signs of positive improvements to the health outcome variables tested. The study uses the difference indifference model to test this hypothesis.

This study will look back over the previous 10 years from around 2010 to 2019 for its data and variables. The study will use variables for each of the 50 United States such as, infant birth rate, infant death rate, smoking rate of mothers, percentage of single mother income, drug overdoses, children poverty rate, percentage of white and Hispanic populations by state, and vaccine rate.

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I. Introduction

Created in 2010 the affordable care act (ACA) was a comprehensive healthcare law used to assist and improve many facets of the medical and care industries. Signed by President Obama in March of 2010 is commonly referred to as Obamacare. ACA was used in conjunction with Medicaid to improve the lives and care of millions of Americans. The ACA attempted to reduce the amount that families and individuals had to pay into uncompensated care. The ACA has 3 main goals, make affordable healthcare, expand Medicaid to cover more people with lower incomes, and to support medical care to be delivered in methods designed to aid and assist the lowering of costs to low-income families and individuals (Healthcare.gov, 2021).

Medicaid was originally signed into law in 1965 by President Lyndon B. Johnson. It included two portions, Part A for hospital insurance and Part b for Medical. Originally, Medicaid only covered a certain portion of people. Now, it covers much more, including low-income families, pregnant women, people of all ages with a disability, and people who need long term care. States will often tailor their programs to best serve its people. This makes each state's Medicaid program unique, possibly better than others when compared. (CMS, 2020).

ACA was brought into the marketplace in 2010 and created a single location where consumers could apply and enroll in private healthcare plans. The ACA program created new avenues for testing and delivering healthcare to many in need. It also became better coordinated in ensuring the people who utilized Medicaid received more quality services compared to care prior to the implementation.

Though things have changed significantly over the last 55 years, Medicaid has always been implemented as a way to protect healthcare for everyone. As the program aged more was added

and improved upon and it eventually became the program we know today. Medicaid has transformed the nation's healthcare in many positive ways.

When the expansion of the ACA occurred, many states increased their budget of the Medicaid program. Often times budget is a huge constraint when it comes to improving care and access to important necessities. Healthcare is required to have by law. There are significant penalties if an individual or family tries to forego a healthcare plan. With healthcare being required and penalties resulting if not this meant many issues for low-income earners who might not have the budget to allow for such a plan. Since this law affected so many Americans the ACA is helpful in making care more manageable for the lowest earners in the country.

The transition of the ACA expansion started in 2014 at the first of the year. Many states chose to expand during this year. Other states chose to expand later. Some states still have not yet expanded as of the 2020 year. For the purpose of this project the cutoff time for the treatment group will be states that chose to expand in 2014.

The requirement of having all Americans enroll for insurance may show an improvement in the quality of life of young children enrolled. Early childhood care has a plethora of positive benefits. Often times children who receive necessary care early on are more likely to grow up into healthy adults, better educated, and contribute more to the economy. Investing in the youngest members of society will allow for a long term national economic viability. Even more so, minorities are amongst the most disadvantaged and according to a Stanford study done by Maya Rossin-Slater have the most to gain when it comes to receiving quality childhood care (Rossin-Slater , 2015). She notes that black children are the most likely to be born underweight out of all other races. According to Rossin-Slater, mothers of African American decent show around 13.3 percent of children being born with low birth weights and 16.8 percent of them

being born preterm. Both of these numbers are around 90 and 70 percent highest than that of white counterpart children, respectively (Rossin-Slater, 2015).

Children living in poverty have a unique set of care needs. Many of the children living in poverty must face challenges out of their control and that impact their development (Turner, et. Al. 2021). Malnourishment, exposure, toxins, and more all result in disrupted development. Due to these factors, regular care is very important to their overall wellbeing. Often times due to these factors many young children face developmental disorders or issues. According to Turner, et. Al. when faced with these detriments, without a major or aggressive intervention in the form of health management, many of these children will never fully catch up to their wealthier, more taken care of counterparts (Turner, et. Al., 2021).

When parents have insurance then their children will also be more likely to be insured. Medicaid expansions as part of the ACA translated into significantly higher coverages for children as a result. Thus, increasing their chances of avoiding the learning and health detriments, mentioned by Turner, when in a low income situation. Families that are low income now became eligible for Medicaid. Previously before the ACA many families that were eligible had limited choices in their insurance. Coverage varied across state lines and as a result could be better or worse. The median coverage before the ACA expansion was 61 percent for poverty line working parents and 37 percent unemployed parents according to the CBPP (Schubel, et. Al., 2020).

Due to this evidence, it is even more important to allow young children, especially those of minority decent to have access to the best care they can possibly manage. Children often do not have much say in what care they will receive as insurance costs money and infants all the way up to teenagers most likely could not afford the medical bills they would incur. If not for

better health and access to quality of life, but for a better chance at being a quality contributor to the economy. An individual who is healthier will miss less work and be able to afford more, stimulating the economy in many ways.

This project does not solely focus on minority groups but all children that fall below the poverty line. The goal of this project is to determine if the expansion of the affordable care act and Medicaid increase the quality of life, health and duration of lifespan in children and adolescents below that line. While there seems to be several studies conducted for infants, there seems to be less literature on the effects of children of all ages. This project plans to look at all children, regardless of race, that fall below the poverty line. It plans to compare states that expanded their budget of Medicaid to states that did not expand. It is hypothesized that states that expanded their Medicaid budget will see positive impacts on children's health outcomes compared to states that did not expand in 2014. It would be important to show that there are significant improvements in the states that did expand to policy makers so that it may influence the decision for other states that have not yet expanded their budget.

The remainder of this paper will be organized with the following topics. Section II contains a brief survey of relevant literature pertaining to the topic of children's health with Medicaid expansion. Section III discusses the theoretical models this paper and research will be based on. Section IV contains discussion on all data used in the project, description of the variables, summary statistics, and where the data was sourced. Section IV also discusses the T-test results. Section V discusses the regression model used and the description of the equation for the Difference Indifference model. Section VI discusses and explains all results from the correlation matrix and the regression. Section VII concludes the discussion of the project with academic findings as well as what can be improved upon in future research.

I. Survey of Literature

For many children access to healthcare is out of their control. They rely solely on their parents, guardians or families to provide for the care. A systemic review of various publications and literature published from 1950 to 2007 was used to gain insight on the disparities of children who grow without access to critical healthcare. Review of these publications showed that significant disparities arose based on race. These disparities were often on a spectrum and involved a great number of items like mortality rate, chronic disease, quality of care, organ transplant and many more (Flores, 2010).

Infant and neonatal mortality rates based on ethnic, and income have been extensively covered and described. In these studies, they identify the problems that many faces when it comes to receiving care. There were less findings on the issues pertaining to adolescents. There has been a surge in minorities in the previous years. Now, there are more than 31.4 million children under 18 who do not identify as white. This increase is more than 11 percent from 2000 (Flores, 2010)

Of these minority groups those of Latinx descent are of the largest and fastest growing group of all. It is estimated that by 2040 minorities will equal half of all children under 18 years of age. Of those minorities Latinx represent about 20 percent (15 million). Black minorities are of the second largest group equaling 15 percent of the population (Flores, 2010).

Children of minority groups are still at the mercy of discrimination. According to Carlos Gradin, the two largest minorities in the United States, African Americans and people of Hispanic origin, show official poverty rates at least twice as high as those of non-Hispanic Whites (Gradin, 2011). Even in one of the wealthiest countries there is still widespread failures in assistance for low earners.

In several different studies there is the thought that a possible solution to poverty is to increase opportunity. If this is the case then increasing the opportunity for affordable and accessible healthcare would help improve the chances of getting out of poverty. According to Lawrence Mead, poor individuals lack the same opportunities that the middle- and upper-class families have. Lack of high paying jobs in inner cities, obstacles for higher education, higher pay, health issues all stood in the way of nearly every poverty stricken individual (Mead, 3). Mead felt the way to help alleviate poverty was to increase chances of better opportunity.

This case could be used with healthcare. Medicaid expansion would lead to more opportunities for the poorest classes of America. Health affects nearly all aspects of one's daily life. If a child were to fall ill often that could result in a significant number of school days missed. If too much education is missed then they will fall behind and be at a disadvantage compared to their classmates who regularly attend. Expanding Medicaid budgets and increasing care would allow for more children to flourish. Children who receive care from an early age are afforded higher chances of having better health as adults, better education, higher wages and better contributors to the economy over all (Schubel, et. Al., 2020).

II. Theoretical Discussion

The Grossman model, which is one of the most widely used models for healthcare economics, is what this project is based on. This model assumes that health is treated as a capital stock. We can assume that that capital stock produces the output of healthy time. The individuals health is highest when younger and will depreciate over time as the person gets older. According to the Grossman model, health can be increased through "investments" like health insurance, healthy lifestyle and more. The more educated and healthier a person is, the higher the amount of healthy time they will have.

With this model in mind, we can assume the healthier a person is, the more they will be able to work, the less they will have to pay in medical care and the more time they will have for leisure. For the working poor and lower class, it is imperative to stay healthy so this "investment" is even more important for them as it can greatly improve or ruin their lives if they fall ill or not. For many parents of young children, affording their own bills on top of the medical bills a child will incur can potentially be financially devastating. A child's health can be unpredictable and "investing" in their stock is important in order for them to grow into healthy established adults.

According to the Grossman model actively participating in one's health stock can improve the duration of one's life. By expanding the affordable care act and increasing access to better quality care for vulnerable children states can help increase the duration of these children's lives. Essentially expanding the ACA and Medicaid is investing in the health stock for the children who access the program. The main hypothesis of this paper is that if Medicaid is expanded then the health outcomes will show a more positive or better outcome than that of the states that chose not to expand their Medicaid budget.

III. Data Methodology

Data for this project was sourced from multiple locations. The Kaiser Family Foundation (KFF) was an integral part of this projects success as I was able to procure multiple notable variables from their data sets. Of these data sets from KFF I found race population percentages (white, Hispanic and black), smoking rate, drug overdoses, and children's poverty rate percentages. Medicaid expenditure was sourced from MACPAC publications where the budget amounts related to the Medicaid expansion program was released. Data was pulled from the files to be used to test along with other variables. In order to correct the Medicaid budget to fit a per

capita amount I sourced data from Census.gov where I found populations for each stat for the years 2010 to 2019. Then the Medicaid budget was divided by the population to get the per capita spending amounts. Unemployment rate was taken from the Bureau of labor statistics Vaccine rate and Single mother income status were sourced from the CDC. The variables for Death rate of infants and Birth Rate of infants (per 1000) were sourced from the World Bank and UNICEF.

There were several issues with finding useful data. The main struggle was being able to find data for all 50 states. This proved to be very challenging as many data sets were incomplete or for only one year rather than a ten-year timeframe. Since there were limited variables that were available a few had to be omitted later on due to lack of observations and missing years. One of these variables that had to be omitted was the percentage of Black population for each state from 2010 to 2019. Life expectancy at birth also was omitted due to no data being available for before 2014 so as a result a t-test could not have been run to test for significance. The data sets that were gathered were then used to test against health indicator variables and Medicaid spending per capita to determine if the budget increase was justified or not.

Table 1 *List of variables used in the analysis, definitions, and sources*

Variable	Variable Definition	Literature Support
Medicaid spending (Per Capita)	Medicaid spending per capita budget by state. (Spending in millions) Medicaid spending was divided by total state population to get the per capita amount.	MACPAC, 2020; Census, 2021
Birth rate	Rate of births per state per 1000 people	World Bank, 2018
Death rate	Rate of deaths per state per 1000 live infant births	UNICEF, 2020
Smoking rate	Rate of women who report smoking per 1000 people	KFF 1, 2021
Vaccine rate (kindergarten)	Rate in which kindergarten age children are reported being vaccinated. Average of all vaccines given.	CDC, 2021
Unemployment	Unemployment rate of all Americans	U.S BLS, 2021
Single mother	Percentage of mothers and pregnant women who report being unwed or without a second income	CDC, 2021
Drug overdose rate	Death Rates are deaths per 100,000 population (age-adjusted). Overdose rate is determined by multiple variables	KFF 2, 2021
Population distribution (by race)	Distribution of all White and Hispanic races in each of the 50 US states. (Percentages of total population)	KFF 3, 2021
Poverty Rate by age	Distribution of all age groups that fall in the poverty level. Ages 0-18. Percentage of total population	KFF 4, 2021

Notes: *Vaccines include the following: MMR, DTaP, Varicella (1 and 2), Hepatitis B, and Polio.*
Data sources: Macpac, 2020; World Bank, 2018; UNICEF, 2020; KFF (1,2,3,4) 2021, CDC, 2021; U.S. BLS, 2021.

Table 2. *Descriptive Statistics*

Variable	Mean	Std Dev	Sum	Minimum	Maximum
Medicaid Spending (Per Capita)	1783.00	4130.00	891487.00	71.51	91749.00
Birth Rate	62.56	6.46	18768.00	47.20	80.90
Infant Death Rate	5.94	1.21	1782.00	0.00	9.30
Smoking Rate (Percent)	15.88	37.83	55.43	6.0	27.0
Unemployment (Percent)	5.57	2.12	2478.00	2.20	13.50
Single Mother	39.30	6.89	11791.00	18.50	54.90
Drug Overdoses	17.85	8.40	8905.00	2.80	57.80
Vaccine Rate	76.68	7.20	36268.00	0.00	87.62
Race White	70.0	16.0	349.48	20.0	95.0
Race Hispanic	11.0	10.0	57.15	1.0	50.0
Children Poverty Rate	19.0	5.0	94.75	7.0	34.0

Data sources: Macpac, 2020; World Bank, 2018; UNICEF, 2020; KFF (1,2,3,4) 2021, CDC, 2021; U.S. BLS, 2021.

Descriptive statistics of the mean standard deviation, sum, minimum and maximum can be seen in Table 1 above. Table 1 lists the variables, their descriptions including how they were sourced and if they are based on percentages, populations, etc.. Variables are for each of the 50 US states from the years 2010 to 2019.

Several variables have a large difference between their minimums and maximums. It is interesting to note the large differences in the minimum and maximums for the Medicaid spending per capita. This shows that in areas where budget and costs are high they care can become very expensive and in areas with few people it can seem cheaper than other states. The variable for Drug Overdoses also shows a very vast difference between the minimum and maximum. In the state where overdoes is the lowest it is 2.8 per every 100,000 people and almost 59 per every 100,000 people.

The percentages of total white population, as well as the Hispanic population has large differences based on the statistics above. These variables can be used to see where minorities are most densely populated. The state with the highest Hispanic population has 50 percent (lowest 1 percent) of the total population. Along with that the state with the highest white population is 95 percent. The lowest white population was 20 percent. These variables could be used to determine if states that show a significant improvement in health from Medicaid expansion impacted the states with higher Hispanic populations more versus the white population.

The table below indicates t-test results run for all states pre 2014 expansion. Table 3 lists all variables that were a part of the t-tests. The t-tests were run to determine if any of the variables showed any signs of statistical significance to determine if there was a need to run a parallel trend test or not. Of all variables tested there were three that came out with a statistical significance of 0.1, which were Infant Death, Race White, and Drug Overdoses. Since so few

came out as statistically significant, and due to time constraints, no parallel trend test was conducted for these variables.

There were no large differences in any of the variables. The larges difference could be seen in the Medicaid Spending per Capita, however even that was not large enough to warrant the parallel trend test. Most differences between the treatment and control group were so minor that it was safe to say the two groups were comparable enough that the DiD model could be run safely without bias or issue. It is also important to note, the variable Single Mother had to be omitted from the results as the data set did not have enough data prior to 2014 to run the t-test properly.

Table 3 *T-test Analysis Results*

Variable	Treatment	Control	Difference
Medicaid Spending (per Capita)	7466	9097	-1631
Birth Rate	65.59	62.15	3.43
Infant death	6.4	5.6	.8*
Smoking rate	0.175	0.171	0.0038
Unemployment	6.9	7.45	-0.54
Vaccine rate	68.27	68.85	-0.58
White	0.68	0.73	-0.049*
Hispanic	0.11	0.102	0.0147
Drug Overdoses	13.12	14.81	-1.68*
Children Poverty rate	0.21	0.2	0.0135

Data sources: Macpac, 2020; World Bank, 2018; UNICEF, 2020; KFF (1,2,3,4) 2021, CDC, 2021; U.S. BLS, 2021.
*Significance values: *p<.1,**p<.05,***p<0.01*

IV. Empirical Methodology

This study plans on using a difference indifference (DiD) model for this paper. The DiD model will be used on the two categories of states, those that expanded and those that did not. The treated results of the two groups will then be tested against several variables and determinants of health to determine if expansion of Medicaid has improved the quality of life and life expectancy or not in the states that expanded in the 2014 budget increase.

Below you can see the basic equation that will be used to test my variables against the expanded and non-expanded states. Variables on the left will be health outcome variables and variables on the right will be the variables that could influence health outcomes, such as, smoking, race, poverty, drug overdoses, and unemployment. There will be four health indicator variables tested against the independent variables. The variables are explained more in depth below.

a. Equation 1.

$$\mathbf{Y_{it}} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1}\mathbf{Treatment} + \boldsymbol{\beta_2}\mathbf{After} + \boldsymbol{\gamma}(\mathbf{Treatment} * \mathbf{After}) + \mathbf{X}_{\boldsymbol{it}} + \mathbf{E_{it}}$$

Y equals the health indicator variables that will be tested in the model to determine if Medicaid expansion improved health for children or not. They will be used to test for any improvements and changes between the states that chose to expand during the first of January in 2014 compared to those that did not expand at that time. The indicator variables include Birth Rate, Infant Death rate, Vaccine rate, and Medicaid Spending (per Capita). i is the expected mean of the variable at time t.

Treatment is an indicator variable for states that expanded their Medicaid budgets in the 2014 year. States coded as 1 are states that expanded. States coded as 0 are states that chose not to

expand in 2014. After is the indicator variable for states showing the years after the 2014 period whether the observation belongs to the expanded group or non-expanded group in the post treatment.

The third variable, interaction is the interaction of the two previous variables, treatment and after, showing the DiD for the regression model. This then becomes the DiD estimator that will be the estimator of the impact of the expansion on the health indicator variables used in the model. X represents all control variables in the model that are observed for state i in year t. The control variables are Unemployment, Smoking Rate, Race White, Race Hispanic, Drug Overdoses, and Children Poverty Rate. E is the error term.

V. Results

As you can see from the correlation matrix, in table 4 below, overall, most variables have a low correlation between each other. The only variables that seem to have some correlations are smoking rate and infant death. This may be due to the negative health effects associated with smoking. Smoking is one of the leading causes of SIDS, or Sudden Infant Death Syndrome, where another wise healthy infant can die of sudden, unforeseen causes (CDC, 2020). If a mother smokes while pregnant she can pass the issues down to her child which could result in death or other major complications in the first year of birth. The numerous issues from spoking during gestation could result in the correlation between smoking and infant deaths, which causes around 1000 infant deaths per year (CDC, 2020).

The DiD was run using 4 models, one for Medicaid Spending per Capita, one for Infant Death Rate, Birth Rate, as well as Vaccine Rate. These dependent variables were tested to determine if there were any significant improvements to children's health outcomes that were

from the Medicaid expansion. Table 5 shows the regression results for all 4 models created from the DiD.

Based on Table 5, it seems as if most results were statistically insignificant. There were only a small handful of variables that showed significance in any of the models. Of the statistically significant models, model 1 (Medicaid Spending per Capita) only showed a statistical significance with the Drug Overdoses variable. This variable had a significance of 0.1. Though, based on these results it seems as if the drug overdoses increased based on Medicaid expansion which could be due to the fact that this data used was for people of all ages, genders, and ethnicities. Since this is the case this may be why the results show an odd report. The resulting increase may have no real relation to the Medicaid expansion and instead could be from something completely unrelated to this project.

For Model 2, which was tested the birth rate variable against the independent variables, there was no variable that had statistical significance at all. These results surprised me as I would have predicted that as Medicaid expansion happened and better access to care birth rates would have been more affected than the results show. I feel that with access to more medical options and care birth rates would have increased since more lower income families or individuals would feel safe enough to have a child without worry of incurring high debt due to pregnancy care, hospital bills, and other childbirth expenses.

Infant death rate, which was Model 3 only had one variable, Smoking Rate, with statistical significance at the 0.01 percentile. As mentioned in the paragraphs above this is could be due to the negative health effects associated with smoking while pregnant, if the mother did so with child. No other variables were statistically significant in this model.

Model 4, which used the Vaccine rate of kindergarten aged children also only had one variable with statistical significance, which was Race White. This variable had a negative trend and showed that vaccine rates went down amongst the white population when Medicaid expanded. Despite these results, I feel there may be some issue that is happening with the data as there were a few states in the data set that failed to report their vaccine amounts and had to be omitted which if they had included could have influenced this data differently.

Despite the lack of many statistically significant results, it is still important to look into the results that are produced. Medicaid expansion has had many positive impacts on the millions of eligible people it has assisted. However, based on the results of this study, Medicaid may just not influence enough to say with confidence that quality of health and life is increased for children due to the budget increase.

Table 4 *Correlation Matrix*

	Medicaid Spend Per Capita	Birth Rate	Infant Death Rate	Smoking Rate	Unemployment	Drug Overdoses	Vaccine Rate	Race White	Race Hispanic	Children Poverty Rate
Medicaid Spend Per Capita	1.000	-0.46	-0.202	-0.037	-0.224	0.027	0.046	0.002	0.008	-0.037
Birth Rate	-0.462	1.00	0.252	0.149	0.032	-0.424	-0.002	0.0001	0.036	0.046
Infant Death Rate	-0.202	0.25	1.000	0.560	0.056	0.037	-0.043	0.011	-0.008	-0.112
Smoking Rate	-0.037	0.14	0.560	1.000	0.206	0.179	-0.114	0.106	-0.064	-0.104
Unemployment	-0.224	0.03	0.056	0.206	1.000	-0.247	-0.039	0.044	-0.046	-0.025
Drug Overdoses	0.027	-0.42	0.037	0.179	-0.247	1.000	0.092	0.032	0.008	-0.016
Vaccine Rate	0.046	-0.002	-0.043	-0.114	-0.039	0.092	1.000	-0.09	0.052	0.001
Race White	0.002	0.0001	0.011	0.106	0.044	0.032	-0.090	1.000	-0.662	-0.256
Race Hispanic	0.008	0.03	-0.008	-0.064	-0.046	0.008	0.052	-0.66	1.000	0.166
Children Poverty Rate	-0.037	0.04	-0.112	-0.104	-0.025	-0.016	0.001	-0.25	0.166	1.000

Data sources: Macpac, 2020; World Bank, 2018; UNICEF, 2020; KFF (1,2,3,4) 2021, CDC, 2021; U.S. BLS, 2021;

Table 5 *Regression Results for Medicaid Spending Per Capita, Birth Rate, Infant Death rate, and Vaccine Rate*

	Model 1 *Medicaid Spending Per Capita*	**Model 2** *Birth Rate*	**Model 3** *Death rate*	**Model 4** *Vaccine rate*
Variable				
Intercept	1057.70	63.34	3.95	3.95
	(348.38)	(4.32)	(0.73)	(5.53)
Interaction	296.60	1.24	0.17	0.17
	(156.03)	(1.93)	(0.33)	(2.48)
Treatment	293.10	-2.86	-0.73	-0.73
	(140.64)	(1.74)	(0.29)	(2.23)
After	77.28	-0.50	0.11	0.11
	(125.94)	(1.56)	(0.26)	(2.00)
Smoking Rate	-253.57	41.63	16.55***	16.55
	(885.80)	(10.98)	(1.85)	(14.05)
Unemployment	-2.10	-0.37	0.0006	0.0006
	(27.70)	(0.34)	(0.06)	(0.44)
Race White	-43.86	0.39	-0.63	-0.63*
	(251.65)	(3.12)	(0.53)	(3.99)
Race Hispanic	-467.79	1.30	0.50	0.50
	(397.10)	(4.92)	(0.83)	(6.30)
Drug Overdoses	13.95*	-0.32	0.0017	0.0017
	(3.76)	(0.05)	(0.01)	(0.06)
Children Poverty Rate	341.36	6.49	-0.51	-0.51
	(600.57)	(7.45)	(1.26)	(9.53)
Observations	552	552	552	552
R-Squared	0.4	0.2725	0.3684	0.0947
Adjusted R-Squared	0.378	0.2408	0.341	0.0553
F Statistic	15.61	8.61	13.42	2.4**

Data sources: Macpac, 2020; World Bank, 2018; UNICEF, 2020; KFF (1,2,3,4) 2021, CDC, 2021; U.S. BLS, 2021;

Note: Standard deviation in parenthesis

*Values: *p<.1,**p<.05,***p<0.01*

VI. Conclusion

In conclusion, there seems to be little significant evidence to prove whether or not there was a positive improvement from the Medicaid expansion. Along with my variables producing insignificant evidence there are other sources that also show results where there is negligible improvement in overall quality of health for children when there is more accessible health care for the most marginalized members of society.

From one study there was evidence that other programs proved more beneficial than the Medicaid expansion like WIC, various medical interventions (vaccines), and early childhood care and education (Rossin-Slater, 2015). Another study conducted by Brown, et. Al. that there was little significance in the improvement of lowering the rate of preterm and low birth weight babies based on Medicaid expansion. According to Brown, et. Al. there were larger improvements if based on race, but they weren't strong enough to say with certainty (Brown, et. Al., 2019).

So, based on this, there is are probably certain areas that Medicaid is extremely beneficial, but those areas are outside of the scope of this research. Improvements could be made to this project with more time and research. The biggest constraint was lack of data available for the individual 50 states for all years between 2010 and 2019. When data was collected there were issues with insufficient years being included in some data sets which could have resulted in bias and issues with my regression results. Omission of incomplete variables may be part of the reason that results have proven insignificant.

Along with the above issues, some more complete data sets often had states that did not submit their results, which meant they had to be omitted as well, yet again shifting the results.

There were very few variables that were available for 2020 so that year of data had to be dropped in the final results. I feel an increase in the number of relevant dependent variables to test against the independent variables for the groups would also help determine if the Medicaid expansion after 2014 was beneficial or not. For many of my variables I felt there were many possible alternatives that could have been studied but just lacked enough public data to use. Some variables that I would have liked to add were infant birth weight or life expectancy at birth, both of which had data only at a national level or not enough years of data at a state level to run the t-tests and DiD model correctly.

As stated previously, children and young adults are at the mercy of their parent or guardian to provide care for them. Often times children cannot afford healthcare on their own. Parents may at times be unable to provide this care to their children as well. Although there seems to be little improvements from the expansion we can clearly see there is still a long way to go. Perhaps an optimized healthcare system where all are equally able to participate is the solution. Or maybe a program that reaches all people in need, free of requirements. Maybe a shift in focus and increasing the budget for programs that do show a strong benefit for others would be a better way to utilize funds and resources.

For now, the increase in Medicaid budget is a step forward in many ways but we may not see any conclusive results for children's health. Fitting with the programs long history, further improvements can be made in the coming years to change this. It will be a long process but a step forward, no matter how small, in the direction of healthcare for all means a chance at a better future for everyone. Not just the wealthy who can buy their way into a healthy future.

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VIII. Appendix

Sas Code:

```
proc import datafile = 'C:\Users\Pawes\Desktop\Seniorpd\datacombined.xlsx' DBMS=xlsx out = medicaid5;

run;

proc print data = medicaid5;

run;


Proc means data = medicaid5 N Mean Median CLM ALPHA = .10;

VAR MedicaidSpendpcap BirthRate Infantdeathr Smokingr Unemploy SingleM DrugODs VaccineRate Racewhite racehispanic childrenpovertyrate;

run;


proc summary data = medicaid5;

run;

ods trace on;

Proc corr data = medicaid5;

VAR MedicaidSpendpcap BirthRate Infantdeathr Smokingr Unemploy SingleM DrugODs VaccineRate Racewhite racehispanic childrenpovertyrate;

run;

proc reg data = medicaid5;

model MedicaidSpendPcap birthrate infantdeathr vaccinerate = interaction treatment after smokingr unemploy racewhite racehispanic drugods childrenpovertyrate;
```

```
title 'regression results analysis';

run;

data pre2014;

set medicaid5;

treatmentyear = treatment*year;

where year < 2014;

run;

Proc ttest Data = pre2014;

Class Treatment;

Var  MedicaidSpendPcap BirthRate Infantdeathr Smokingr Unemploy SingleM vaccinerate
racewhite racehispanic drugods childrenpovertyrate;

Run;

proc reg data = pre2014;

model Medicaidspendpcap birthrate infantdeathr vaccinerate = treatmentyear treatment year;

run;
```