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The Effect of Medicaid Expansion on Heart Attack Mortality

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THE EFFECT OF MEDICAID EXPANSION ON HEART ATTACK MORTALITY

by

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ABSTRACT

The aim of this study is to estimate the effect of Medicaid expansion on the number of deaths from heart attacks using a difference in differences model. We modified the standard difference in differences framework to by including both state and year fixed effects to account for the fact that states expanded Medicaid at different times. Furthermore, we added state specific linear time trends as well as state unemployment rates as controls to test the robustness of the model. We obtained our data from the Center for Disease Control's Underlying Causes of Death Database. We found that Medicaid expansion had a statistically insignificant effect on heart attack mortality which would imply that Medicaid expansion did not affect heart attack mortality.

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CHAPTER 1

INTRODUCTION

According to the Center for Disease Control, every 40 seconds someone has a heart attack. A heart attack, also known as a myocardial infarction occurs when the heart muscle is deprived of blood flow. The greater the time it takes for treatment to restore blood flow, the greater the damage to the heart muscle ("Heart Attack Facts & Statistics", 2017).

The main cause of a heart attack is the buildup of plaque in the coronary arteries, which supply blood to the heart, causing them to narrow over time. Another cause of heart attacks is a spasm of the coronary artery that stops blood flow to part of the heart muscle. A heart attack can lead to a myriad of complications including damaged heart valves, abnormal heart rhythms, heart rupture and heart failure which can be fatal ("Heart Attack Facts & Statistics", 2017). There are many risk factors that make individuals more susceptible to heart attacks. These include diabetes, high blood pressure, high blood cholesterol, and obesity ("Heart Attack - Symptoms and Causes", 2018). A lack of access to health insurance can also make individuals more susceptible to heart attacks. For example, studies have shown that the uninsured are less likely to be screened for heart attack risk factors such as diabetes, hypertension, and high cholesterol. Even when diagnosed, treatment and control of these conditions is worse for the uninsured.

This is because research has shown that uninsured individuals who suffered a heart attack received less aggressive care and have higher in hospital mortality rates than individuals with insurance. Furthermore, studies have shown that adults without access to health insurance are more likely to die after a heart attack than adults with insurance (National Research Council, 2009).

Millions of Americans who cannot afford private insurance rely on Medicaid. Created in 1965, Medicaid provides highly subsidized insurance to low income individuals who are unable to afford private insurance. Medicaid is jointly run by the federal and state governments, giving states the discretion to set eligibility rules and budgets. As a result, Medicaid coverage and eligibility vary from state to state. The federal government helps states finance Medicaid by matching state expenditures. In addition, the government sets minimum levels of eligibility and coverage (Medicaid: Changes Under the Affordable Care Act, 2017).

According to the American Heart Association and the American Stroke Association 53% of individuals with Medicaid have a history of heart disease ("Critical Coverage for Heart Health: Medicaid and Cardiovascular Disease", 2012). Access to Medicaid has many benefits. For example, studies have also shown that Medicaid beneficiaries are twice as likely to take their medication appropriately compared to the uninsured. Additionally, individuals with Medicaid are more likely to have their blood pressure under control than those without health insurance ("Critical Coverage for Heart Health: Medicaid and Cardiovascular Disease ",2012In 2010, Congress passed the Patient Protection and Affordable Care Act also known as Obamacare with the aim of increasing access to health insurance to the uninsured. One of the provisions of the Affordable Care

Act was the expansion of Medicaid eligibility to cover uninsured individuals below 133% of the poverty level, which amounts to an income of approximately $15,000 per annum. Prior to Medicaid Expansion, the federal government only required states to provide Medicaid to children, disabled individuals, pregnant women, parents of dependent children, and certain qualifying individuals over 65. Medicaid Expansion extended Medicaid coverage to childless, non-disabled, low income adults, a group not traditionally covered by Medicaid prior to the Affordable Care Act.

The Affordable Care Act required all states to expand Medicaid to all adults with income up to 133% of the FPL by 2014 or lose Medicaid funds. Several states sued the federal government over the requirement to expand Medicaid. The Supreme Court ruled that the federal government could not force states to expand Medicaid. As a result, many states opted not to expand Medicaid (Medicaid :Changes Under the Affordable Care Act, 2017).

The Affordable Care Act also required states that expand Medicaid to cover ten categories of Essential Health Benefits. These ten categories of services fall under Essential Health Benefits include the following: “ambulatory patient services; emergency services, hospitalization, maternity and newborn care, mental health and substance abuse disorder services, including behavioral health treatment, prescription

drugs, rehabilitative and habilitative services and devices, laboratory services, preventative and wellness services, chronic disease management, and pediatric services, including oral and vision care (Medicaid: Changes Under the Affordable Care Act, 2017).

Starting in 2014, Medicaid Expansion was implemented in 37 states. While many studies have been conducted to measure the effect of Medicaid Expansion on various conditions such as cardiovascular disease, diabetes, etc. we noticed a lack of research into the effect of Medicaid expansion on the heart attack mortality rate hence the motivation for our study.

Our aim is to estimate the effect of Medicaid Expansion on the number of deaths from heart attacks using a difference in differences model. We modified the standard difference in differences framework by including both state and year fixed effects to account for the fact states expanded Medicaid at different times. Furthermore, we added state specific linear time trends as well as state unemployment rates as controls to test the robustness of the model. In addition, we performed regression analyses using a lagged treatment variable and weighting the results by state year population.

We obtained our data on the heart attack mortality rate from the Center for Disease Control's Underlying Causes of Death Database. We found that Medicaid expansion had a statistically insignificant effect on heart attack mortality which implies that Medicaid expansion did not affect heart attack mortality.

CHAPTER 2

LITERATURE REVIEW

Much research has been done into the effects on Medicaid Expansion on access to health care and health outcomes. Li, Bruen, Lantz, and Mendez developed a state transmission model to represent the health events of a population from ages 25 to 64. They predicted that Medicaid Expansion would lead to 5.1% increase in the treatment rate of patients suffering from hypertension. They forecast a decrease in new coronary heart disease events by 110,000, a 63,000 fewer stroke events, and 95,000 fewer cardiovascular disease related deaths. (Li, Bruen, Lantz, & Mendez, 2015).

Courtemanche, Marton, Ukert, Yelowitz, and Zapta used difference in difference models that used the cross sectional variation in the intensity of treatment due to state adoption of Medicaid Expansion and local area uninsured rates prior to the Affordable Care Act. They found that the Affordable Care Act increased the proportion of individuals with insurance by 5.9% compared to 2.8% in non Medicaid Expansion states. (Courtemanche, Marton, Ukert, Yelowitz, & Zapta, 2017).

Rogers and Zhang used logistic regression models to analyze the 2014 Behavioral Risk Factor Surveillance System. They found that people living in states that expanded Medicaid have a lower chance of experiencing poor heart health compared to those living in states that did not expand Medicaid (Rodgers & Zhang, 2017).

Gosh, Simon, and Summers studied pharmacy transaction data from 2013 to 2015, comparing the number of prescriptions filled in Medicaid expansion versus non Medicaid expansion states before and after Medicaid expansion was implemented, taking into account the type of insurance for each prescription filled. Medications used to treat diabetes, a condition linked to an increased risk of heart attack increased by 24% and cardiovascular drugs increased by 21% (Gosh, Simon, & Summers, 2017).

Using difference in differences, Miller and Wherry compared changes in health outcomes before and after Medicaid Expansion took effect in states that did and did not expand Medicaid. They found that after the second year of implementation uninsurance rates fell by 8.2% in Medicaid Expansion states vs non Medicaid Expansion states. Rates of Medicaid coverage were increased by 15.6% in Medicaid vs non Medicaid Expansion states. In addition, they found a 3.4% reduction in patients who reported an inability to afford follow up care, 7.9% decrease in patients who worried about the cost of medical bills in Medicaid Expansion vs non Medicaid Expansion states (Miller & Wherry, 2017).

Kaufman, Chen, Fonseca, and McPhaul, examined the effect of Medicaid Expansion on the number of newly diagnosed cases of diabetes among Medicaid enrollees aged 19-64. They observed a 1.6% increase in newly identified cases of diabetes from the control period to the study period. Among Medicaid Expansion states, they observed a 23% increase in the number of newly diagnosed cases of diabetes from the control period to the study period. On the other hand, there was a much smaller increase in newly diagnosed cases of diabetes in non Medicaid Expansion states. 11,612 patients were newly diagnosed with diabetes in the control period while there were 11,653 newly diagnosed cases of diabetes in the study period. They concluded that

changes to access to healthcare among Medicare patients contributed to diabetes being tested at earlier stages (Kaufman, Chen, Fonseca, & McPhaul, 2015).

On the other hand, the results from the Oregon Experiment are more ambiguous. In 2008, Oregon expanded Medicaid based on a lottery. Two years after the lottery, researchers obtained data from adults who had been selected to receive Medicaid and from adults who were not selected. They used the random sampling of the lottery to analyze the effect of Medicaid on measures such as blood pressure, cholesterol, etc. They found that Medicaid did not have a statistically significant effect on the diagnosis or use of medication for hypertension or high cholesterol. They also measured the effect of Medicaid on the predicted 10 year risk of cardiovascular events and found that it was statistically insignificant (Finkelstein et al., 2012).

Similarly, Kaestner replicated the findings from Sommers, Long, and Baicker and presented p values for parameter estimates based on randomization inference rather than difference in differences. Randomization inference is a nonparametric method of testing the statistical significance of treatment effects. Kaestner argued that standard methods of inference are invalid in cases where there are only one of two treated states (e.g. Massachusetts, the state studied by Sommers, Long, and Baicker) and many control states. This is because standard errors of estimates using popular methods such as cluster robust standard errors may be biased causing an over rejection of the null hypothesis. Kaestner found that the Affordable Care act did not have a statistically significant effect on mortality (Kaestner, 2016).

In short, the sum of these findings suggests that Medicaid expansion has led to a decrease in the uninsured rate and an improvement in diagnosis and treatment of conditions such as hypertension, cardiovascular disease, and diabetes. This is important for our research because hypertension, cardiovascular disease, and diabetes as well as a lack of access to insurance increase the risk of a heart attack. Therefore, we hypothesize that Medicaid expansion will decrease heart attack mortality.

CHAPTER 3

DATA

We obtained our dataset from publicly available data from the Center for Disease Control's Underlying Cause of Death Database. This database contains mortality and population counts for every U.S. county. Data are based on death certificates for U. S. residents. Each death certificate identifies a single underlying cause of death as well as demographic data.

The database was queried for individuals below the age of 65 whose cause of death was an acute myocardial infarction across all 50 states in each month from 2009 to 2016. Individuals over the age of 65 were excluded because they are eligible for Medicare. Gender as well as race/ethnicity were not considered.

In addition, we obtained data from the Bureau of Labor Statistics' website on the seasonally adjusted unemployment rates for each state by month from 2009 to 2016. Seasonal adjustment is a statistical method used to measure and eliminate the influence of predictable seasonal patterns to determine how employment and unemployment changes from month to month.

We obtained data from the Bureau of Economic Analysis' website for the yearly state per capita GDP and yearly state per capita income. The database was queried for the per capita income and GDP of each state from 2009 to 2016.

Finally, we obtained data on state yearly population from the CDC Wonder Database. The database was queried for state populations from 2009 to 2016.

Table 3.1: Summary Statistics

Variable	Number of Observations	Min	Max	Mean	Std Dev
Deaths	3,728	10	262	58.99	45.71
Unemployment	3,728	3.7	11.8	7.64	1.73
State per capita income	3,728	34790	61600	44580.61	4948.514
Population	3,728	559851	3.93e+07	7748655	7266865
Number of states that expanded Medicaid as of 2016: 31					

Table 3.1 shows that in the average state, there are approximately 59 heart attack deaths among individuals less than 65 years old per month. The mean monthly unemployment rate is 7.64%. The mean per capita income of each state is $44580.61. The mean population of each state is 7748655.

Our treatment variable was constructed as a (0/1) indicator for whether the state's Medicaid income eligibility in the corresponding state-month was >= 133% of the Federal Poverty Line (FPL). If the state's Medicaid income eligibility in a particular month was below 133% of the FPL then the treatment variable was given a value of 0. If the state's Medicaid income eligibility in a particular month was above 133% of the FPL then the treatment variable was given a value of 1.

Treatment and Control states are very different. States that expanded Medicaid are observably different from non Medicaid expansion states in terms of variables that might affect heart attack mortality. Therefore we cannot simply control treatment and control states in the post expansion period because they are fundamentally incomparable. Because of this we used a difference in difference design.

Tables 3.2 and 3.3 serve to illustrate the some of the differences between Non Medicaid and Medicaid expansion states.

Table 3.2: Summary Statistics for Non Medicaid Expansion States

Variable	Number of Observations	Min	Max	Mean	Std. Dev.
Deaths	1,474	10	262	64.8019	52.05461
Unemployment	1,474	3.9	11.8	7.647286	1.285766
State per capita income	1,474	34790	56940	43557.92	4378.64
Population	1,474	559851	2.79e+07	7221911	6766677

Table 3.3: Summary Statistics for Medicaid Expansion States

Variable	Number of Observations	Min	Max	Mean	Std Dev.
Deaths	2,254	10	212	55.19698	40.61577
Unemployment	2,254	3.7	11.8	7.639618	1.97451

State per capita income	2,254	35486	61600	45249.4	5180.93
Population	2,254	674526	3.93e+07	8093118	7557763

Although both non Medicaid expansion and Medicaid expansion states have similar unemployment rates, non Medicaid expansion states had a higher average of heart attack deaths per month and lower average income than states that expanded Medicaid. Non Medicaid expansion states also have a lower average population than Medicaid Expansion states

CHAPTER 4:

METHODS

As previously stated, we hypothesize that Medicaid expansion will be negatively correlated with heart attack mortality. Our reasoning is that since Medicaid expansion has been shown to lead to an improvement in treatment for conditions such as diabetes and cardiovascular disease which are linked to heart attacks then Medicaid expansion will invariably reduce the heart attack mortality rate.

We used the difference in differences model to examine the effect of Medicaid expansion on the number of deaths from heart attacks by comparing the number of people who died in each state from 2009 to 2016. Traditionally, in difference in difference models outcomes are observed for two groups, often referred to as the treatment and control groups. The treatment group is exposed to the treatment in the second period and the control group is not exposed to the treatment at all. The average gain in the control group is subtracted from the average gain in the treatment group. This serves to remove biases due to innate differences between the treatment control groups as well as biases caused by time trends.

In our model, states that expanded Medicaid represent the treatment group while states that did not expand Medicaid represent the control group. However, since all the

Medicaid Expansion states did not expand Medicaid at the same time we deviated from the standard difference in differences setup to account for the variation in treatment timing by including time and state fixed effects.

We defined the post expansion period based on the date that each individual state expanded Medicaid. Of the states included in our analysis 26 expanded Medicaid in 2014, 4 expanded Medicaid in 2015, and 1 expanded Medicaid in 2016.

We use the following equation to estimate the model:

$$heart\ attack\ mortality_{it} = \beta_0 + \beta_1 Month_t + \beta_2 State_i + \beta_3 Medicaid_{it} + u_{it}$$

Heart attack mortality is the dependent variable. It refers to the number of people that died from heart attacks per 100,000 in the state per month. *Month* refers to month by year fixed effects. This is a dummy variable that equals 1 for a given month and 0 for every other month. *State* refers to state fixed effects. This is a dummy variable that equals 1 for a given state and 0 for every other state. By including state fixed effects we are able to control for time invariant differences across states, which reduces the chance of omitted variable bias. Likewise, the inclusion of time dummies allows us to account for location independent shocks in mortality rates.

Medicaid is a treatment indicator that takes a value of 1 if an individual state expanded Medicaid at time t (measured in months) and 0 otherwise. *Medicaid* serves as the interaction term seen in traditional difference in difference models since it takes into account both the treatment (Medicaid Expansion) and timing of the treatment.

u_{it} is an error term and β_3 is the difference in difference estimate that we are interested in. It measures the change in heart attack mortality in expansion states net of the change in non expansion states.

In addition, we added three control variables to test the robustness of our model. This is represented by the following equation:

$$heart\ attack\ mortality_{it} = \beta_0 + \beta_1 Month_t + \beta_2 State_i + \beta_3 Medicaid_{it} + \beta_4 Unemployment_{it} + \beta_6 StatePerCapIncome_{it} + X_{it} + u_{it}$$

Unemployment refers to the monthly unemployment rate of each state. It was chosen as a control variable because it is a time varying factor that may predict heart attack mortality and have a trend that overlaps with the place and timing of Medicaid expansion.

We predict that it is positively correlated with heart attack mortality. This is because individuals who are employed have access to better medical care than individuals that are unemployed. Therefore, when the unemployment rate decreases, we predict heart attack mortality will also decrease.

StatePerCapIncome refers to the yearly per capita personal income of individuals in each state. It is measured in chained 2012 dollars. State per capita income is also an indicator of the standard of living of a particular state and can be used to compare the wealth of a state with others. We believe that it is negatively correlated with heart attack mortality because people with higher incomes can afford better medical care which lowers their risk of dying from a heart attack.

X_{it} refers to state specific linear time trends for each state. It allows us to account for the exogenous change in heart attack mortality.

These controls were added to further reduce the omitted variable bias by accounting for changes in economic conditions and the linear passage of time, both of which could independently affect heart attack mortality and move along different trends in different states. Our model is estimated using Ordinary Least Squares with standard errors clustered by state to account for the possibility of correlation between error terms within state.

We decided to lag the treatment indicator *Medicaid* by one year. because we assume that the effect of Medicaid Expansion on heart attack mortality will appear with a delay. Our reasoning for this assumption is that some of the benefits of Medicaid that we discussed previously such as increased access to primary care doctors may not have an immediate effect on heart attack mortality. This is modeled by the following equation:

$$heart\ attack\ mortality_{it} = \beta_0 + \beta_1 Month_t + \beta_2 State_i + \beta_3 Medicaid_{it-1} + \beta_4 Unemployment_{it} + \beta_6 StatePerCapIncome_{it} + X_{it} + u_{it}$$

$Medicaid_{it-1}$ refers to the lagged treatment variable. It measures the change in heart attack mortality one year from time t, if Medicaid Expansion was implemented at time t.

Finally, we constructed a model that weighed the results by the yearly state population. This was done to account for the disparities in state populations which may cause states with smaller populations to have an overly large effect on our results since the estimated treatment effect is an average.

CHAPTER 5

RESULTS

The adjusted difference-in differences estimate for changes in heart attack mortality for our regression without controls is shown in Table 5.1.

Table 5.1: Effect of Medicaid Expansion on Heart Attack Mortality

	Heart Attack Mortality			
Medicaid Expansion	-0.9869	0.0457	0.0261	0.06925
	(1.0723)	(0.9375)	(0.9300)	(0.9533)
R Squared	0.1707	0.2212	0.1822	0.2225
Observations	3,728	3,728	3,728	3,728
Controls:				
State Fixed Effects	Y	Y	Y	Y
Month by Year Fixed Effects	Y	Y	Y	Y
State Specific Linear Time Trends		Y	Y	Y
State by Month Unemployment Rate			Y	Y
State per capita income				Y

Note: Standard errors appear in parenthesis and are clustered by state. Significance is at alpha = 0.05

With a coefficient of -0.9869, Medicaid expansion is shown to have reduced the heart attack mortality rate by nearly one death per 100,000 per month. However, it is statistically insignificant at the 5% significance level.

The sign of the coefficient of Medicaid becomes positive, when state specific linear trends are added to the model suggesting that Medicaid expansion led to a slight

increase in the number of heart attack deaths per month. However, it remains statistically insignificant at the 5% significance level.

When the state by month unemployment rate is added to the model, the coefficient of Medicaid remains positive but falls slightly. Unemployment is positively correlated with heart attack mortality which means that an increase in the unemployment rate will lead to an increase in heart attack rates. Both coefficients are statistically insignificant at the 5% significance level.

The coefficient of Medicaid remains positive and increases slightly when state per capita income is added to the model. State per capita income is negatively correlated with heart attack mortality implying that an increase in state per capita income will cause a decrease in heart attack mortality.

The results of our model with a lagged treatment variable are shown in Table 5.2:

Table 5.2: Effect of Medicaid Expansion on Heart Attack Mortality with a one year time lag added to the model.

	Heart Attack Mortality			
Medicaid Expansion (one year lag)	-0.5892	0.5045	0.4998	0.5510
	(1.1287)	(0.9962)	(0.9913)	(1.0121)
R Squared	0.1721	0.2207	0.2208	0.2210
Observations	3,728	3,728	3,728	3,728
Controls:				
State Fixed Effects	Y	Y	Y	Y
Month by Year Fixed Effects	Y	Y	Y	Y
State Specific Linear Time Trends		Y	Y	Y
State by Month Unemployment Rate			Y	Y
State per capita income				Y

Note: Standard errors appear in parenthesis and are clustered by state. Significance is at alpha = 0.05

With a coefficient of -0.5892, Medicaid expansion is shown to have reduced the heart attack mortality rate by nearly approximately 0.6 death per 100,000 per month which is less than the value that we obtained without the time lag. It is statistically insignificant at the 5% significance level.

Like in our model without the time lag, the sign of the coefficient of Medicaid becomes positive, when state specific linear trends are added to the model. However, the magnitude is much larger. It remains statistically insignificant at the 5% significance level.

Similarly, when the state by month unemployment rate is added to the model, the coefficient of Medicaid remains positive but falls slightly. It is not statistically significant at the 5% significance level. State per capita income is also statistically insignificant at the 5% significance level.

The results of our model with state populations used as weights are shown in Table 5.3:

Table 5.3: Effect of Medicaid Expansion on Heart Attack Mortality With State Populations used as Weights

			Heart Attack Mortality	
Medicaid Expansion	-2.5400	-0.8861	-0.8652	-0.9134
	(1.0100)*	(1.2127)	(1.1985)	(1.2600)
R Squared	0.2619	0.2943	0.2944	0.2945
Observations	3,728	3,728	3,728	3,728
Controls:				
State Fixed Effects	Y	Y	Y	Y
Month by Year Fixed Effects	Y	Y	Y	Y
State Specific Linear Time Trends		Y	Y	Y

State by Month Unemployment Rate		Y	Y
State per capita income			Y

Note: Standard errors appear in parenthesis and are clustered by state. Significance is at alpha = 0.05

With a coefficient of -2.5400, Medicaid expansion is shown to have reduced the heart attack mortality rate by approximately 2.5 death per 100,000 per month. It is statistically significant at the 5% significance level.

When state specific linear trends are added to the model the coefficient of Medicaid falls to -0.8861. However, unlike in our previous two cases it remains negative. It is statistically insignificant at the 5% significance level.

When the state by month unemployment rate is added to the model, the coefficient of Medicaid remains negative but falls slightly. The coefficient if Medicaid remains statistically insignificant at the 5% significance level/

The coefficient of Medicaid remains negative and increases slightly when state per capita income is added to the model. However, it remains statistically insignificant at the 5% significance level.

Figure 5.1 is a graphical representation of the number of heart attack deaths per month in states that did not expand Medicaid and those that expanded Medicaid. The vertical line represents the beginning of Medicaid Expansion in 2014. From the graph we can see that Medicaid Expansion only had a slight effect on heart attack mortality.

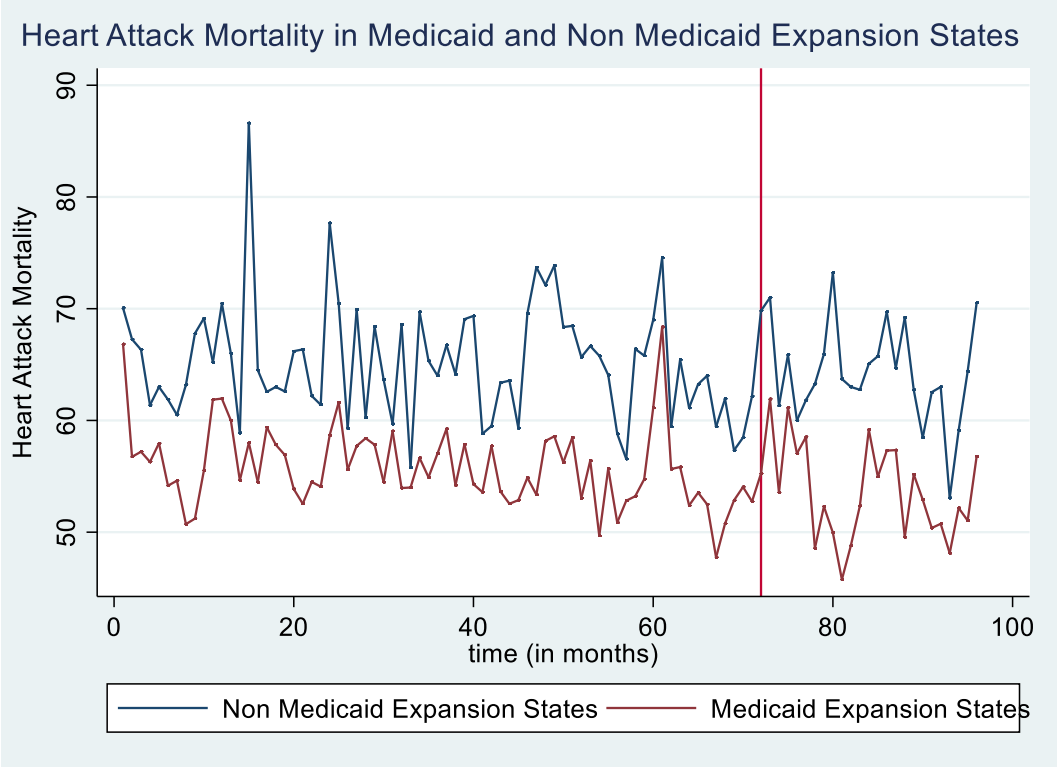

Figure 5.1: Heart Attack Mortality in Expansion and Non Expansion States from 2009 to 2016.

CHAPTER 6:

DISCUSSION

Using difference in differences we modelled the effect of Medicaid expansion on heart attack mortality. In order to reduce omitted variable bias we included state and time fixed effects. In addition, we also included linear state specific time trends, the monthly unemployment rate, and state per capita income for each state to check the robustness of our model. In all cases we found that Medicaid expansion has a statistically insignificant effect on heart attack mortality.

Furthermore, we conducted regression analysis that incorporated a lagged treatment indicator and we weighted the results by the state year population. In the case with the lagged treatment variable, we found that Medicaid Expansion had a statistically insignificant effect on heart attack mortality. In the case where we weighted the results by the state year population, we found that although Medicaid Expansion had a statistically significant effect on heart attack mortality in our initial regression, the effect of Medicaid Expansion becomes statistically insignificant when controls are added to the model.

However, our model is not without limitations. For example, the data we used for heart attack mortality was aggregate data that did not consider the individual's

Medicaid or employment status. In addition, apart from Medicaid expansion there were other provisions of the Affordable Care Act that allowed moderate and low income individuals to purchase health insurance with the help of tax subsidies. This might have lessened the effect of Medicaid expansion on heart attack mortality.

There is evidence to support our findings. For example, the Oregon Medicaid Experiment found that increased access to Medicaid had no effect on the 10 year risk of cardiovascular events. In addition, Niedzwiecki, Hsia, and Shen found that patients insured by Medicaid are less likely to receive more effective but expensive treatments for heart attacks such as percutaneous coronary intervention (PCI) or coronary artery bypass graft. They also found that patients with Medicaid who suffered heart attacks have a higher 30 day readmission rate and mortality rate, even when comparing patients within the same hospital (Niedzwiecki, Hsia, & Shen, 2018).

Hannan et al obtained similar results. They found that Medicaid patients were less likely to be admitted to hospitals that were certified to perform PCI than those with other forms of insurance. This discrepancy in care could lessen the effect of Medicaid expansion on heart attack mortality (Hannan et al, 2013).

CHAPTER 7

POLICY IMPLICATIONS

Although Medicaid expansion provided millions of people with access to healthcare there are disparities in the treatment that Medicaid patients receive compared to patients covered by private insurance. This is especially true for those who suffer heart attacks. As previously stated, research has shown that those covered by Medicaid are less likely to receive expensive treatments such as PCI or coronary artery bypass graft and generally suffer worse health outcomes than those covered by private insurance. We believe that this contributed to the negligible effect of Medicaid expansion on heart attack mortality.

Policymakers should be made aware of these disparities in care and institute healthcare reforms that focus on increasing both access to and quality of care for people with heart disease. In conclusion, although Medicaid expansion gave millions of people access to healthcare it did not affect heart attack mortality. Further research should be done to ascertain the causes.

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