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Anh Bao Tran-Le March 27th, 2016

The Impacts of The Patient Protection and Affordable Care Act on Quality, Access, and Equity of Healthcare in the United States

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Abstract

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Healthcare in America has gone through substantial changes in the past few years with the Patient Protection and Affordable Care Act, which will be referred to as the ACA from this point forward. The purpose of this research was to examine the influence of the ACA on healthcare outcomes in America since 2010 using quality, access and equity as my measurements. Drawing upon the National Health Interview Survey (NHIS), I compare health outcomes in 2010 and 2014 to assess changes in quality, access, and equity. Though the ACA is still rather new, the results show that there is improvement in quality, access, and equity. These results, though statistically significant, at this point reveal rather small practical significance in some areas. Additional research conducted at a later time would be beneficial to assess whether these short-term effects will carry over in the long term, especially with the future of the ACA hanging in the balance of the upcoming Presidential election.

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Chapter 1:Introduction and Background

Introduction

The introduction of the ACA on March 23rd, 2010 has been a monumental step in advancing the United States' healthcare system. The ACA was passed with the promise of improving the health of millions of Americans. This promise was in reference to modifications of both the medical and administrative side of healthcare. The aim of the ACA is to form market exchanges in order to reduce healthcare costs for consumers and insurers, while also increasing the quality of healthcare. Although it has only been five years since the introduction of the ACA, studying the health outcomes of American citizens is important for informing public debate and public policy. Especially with the upcoming 2016 Presidential election, a lot of opinions and political rhetoric are and will be stirred together in the pot of facts. I am interested in studying whether the ACA has improved healthcare outcomes since its introduction in 2010.

Healthcare outcomes are commonly broken down into the trinity of equity, access, and quality, referred to as the trilemma in the Commonwealth Fund's *Mirror, Mirror on the Wall* report (Davis et al. 2014). It is a trilemma in the sense that obtaining a high level of all three factors at once is deemed as a nearly impossible task. A hypothetical country that has achieved all three points of the trinity in theory will likely incur prohibitive costs that will soon cause the system to collapse. Although the United States spends the most in per capita dollars on healthcare, it trails in several key categories. According to the Davis et al. (2014), out of eleven developed nations, America ranked fifth in quality, ninth in access, and last in equity. It seems almost counterintuitive that a country that spends almost $3,000 dollar per capita more than its closest competitor trails significantly in these important categories (Davis et al. 2014). This is why a comprehensive study on whether and how the ACA has influenced our healthcare system

is required. It is important to know if America is improving its healthcare system in the three critical areas of quality, access, and equity. My hope is that this research will shape the policy debate in the future, and allow members of our government to make more informed decisions on the fate of healthcare in America.

History of the Patient Protection and Affordable Care Act

Healthcare in America has had a long history with multiple attempts at establishing and reforming our healthcare system. Healthcare has been addressed by every American president since WWII, with some of the measures having the same aspects as the ACA (Taylor 2014). Early examples of healthcare coverage for American citizens began with President Theodore Roosevelt who campaigned for sickness insurance. His distantly related cousin President Franklin D. Roosevelt, tried to pass the Wagner National Health Act of 1939, an early attempt at national healthcare insurance. Healthcare coverage for all of America's citizens has met some tough opposition. There has been political backlash and even opposition from the American Medical Association. During the Cold War era, there was a movement to lump communism and compulsory healthcare coverage under the same umbrella of fear to prevent the passage of universal healthcare coverage bills. Combining the idea of communism with the idea of socialized medicine is still a common technique in opposing universal healthcare coverage in America by some.

Healthcare is an important topic, since America is the only developed country in the world to lack universal healthcare coverage for its citizens. Our healthcare system has its problems. One issue is that Americans are

> "Juxtaposed paying very high prices for medical care (that many but not all Americans had access to) with failing to be any healthier as a population (relative to equally economically advanced countries). To pay so much for so little comparative value in

> return has become part of the rallying cry against the US health care system" (Grogan 2015: 633).

Additionally our healthcare system is not a singular system but a collection of systems seen throughout the world. It contains the Veteran Affairs system, Medicare and Medicaid, private insurance, employer-based insurance, and an out-of-pocket model. What is really surprisingly is that an out-of-pocket paying model still exists in America, because it is generally reserved for less developed countries.

The ACA is an attempt to fix some of these aforementioned problems. Its provisions go into effect over a ten-year time frame. One example is that insurance companies can no longer deny healthcare coverage to anyone with a preexisting condition. Another provision, which is aimed at decreasing the amount of money spent on healthcare, is to cap administrative spending at 20% of premiums. This means that 80 cents of every dollar paid in premiums must be directed towards the medical side of healthcare.

The ACA was not conceived out of thin air, but rather it is a collection of efforts from both political parties. Healthcare in America has had a long history of grassroots movements. In addition, "public opinion has generally run in favor of health care reform, but popular approval has not been matched by the rise of a large-scale, activist popular movement for change" (Hoffman 2003: 75). A recent example of this is when Mitt Romney instituted a healthcare system similar to the ACA while serving as governor of Massachusetts. Romney then had to distance himself from the fact that the ACA is similar to what Massachusetts had successfully implemented in his own state during the 2012 Presidential election. In the following section, I will summarize the failed reforms of the Clinton era, note a key reform of the Bush

administration, and then note some of the key moments of the healthcare reforms during the Obama administration.

In 1992, Bill Clinton began working on a healthcare reform, nicknamed Hillarycare, after his wife who played an instrumental role in the process. The program was known officially as the Health Security Act, and it would cover abortions, new Medicare prescription benefits, and better long term care at home for the elderly. The plan was based on universal coverage of all citizens by increasing insurance competition through the creation of cooperatives, as well as premium subsidies for low-income families (Starr 1995). In addition, employers would be required to cover their employees and pick up 80% of the premiums. Sociologist Paul Starr identified a major pitfall of the proposed reform:

> "The identification of the Clintons with the reform of health care became so strong that sentiments crossed over. The Wall Street Journal reported showing the same description of a health reform plan to focus groups with and without the Clinton label. Without the label, the plan won more than 70 percent support; with the label, approval dropped 30 to 40 points. It seems likely, therefore, that when polls asked for opinions about the "Clinton health plan," they tapped general feelings of confidence in President Clinton rather than preferences about the specifics of health policy" (Starr 1995: 25).

Republicans used the same tactic when Obama was working to pass the ACA and dubbed it Obamacare. This technique was implemented to associate mistrust of Obama with the healthcare reform. A poll done by CBS showed that 46 percent oppose Obamacare and 29 percent support Obamacare, while 37 percent oppose the Affordable Care Act with just 22 percent supporting the Affordable Care Act (Obernauer 2013). Even with history and most Republicans against him, President Obama kept healthcare as one of his top priorities.

The Bush administration's legacy centers around the fight on terrorism, and health reforms were not a top priority. Though in 2003, The Medicare Drug Improvement and Modernization Act included the passage of Medicare Part D which is still in effect (Taylor

2014). Medicare Part D is a subsidy for prescription drugs, and those who are sign up for Part A and B are eligible to sign up for Part D.

In contrast, President Obama made it clear that healthcare was high on his agenda, even before he was elected. On October 7th, 2008, then Senator Obama and Senator McCain, were presented with the question, "is healthcare in America a privilege, a right, or a responsibility." Obama replied:

> "Well, I think it should be a right for every American. In a country as wealthy as ours, for us to have people who are going bankrupt because they can't pay their medical bills--for my mother to die of cancer at the age of 53 and have to spend the last months of her life in the hospital room arguing with insurance companies because they're saying that this may be a pre-existing condition and they don't have to pay her treatment, there's something fundamentally wrong about that" (Obama 2008).

Taking lessons learned from his last democratic President, Obama pushed healthcare bills quickly through Congress. The House of Representatives passed the first healthcare bill in November 7th, 2009 by a vote of 220-215. Then on March 21st, 2010 the Senate passed their own version of the bill. Finally Obama signed the Patient Protection and Affordable Care Act into law on March 23rd, 2010, with is first provisions implemented in June 2010.

Republicans acted quickly to repeal the ACA by suing it for being unconstitutional. They claimed that it violated the sovereignty of states. On November 14th, 2011, the case was brought to the Supreme Court. The effort to bring it to the Supreme Court was led by Florida and signed by 25 other states. On June 28th, 2012, the Supreme Court upheld the ACA as being constitutional under power of Congress to tax (Smith 2012).

Pros and Cons of the Affordable Care Act

As with any change, there are both benefits and costs to society. But with any good policy it seeks to maximize the benefits it brings to society, while limiting the cost it bears on society. This next section will present some of the arguments in support of and against the ACA.

Argument One: Is Healthcare a Right?

In the United States, there is a divide between whether healthcare is a right or a privilege. With the introduction of the ACA, healthcare positioned itself as a right more than a privilege for the first time in American history. The United States is the largest economic power in the world and spends around 18% of our GDP on healthcare (the highest of any nation), at the same time though it is the only industrialized nation to lack universal healthcare in the world. It is also generally accepted that with increased coverage, more people receive the benefits of healthcare, "even if that means a lesser degree of care for everyone. Providing universal coverage is an overriding ethical imperative" (Pariser 2012: 153).

Yet on the opposite side of the argument opponents point to the Declaration of Independence which "enumerates the rights to life, liberty, and the pursuit of happiness…. (claiming that) just because health care exists is not a reason that it should be available to all and that the costs should be subsidized by the government" (Pariser 2012: 152). One could argue that it would be difficult to pursue happiness when you are bedridden with a preventable illness that you could not afford to treat. Another debate that has been used is that "requiring individuals to purchase health insurance, particularly from private companies, is unconstitutional and a dangerous precedent" (Pariser 2012: 152). Though in 2011, the Supreme Court upheld the ACA as being constitutional under Congress' power to collect taxes.

Argument Two: Is the Market Based Approach Working?

Supporters of President Obama claim that he conceded his position to insurance companies instead of switching to different methods like a single payer model. Instead we have market place exchanges. Just like any other economic model, in an ideal world the assumptions behind the health exchange markets would work, as healthy people would pay into the system and insurance companies would use that money to pay for the claims made by those who are sick. The other side of this is that young healthy people are not buying into the system, as paying the fines can be cheaper than purchasing health insurance, which is leading to inefficient markets.

> "Properly functioning markets have great efficiency, create powerful and efficient connections between consumers and producers, generate new innovations that continue to improve the quality of care, and help limit waste. However, if they are not well-designed, the same power of the market can be used to drive dysfunctional behavior and generate an array of unintended consequences" (Wicks and Keevil 2014: 426).

It is still early into the life of the ACA, but currently the market approach has not led to a decreased cost in premiums for all Americans.

Argument Three: Do We Have Enough Doctors?

Simply, who will care for the influx of new patients into the system? If all goes well, there will be about 48 million potential new patients demanding healthcare. Supporters claim that the new incentives will create more primary care doctors who will be able to administer preventive care and treatment of disease in early stages. This will free up resources and the demands on tertiary or specialized care. In addition the implementation of electronic records will

reduce time spent on obtaining a patient's complete medical history and prevent duplication of services like lab tests (Pariser 2012: 153).

Opponents argue that our current healthcare resources are already operating at full capacity. We already have a shortage of physicians and adding more patients will only contribute to this shortage. Pariser makes a useful analogy here:

> "We are giving more people tickets to the health care bus, but all the buses are currently filled and we are not making any new buses. The only logical outcome is that more people will be waiting for the bus and when they get on, they will have to share a seat" (2012: 153).

This will lead to a multitude of problems like increased waiting time and decreased quality of care. The result of these problems could be a total collapse of the system.

Argument Four: How Much Sovereignty do States Have?

A few important decisions on implementation of the ACA have been left to individual states which has led to some issues. One of the key tenets is the establishment of marketplace exchanges, to be formed individually through the state or to rely on the federal system. This has led to a number of responses, ranging from complete acceptance to suing the federal government for violating the constitution. Another decision which is left to individual states is whether or not to expand Medicaid within their boundaries. The Congressional Budget Office (CBO) estimates that the expansion will provide coverage to 17 million new patients, specifically children and low income adults. If a state accepts the expansion of Medicaid within its borders, the CBO estimates that the Federal government will offset most if not all of the state's costs for medical care associated with the increase in Medicaid costs.

The argument against this expansion is that it will increase the state Medicaid budgets and increase their burdens. Supporters of state's rights argue that state sovereignty must be

protected and that ultimately the decision does rest in the hands of the states. Opponents of this claim that it adds unnecessary cost to the ACA and that it does not create a universal and fair version of the ACA to all Americans. People's experience with the ACA will vary because they live in different states.

Argument Five: Is Mental Health Coverage Adequate?

Mental health has traditionally been left out of the main spotlight in healthcare reforms, and opponents say that the ACA has not done enough for mental health quality and access. The ACA now requires insurance companies to provide preventative services like depression screening at check-ups at no additional cost. The ACA also prevents insurance companies from being able to deny coverage to anyone due to a pre-existing mental health condition. This is a difficult argument to assess as there exist a wide range of mental health issues, with some being more manageable than others, but the additional screening and insurance coverage should allow more people to seek the care that they need.

Argument Six: What Happens Next?

The fate of the system hinges on the upcoming election in the minds of both supporters and the opposition. Every candidate in the 2016 election has his or her own views of how to "fix" the system. Some believe that more should be done, pushing for a more universal coverage system. One example is Senator Bernie Sanders, who believes in a single payer system with universal coverage. Others, like Hillary Clinton, support the ACA and want to continue to improve it by further reducing the cost of deductibles and prescription drug cost. On the other side of the aisle we have Republicans like Donald Trump whose campaign is run on the promise

of repealing the ACA with no plan for a replacement. Can a system and policy so large actually be influenced solely based on who the President is at the time? It would be easier said than done, to uproot the ACA and completely replace it. Most likely reforms and new provisions would be added in succeeding years.

Literature Review

In the following pages I will introduce previous research already conducted in this field of study. The majority of these studies were done using a survey or using archival methods to analyze data already accessible to researchers.

I will organize these studies based on my three dependent variables, starting with access, then equity, and finally quality of care. The line between the variables is not concrete, as an improvement in one can tie into the improvements in others. For example equity is commonly seen as access that is paired with demographics. Improving the equity of care received by gender, race, or education, will also improve the overall access to care. Another example is that improving access can also lead to better healthcare quality received by patients. I will explore what research has been done in these concepts, and then build on them in my own data analysis.

Access to healthcare insurance and facilities is key to improving a nation's healthcare. One important aspect of increasing access to care is to people's perception about the ACA. This is especially true during the 2016 Presidential election coming up, where various groups like candidates and the media will try to discredit the ACA. A study by Pasket et al. (2015) researches the effect of ignorance and misperception of the ACA. Ignorance is operationalized in this study as having an incorrect belief or response with low certainty. On the other hand, misperceptions are having incorrect beliefs with a high level of certainty. Distinguishing between the two concepts is key to public policy, as a high amount of misperception can lead to

opposition to a highly sensitive topic. Pasek, et al. (2015: 664) write, “Whereas ignorance is lamentable in a democratic society, misperceptions have the potential to be dangerous.” I agree with them, as misperceptions can fuel rumors and speculation, the breeding grounds of political debates. For example, some Americans will not enroll into healthcare programs because they believe that the ACA is unconstitutional. This means that the market place rational behind the ACA of consumer driven demand will not apply. Therefore the prices will not be driven downward, making the ACA not so affordable. The researchers found that the provisions that “were key components of advocacy by the Obama administration were commonly answered correctly, whereas topics like “death panels, a healthcare ID card, and required treatments for illegal immigrants were answered inaccurately with confidence quite often, in line with their status as topics of widespread rumoring” (Pasek et al. 2015: 668). People interact with the law based on its implications. Therefore misinformation and misperception can lend itself to public policy disagreement.

In addition to the Pasek et al. study about misperception about the provisions of the ACA, there is also a large misperception between the term Obamacare and Affordable Care Act. Politicians have the mindset that “words that work, breed campaigns that win" (Obernauer 2013). Although it was initially forbidden to call the ACA by the term Obamacare on the House floor, Democrats could not prevent Republicans from using it in the media. As the “the term Obamacare was a brilliant creation of Republican strategists who correctly understood that people want health care personalized, not politicized, and the phrase Obamacare is an effective way to do that” (Obernauer 2013). In the now famous segment of Jimmy Kimmel Streets of Hollywood interview, random participants are asked their views of the Affordable Care Act versus Obamacare. One participant was asked if he thought that Obamacare was affordable or

whether the ACA was affordable. The participant said of course the ACA is more affordable, it's right in the name. Another participant was asked whether he thought Obamacare was American, and then whether the ACA was American. He said the former was un-American, while the latter was patriotic (Jimmy Kimmel Live 2013). While not a truly random sample of people to interview, it shows how word magic can completely influence people's belief. It has fueled an entire section of Americans who refuse to enroll in the ACA, because it has some negative connotations from being called Obamacare.

One of the biggest barriers to access healthcare is the financial constraint that people face. Medicaid is one way in which the government can influence the health outcome of patients in America. Medicaid directly tackles the problem of access to healthcare providers and it also addresses the issue of equity in healthcare, as patients of lower socioeconomic status are now able to obtain healthcare services. The ACA gives individual states the opportunity to accept an expanded Medicaid program in their border. Because it is not mandatory, a number of states have decided to reject this expansion in their states.

Texas and Massachusetts are at opposite ends of this spectrum. Massachusetts passed An Act Providing Access to Affordable, Quality, and Accountable Health Care in 2006, which has afforded Massachusetts the lowest uninsured rate in the United States. Texas on the other hand, has denied the expansion of Medicaid within its borders and has the highest uninsured rate in America (Doonan and Katz 2015). Expansion of Medicaid will boost access of healthcare to thousands of people in the state, but a study by Adams and Herring (2008), says that the quality received per patient might decrease. The objective of their research was "to test for effects on the extent of Medicaid participation among physicians" (Adams and Herring 2008: 364). The results show an increase to access to care, but no increases in the number of providers. What this means

is that the physicians that already accept Medicaid patients seem to be increasing their caseloads. While access to care has increased along with increasing Medicaid funding by the government, Adams and Herring (2008: 375) found that quality of care received has diminished. They discovered that doctors that accept Medicaid are more likely to be non-board certified, younger, and foreign trained doctors. Since this study ended before the passage of the ACA in 2010 it would be important to see if the new provisions regarding the expansions of Medicaid are going to increase both access and quality of care. It will be particularly important to determine whether or not the doctors who accept Medicaid now are also disproportionately non-board certified and foreign trained.

The ACA has also given consumers a larger variety of opportunities to purchase health insurance thereby increasing access to care. Consumers now have the option to select from bronze, silver, gold, and platinum plans. The plans are rated based on their actuarial value, which is the average healthcare expense that the insurance company will pay. The bronze plan for example has an actuarial value of 60%, while the platinum plan has an actuarial value of 90%. The trade off to this is that the platinum plans have the highest monthly premiums, while the bronze plans have the lowest monthly premiums. This in theory should drive down the cost and increase access to care. A 2015 study Doonan and Katz's main objective was to investigate the effects of choices and the influences of the ACA in changing the types of choices available to consumers. What they found was that the expansion of choices led to increased cost for the consumers and did not correlate with higher care for the consumer (759).

This study compliments a 2010 study by Johnson et al. which "examines how well people make these choices, how well they think they do, and what can be done to improve these choices" (3). The choices refers to selecting which healthcare insurance plan they should

purchase. To be fair, there are a lot of options out there and determining eligibility for plans can be tricky for families. This is especially true for families who might be first generation Americans. This will be addressed further in the equity section. The results from the Johnson et al. study show that "without any intervention, respondents perform at near chance levels and show a significant bias, overweighting out-of-pocket costs and deductibles. Financial incentives do not improve performance, and decision-makers do not realize that they are performing badly" (2010:5). This is important because although the consumer will have obtained health insurance, the high deductible they have to pay before the insurance coverage begins can still deter them from actually using the healthcare system. This is especially true of those in the bronze level insurance plans, who are more likely to be of a lower socioeconomic status than those of higher monthly premium plans in the silver and gold levels. On average those in the bronze level plans have to pay 40% out of pocket while the insurance companies cover the rest. Secondly, "if consumers cannot identify cost efficient plans, then the Exchanges will not produce competitive pressures on health plan costs, one of the main advantages of relying upon choice and markets" (Eric et al. 2010:10)

Finally, I would like to touch on employer-based insurance. With the introduction of the ACA, eligibility and coverage is expected to increase, allowing more employees to obtain healthcare from their employers, thereby increasing access to healthcare. A study by Claxton et al. (2014) monitored changes in employee choices and coverage status. The study found that 98% of firms have not changed the eligibility for employee healthcare insurance coverage, despite the tax credits and fines that the firm can claim under the provisions of the ACA. This is significant, because although the ACA has allowed for an increase in access to people with

healthcare, this study shows that employers are willing to be fined instead of increasing their coverage.

Employers, especially larger firms, might also see the benefits of the financial incentives to be outweighed by the cost of providing healthcare coverage to a larger portion of their workforce. It is important to continue to study the impact of access to healthcare as the most significant provisions to employer coverage are in 2015 (Clayton et al. 2014). Continuing to pursue research into this area of employer sponsored healthcare and access to care will be important, as the new provisions will mandate more requirements for firms to enroll their employees.

Equity is one of the three criteria that I would like to focus on in measuring health outcomes and will be addressed in this section. Even with the expansion of Medicaid eligibility under the ACA, Mosqueira et al. (2015) find that Latinos are the least likely to enroll in the ACA, while at the same time have the highest uninsured rates in America. The reasons for this are that Latinos had significantly lower awareness of the provisions of the ACA. The researchers found that despite the decrease in the amount of Americans that were unemployed, a disproportionality high amount of Latinos were still without healthcare insurance. They found this to be a result of a lack of outreach of the Medicaid eligibility expansion to lower income and less educated adults, which is also disproportionately Latinos. This is important to my study as it shows that, although we are expanding coverage to a greater amount of Americans, groups that are the most vulnerable and likely to benefit the most from healthcare insurance are still unaware of the Medicaid expansion that they are likely able to benefit from.

Finally, quality will be addressed in the following paragraphs. Quality of care can be addressed in a multitude of ways. One of the most important indicators is infant mortality,

"because it is associated with a variety of factors such as maternal health, quality and access to medical care, socioeconomic conditions, and public health practices" (MacDorman et al. 2014:2). In the MacDorman et al. study conducted by the CDC, they found that the United States had the highest infant mortality rate among the 27 wealthiest countries in the world, with an infant mortality rate of 6.1 deaths per 1000 live births. In addition to this, we have the highest percent (9.8%) of preterm births, which is another indicator of how well prenatal care is accessible to the population. A preterm birth was defined in the study as a baby born before 37 weeks of gestation.

Another study by Frieman, Heneghan, and Miriam (2009) focuses on the difference in quality of life of children born to mothers who did not receive prenatal care. They studied both the social and health aspects of the children born to these mothers. They found that children born to mothers who did not receive prenatal counseling and care faced a multitude of problems. In terms of health issues, they had significantly lower birth weights as a result of an increased likelihood of a premature birth, increased risk of maternal STDs, and an increased likelihood of neural tube defect due to the lack of folic acid.

These findings are relevant to my study because the Affordable Care Act is now requiring that insurance companies provide preventative care to include pre-natal care. Since this research was done before the passage of the ACA, I can then use the results from this study to compare the quality of care that mothers receive now and to what they received previously. The ACA has mandated upstream, preventative medicine be included in insurance policies in America. This has important public health implications. As shown by this study, women who do not receive the necessary prenatal care will give birth to children with health and social problems. Though it is too early to fully study the effects of the ACA, this study supports my

hypothesis that the ACA has improved the health outcomes of the population. It will grant mothers greater access to care, thereby increasing the quality of care received from mothers. This may then have a positive outcome on newborns health.

Another key indicator is self-reported health outcomes. Sommers et al. (2015) used an archival study method of the 2012-2015 Gallup-Healthways Well-Being Index to study the national changes in self-reported coverage, access to care, and health during the ACA's first two open enrollment periods and to assess differences between low-income adults in states that expanded Medicaid and in states that did not expand Medicaid. The results from this study indicate a significant improvement in self-reported coverage, access to care and medication, affordability, and health. This study also indicates that participants with low incomes in states with expanded Medicare had significantly higher amounts of coverage and access when compared to participants with low income who lived in states that did not expand Medicaid coverage (Sommers et al. 2015:372).

Studies Using the NHIS Dataset

The National Health Interview Survey (NHIS) is a data source used for a variety of healthcare studies. I have included a few from recent years that are related to my study. A 2014 study by Holmes and Zajacova compared the benefits of educational attainment for healthcare outcomes on different demographic groups. Educational attainment was found to affect the health of whites more than minorities, even with the inclusion of a wide range of potential sociodemographic, behavioral, and economic mediators. This is relevant to my study, as I will be using demographic variables in my equity variable. It will be useful to analyze whether the ACA has a greater influence on certain groups, especially since healthcare disparities already exist in America.

Unsurprisingly the CDC also uses this dataset in its studies. In a longitudinal study from 2005-2013, the CDC compared mortality and morbidity rates in the United States. They found that the average life expectancy of the US increased about one year, but the rate of pre-mature deaths still remained constant. This lends itself to the conclusion that preventative care has not improved in the United States, and the report states that protective factors like reducing tobacco usage and encouraging more exercise has stalled. (Johnson et al. 2014: 24).

Another study by Boudreaux et al. in 2016, which draws from the NHIS looks at the long term effects of Medicaid coverage during infancy and childhood years. What Boudreaux et al. found was that Medicaid coverage increased the probability of any annual hospital stay by 3% and reduced the rate of low birth weight children by 4%. Boudreaux et al. then use these finding to discover that having Medicaid coverage as a low income child has statistical and practical significance in later life (ages 18-54) health factors. This study suggests that the increased coverage that the ACA provides will provide further health benefits to younger generations both now and in the future. Studying these cohorts will provide more data to be analyzed about the influence of the ACA, especially the difference between states that implement the expansion of Medicaid compared to the states that do not expand Medicaid in their borders.

These studies do not compare the healthcare variables of quality, access, and equity before and after the passage of the ACA that I have chosen to analyze. With the literature review that I have done, my hypothesis is that the Affordable Care Act has improved healthcare in those three areas.

Chapter 2: Data and Methods

The NHIS Dataset

For this study I conduct secondary analysis of the Center for Disease Control's National Health Interview Survey (NHIS). The purpose of the NHIS is to observe the broad health patterns in multiple demographic groups across the United States. The NHIS is a repeated cross sectional survey with a cluster and stratification design. It has been conducted yearly since 1957. The first step is stratification of states and then a cluster design is utilized to select areas and households. After a household is selected the survey is conducted by personal interviews using a computer assisted personal interviewing method. The data are collected by a U.S Census Bureau trained interviewer. They use 750 interviewers in 12 regional areas. There is also an oversampling of black, Asian, and Hispanic populations, which are then reweighted to be nationally representative of the total population. The present study uses the unweighted version of the NHIS. This is done for two reasons. First, comparison of the weighted and unweighted results revealed no substantive or statistically significant differences in terms of the univariate, bivariate, and multivariate conclusions. For example, percentage differences in crosstabulations did not exceed two percentage points and p-values were unaffected. Second, once weights are applied the sample size increases from roughly 70,000 in either year to well over 200 million. This unusually large number drastically increases the power of statistical significance tests, making extremely trivial group differences "significant." To help reduce the problem of finding statistical significance everywhere we look, I use the unweighted sample size, which is still large in its own right.

Variables in the Analysis

In this study I measure healthcare changes from 2010, the year that the ACA was signed, to 2014. The independent variables are survey year, 2010 and 2014. The dependent variables for measuring healthcare outcomes are conceptualized and classified as indicators of quality, access, and equity.

I examine two quality variables, six access variables, and three equity variables. For quality and access, I present the variable name that the NHIS assigned along with the original survey question wording. For my equity analysis I control for the effects of sex, age, and race in order to determine whether any variation in outcomes exists across the different groups represented by these variables. Sex is measured as male or female. Age is recoded into four categories: 18-29, 30-49, 50-64, and 65 and older. There are four race categories: White, Black/African-American, Alaskan native/American Indian, and Asian. I conduct an equity analysis on all of the access variables, and report any findings that deviate from the original access at the bivariate level.

Chapter 3: Analysis

Plan of Analysis

For the quality and access variables I conduct cross-tabulation analysis in SPSS to assess the pattern of relationships among variables, the strength of relationships, and their statistical significance. As mentioned previously, the independent variable is survey year, whether 2010 or 2014. Regarding outcome variables, equity is analyzed using crosstabs, with age, sex, and race added as a layer to control for access. The pattern of association between variables is assessed using percent comparisons across survey years. For the strength of the association, I look at the magnitude of the percent differences as well as the value of gamma, a summary statistic that quantifies the degree or strength of association in a single number and which is based on the logic of proportional reduction in error. Here, I will consider the absolute value of any gamma ranging from 0-.29 to be weak in strength, a gamma that falls between .30-.49 to be moderate in strength, and finally any gamma that falls between .50-1.00 will be regarded as indicating a strong association. To address statistical significance I mainly use the p-value of Pearson's chi-square but will also report the p-value of gamma (gamma provides a more powerful test of significance when the relationship has a clear positive or negative trend). I will note when the p-values for chi-square and gamma lead to different conclusions about significance, but my analysis focuses on chi-square. I will use the conventional alpha level of .05 as my cutoff for statistically significant results. In other words, any p-value less than or equal to .05 will be regarded as statistically significant. It should be emphasized that the large sample size in this study makes it easy to reject the null hypothesis that there is no association between the years and healthcare outcomes in quality, access, and equity. For this reason I will pay close attention to the *substantive significance* of the results in addition to statistical significance.

In presenting the results, I will first show the original question wording, and then a table and notes which address the pattern, strength, and significances of my findings. I will present the two quality variables first, followed by the access variables. Equity variables will be discussed with each access variable. Most of the variables for equity replicate the findings at the bivariate level, but some of them show an interaction effect which will be noted when they appear. I do not present separate tables when the results of the equity analysis merely replicate the bivariate result. But in those cases where the equity outcomes depart from the bivariate result, separate tables are shown.

Quality Analysis

The first variable, labeled HEALTH in the NHIS dataset, asks participants: "Would you say your health in general is excellent, very good, good, fair, or poor?" As you can see in Table 1. The excellent and very good response categories have increased, while the good, fair, and poor responses have decreased. Though these results are statistically significant (p=.003), the strength is very weak at a -.012 gamma.

Table 1. Self-Reported Health Status

HEALTH		YEAR 2010	YEAR 2014	Total
Excellent	Count	18427	23682	42109
	Column Percent	28.0%	28.3%	28.1%
Very Good	Count	20015	26016	46031
	Column Percent	30.4%	31.0%	30.8%
Good	Count	18531	23245	41776
	Column Percent	28.2%	27.7%	27.9%
Fair	Count	6736	8378	15114
	Column Percent	10.2%	10.0%	10.1%
Poor	Count	2102	2491	4593
	Column Percent	3.2%	3.0%	3.1%
Total	Total Count	65811	83812	149623
	Total Percent	100.0%	100.0%	100.0%

Notes: chi-square = 15.95, p = .003; gamma = -.012, p = .003

The second variable, HSTATYR, asked: "Compared with 12 months ago, would you say your health is better, worse, or about the same?" We have mixed results here as the number of respondents who say that their health has gotten better has decreased, but at the same time the number of respondents who say that their health has gotten worse has also decreased. Like the previous quality variable, there is statistical significance, but gamma is still very weak at .036.

Table 2. Self-Reported Health Status Compared to Last Year

HSTATYR		YEAR 2010	YEAR 2014	Total
Better	Count	5083	6476	11559
	Column Percent	18.8%	17.7%	18.1%
Worse	Count	2482	3191	5673
	Column Percent	9.2%	8.7%	8.9%
About the same	Count	19537	26976	46513
	Column Percent	72.1%	73.6%	73.0%
Total	Total Count	27102	36643	63745
	Total Percent	100.0%	100.0%	100.0%

Notes: chi-square = 18.60, $p < .0005$; gamma = .036, $p < .0005$

These results regarding self-reported health status do not clearly favor or disfavor the ACA as any number of factors can influence how people perceive their health. Even so, the results here do not point to consistent and noteworthy improvements in perceived health status. In this sense, the results would seem to be at odds with the expectations of the ACA policymakers who surely would hope that the ACA leads to health improvements.

Access and Equity Analysis

The first access variable, DVINT, asked: "About how long has it been since you last saw or talked to a doctor or other health care professional about your own health?" Table 2 shows an increase in respondents who have gone six months or less since their last health visit, and a slight decrease in those who have waited one or more years since their last visit.

In the equity analysis (i.e., the analysis in which I introduce controls for age, sex, and race), I found that only the 18-29 age group had a slight deviation from the bivariate results in Table 3. Specifically, the chi-square was slightly less significant (chi-square = 19.071, p=.001). The results for race and sex more fully replicated the bivariate result.

Table 3. Interval Since Last Doctor Visit

DVINT			YEAR 2010	YEAR 2014	Total
	Less than 6 months	Count	17909	25333	43242
		Column Percent	68.0%	71.2%	69.8%
	6 to less than 1 yr	Count	3941	4922	8863
		Column Percent	15.0%	13.8%	14.3%
	1 yr to less than 2 yrs	Count	2116	2581	4697
		Column Percent	8.0%	7.3%	7.6%
	2 yrs to less than 5 yrs	Count	1513	1702	3215
		Column Percent	5.7%	4.8%	5.2%
	5 yrs or more	Count	874	1040	1914
		Column Percent	3.3%	2.9%	3.1%
Total		Total Count	26353	35578	61931
		Total Percent	100.0%	100.0%	100.0%

Notes: **C**hi-square = 82.42, p < .0005; gamma = -.070, p < .0005

HCSPENDY, asks respondents, “The next question is about money that [fill1: you have/your family has] spent out of pocket on medical care. We do not want you to count health insurance premiums, over the counter drugs, or costs that you will be reimbursed for. In the past 12 months, about how much did [fill2: you/your family] spend for medical care and dental care?” In table 4, there is an increase in the amount of people who have spent zero dollars out of pocket for medical care, but also an increase in the number of people who have spent $5000 or more dollars in the last year. This is captured by the very weak gamma of -.005 and insignificant p value of .162. This is only variable of which the chi-square and gamma p-values tell different stories. The equity analysis revealed that the only group that departed from the bivariate results is the oldest age group. Table 5 addresses this group. While the pattern and strength of the association between years and health spending replicated those observed at the bivariate level, the relationship failed to reach statistical significance.

Table 4. Amount of Money Spent Out of Pocket for Medical Care

HCSPENDY			YEAR 2010	YEAR 2014	Total
	Zero	Count	7486	10369	17855
		Column Percent	11.8%	12.7%	12.3%
	Less than $500	Count	22353	28295	50648
		Column Percent	35.1%	34.8%	34.9%
	$500 to $1999	Count	20171	24651	44822
		Column Percent	31.7%	30.3%	30.9%
	$2000 to $2999	Count	6058	7795	13853
		Column Percent	9.5%	9.6%	9.6%
	$3000 to $4999	Count	3872	5069	8941
		Column Percent	6.1%	6.2%	6.2%
	$5000 or more	Count	3713	5185	8898
		Column Percent	5.8%	6.4%	6.1%
Total		Total Count	63653	81364	145017
		Total Percent	100.0%	100.0%	100.0%

Notes: Chi-square = 69.957, p < .0005; gamma = -.005, p = .162

Table 5. Equity Results for HCSPENDY, Controlling for Age

Equity Variable	Sub Group	Pattern, Strength, and Significance
Age	65 and older	Pattern: Same as bivariate (spending declined across years) Strength: Same as bivariate (weak gamma) Significance: Different from bivariate (chi-square =14.251, p = .176)

The next variable, FAMYBARCAR, asks respondents, "During the past 12 months, was there any time when [fill1: you/someone in the family] needed medical care, but did not get it because [fill2: you/the family] couldn't afford it?" Respondents indicate that those that needed medical care but were not getting it due to cost decreased about 4%. When conducting the equality analysis, the only group that departed from the bivariate results is Alaskan Native or American Indian race group. Table 7 addresses this group. This group had an increase of no

responses from 35.4% to 63.4%, with a chi-squared of 7.169 and a p-value = .009. These results are still significant, but is the only one that is not significant below the .001 level.

Table 6. Any family member needed medical care, but couldn't get it due to cost

FAMYBARCAR			YEAR 2010	YEAR 2014	Total
	No	Count	56209	74725	130934
		Column Percent	85.4%	89.1%	87.5%
	Yes	Count	9640	9132	18772
		Column Percent	14.6%	10.9%	12.5%
Total		Total Count	65849	83857	149706
		Total Percent	100.0%	100.0%	100.0%

Notes: Chi-square = 472.859, p < .0005; gamma = -.168, p < .0005

Table 7. Equity Results for FAMYBARCAR, Controlled for Race

Equity Variable	**Sub Group**	**Pattern, Strength, and Significance**
Race	Alaskan Native or American Indian	Pattern: 35.4% no to 63.4% no Strength: Same as bivariate (weak gamma) Significance: Different from bivariate (chi-square =7.169, p = .009)

The next variable, HINOTCOVE, asks respondents, "What is your Health Insurance coverage status?" The percentage of those with health insurance coverage has increased from 78.7% to 85.4%. Once again when I performed the equity variable analysis, I found that the results were replicated across all groups with the same strength, pattern, and significance. The equity analysis showed complete replication of the bivariate results in terms of pattern, strength, and significance.

Table 8. Health Insurance Coverage Status

HINOTCOVE			YEAR 2010	YEAR 2014	Total
	Not covered	Count	13941	12134	26075
		Column Percent	21.3%	14.6%	17.6%
	Covered	Count	51391	70852	122243
		Column Percent	78.7%	85.4%	82.4%
Total		Total Count	65332	82986	148318
		Total Percent	100.0%	100.0%	100.0%

Notes: **C**hi-square = 1138.208, p < .0005; gamma = .226, p < .0005

The next variable, HINOCOSTR, asks respondents, "Reasons for no insurance: Too expensive." The results from this analysis show that the number of people who do not purchase health insurance due to cost has decreased from 47.5% to 44.4%. The results of the equity variables show some interesting trends among the sample though. Most of the categories were replicated except for those aged 65 and older, Asians, and were male. The equity analysis revealed that three groups departed from the bivariate results. These groups included those 65 and older, Asians, and males. Table 10 addresses these group. While the pattern and strength of the association between years and health insurance being too expensive replicated those observed at the bivariate level, the relationships in these three groups achieve to reach statistical significance.

Table 9. Is Health Insurance too Expensive

HINOCOSTR			YEAR 2010	YEAR 2014	Total
	No	Count	7000	6322	13322
		Column Percent	52.5%	55.6%	53.9%
	Yes	Count	6345	5053	11398
		Column Percent	47.5%	44.4%	46.1%
Total		Total Count	13345	11375	24720
		Total Percent	100.0%	100.0%	100.0%

Notes: **C**hi-square = 24.117, p < .0005; gamma = -.063, p < .0005

Table 10. Equity Results for HINOCOSTR, controlled for by Age, Race, and Sex

Equity Variable	**Sub Group**	**Pattern, Strength, and Significance**
Age	65 and older	Pattern: Same as bivariate (increase in those saying insurance was not too expensive across years) Strength: Same as bivariate (weak gamma) Significance: Different from bivariate (chi-square =.181, p = .798)
Race	Asian	Pattern: Same as bivariate (increase in those saying insurance was not too expensive across years) Strength: Same as bivariate (weak gamma) Significance: Different from bivariate (chi-square =.075, p = .718)
Sex	Male	Pattern: Same as bivariate (increase in those saying insurance was not too expensive across years) Strength: Same as bivariate (weak gamma) Significance: Different from bivariate (chi-square = 2.296, p =.134).

The next variable is YBARMENTAL, which asks respondents, "During the past 12 months, was there any time when you needed any of the following, but didn't get it because you couldn't afford it?" The equity analysis revealed that the oldest age group departed from the bivariate results. Table 12 addresses this group. While the pattern and strength of the association between years and not getting mental healthcare due to cost replicated those observed at the bivariate level, the relationships in these groups failed to attain statistical significance.

Table 11. Needed mental healthcare, but couldn't afford it

YBARMENTAL			YEAR 2010	YEAR 2014	Total
	No	Count	26008	35583	61591
		Column Percent	97.0%	97.9%	97.5%
	Yes	Count	792	766	1558
		Column Percent	3.0%	2.1%	2.5%
Total		Total Count	26800	36349	63149
		Total Percent	100.0%	100.0%	100.0%

Notes: **C**hi-square = 46.086, p < .0005; gamma = -0.172, p < .0005

Table 12. Equity Results for YBARMENTAL, controlled for by Age

Equity Variable	**Sub Group**	**Pattern, Strength, and Significance**
Age	65 and older	Pattern: Same as bivariate (increase in those saying mental healthcare was not too expensive across years) Strength: Same as bivariate (weak gamma) Significance: Different from bivariate (chi square =.614, p = .478)

Chapter 4: Conclusion

Summary and Discussion of Results:

My results show that quality, access, and equity outcomes either stayed the same or improved slightly from 2010 to 2014. For example, consider self-reported health status. There was only an increase of .9% of those who reported their health as excellent or very good between 2010 and 2014. There was a weak gamma at -.012, but still this minor difference was statistically significant ($p = .003$). The most promising result was that health insurance coverage status improved. It improved from 78.7% in 2010 to 85.4% in 2014 (gamma = .226, $p < .0005$). Equity results replicated the bivariate results almost all of the time. It would be useful for future studies to research why these groups did not replicate the findings, as that is outside of the scope of my study.

An important theme of the present study is the difference between practical or substantive significance versus statistical significance. While many of the observed relationships among variables were statistically significant, with patterns generally in a direction that is favorable for ACA advocates, the strength of the relationships tended to be quite weak. The gamma association, for example, was weak in all of my variables. The ACA is still young, and there are still provisions slated to come into effect until 2020 that should increase its practical significance. Like mentioned previously, additional studies done further down the line would be beneficial to study the influence of the ACA.

Critics of the program have said that "The sweeping changes to be implemented over the next few years by the Affordable Care Act (ACA) will have a profound effect on how health care is delivered and will subject society, providers, and patients to many new and different ethical dilemmas, challenges, relationships, and unintended consequences" (Pariser 2012: 151). What we have seen so far suggests that the results of the ACA have been a little more subtle in nature.

Though the ACA is considered by many to be a step in the right direction towards universal care, the United States still has a long road ahead of us before achieving that goal and no longer being the only developed nation without universal care. We currently have about 23 million people in the United States still uninsured. A quote by Taylor says it well, "We have traveled this long and bumpy road to healthcare reform before. We have not yet arrived at the destination of a more accessible, cost efficient and high quality health care system, but that destination is surely worth the difficult journey" (Taylor 2014).

Weaknesses and Limitations:

One of the first weaknesses of the present study is that I used secondary data and therefore was limited by the questions and survey years made available by the NHIS. Being able to analyze the 2015 survey data potentially would have allowed us to observe stronger effects, i.e., more practical significance to the results. In addition, I was not able to address mental health issues in sufficient detail. Mental health is one of the most contentious issues in health insurance and healthcare in general. One provision of the ACA was for mental screening to be covered by insurance. This should allow for improved quality of care in the mental ill.

The questions asked by the NHIS also had limited quality variables. Here, we examined only perceived health status. Future studies might expand this analysis and include other measures of quality such as satisfaction with the doctor-patient relationship. In addition, patient evaluations of quality across specific types of healthcare (e.g., obstetrics, psychiatry, and cardiology) should be examined in future research in order to determine whether the ACA's effects vary depending on medical specialty.

There were also more access and equity variables that I could have used in my study. For access I could have looked at the ability of woman to seek prenatal care, which in turn would

lead to better health care quality for the mother and child. In terms of equity, I was only able to look at three factors, but there are many more demographic variables that can influence healthcare. Examples of these are education level, income level, religion, and family size.

Conclusion:

In closing, it is early to be evaluating the effects of the Affordable Care Act. This has not prevented many scholars from conducting studies in this vein, including studies examining the costs of the act, its impact on the numbers of insured, and its projected benefits (see Boudreaux et al. 2016, Grogan 2015, or Manchikanti 2010). The present study suggests promising short-term effects. Future research will be able to determine if these short-term effects endure and grow stronger.

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