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Participation in Cervical Cancer Screening by Low-Income Women During Affordable Care Act Medicaid Expansion in Pennsylvania: A Policy Analysis

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PARTICIPATION IN CERVICAL CANCER SCREENINGS BY LOW-INCOME WOMEN DURING AFFORDABLE CARE ACT MEDICAID EXPANSION IN PENNSYLVANIA: A POLICY ANALYSIS

A Dissertation
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Requirements for the Degree
Doctor of Philosophy

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Title: Participation in Cervical Cancer Screening by Low-Income Women During
Affordable Care Act Medicaid Expansion in Pennsylvania: A Policy Analysis

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With early detection through regular screening, cervical cancer is one of the most preventable diseases. Yet in the United States, thousands of women die from cervical cancer every year. Many barriers to cervical cancer screenings exist, including lack of insurance coverage for preventive health services. Research shows that insurance coverage for preventive services such as cervical cancer screening is linked to higher participation in recommended screenings. Under the Affordable Care Act, coverage for preventive healthcare screenings became available to millions of low-income women in those states that opted to offer expanded Medicaid.

However, Pennsylvania's approach to this expanded coverage was unique. From 2010 until 2014 Pennsylvania did not expand Medicaid. From 2014 until 2016 Pennsylvania transitioned from a waiver program to full Medicaid expansion. The sequential introduction of these three different insurance models in the same state provided an opportunity to examine the impact of insurance coverage on participation in cervical cancer screenings among low-income women.

This study used quantitative methods to examine screening participation of low-income women across the three phases of Medicaid expansion in Pennsylvania. The study used secondary data collected from an annual survey performed by the Centers for Disease Control and Prevention entitled The Behavioral Risk Factor Surveillance Survey (BRFSS). The BRFSS is a well-established data source, and research supports the use of the BRFSS for state-level studies.

The results of this study show that insurance coverage had a positive effect on participation in cervical cancer screening. Low-income uninsured women were less likely (34%, Medicaid; 30% Medicare; 29% Private) than insured women to participate in cervical cancer screening. Other findings suggest that age is a significant predictor ($p<.05$) for participation in cervical cancer screening. As in previous research, factors such age, race, marital status, and usual source of care contributed to screening participation. Overall, the results of this study found a decrease in the probability of screening from 2014 to 2016 in this cohort, suggesting a negative influence on potential beneficiaries due to changes in policy. These early results demonstrate a need for continued evaluation of policy's long-term effects on cervical cancer screening.

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"If you want something in your life that you never had, you'll have to do something you've never done" (JD Houston). This quote, with a picture of a goldfish jumping out of a bowl filled with other fish and into her very own bowl, hangs in my office and reminds me daily of my reason for this journey. When I started the Administration and Leadership Studies program, so many of my peers questioned my decision. On many occasions I heard: "You are an accomplished clinician and healthcare executive. Why are you putting yourself through this?" Many times, I asked myself that same question. Then, I looked at the goldfish and knew I wanted something I didn't have -- the opportunity to educate the next generation of healthcare professionals, explore my passion for women's health, and create my own business. This came to reality as I completed the dissertation process.

First, I wholeheartedly thank my dissertation chair, Dr. Susan Boser. I gained a deeper passion for understanding health policy in her policy study course. Dr. Boser patiently guided me through a complex web of health policy and encouraged me to gain a deeper understanding of the underlying forces influencing health policies. I am forever appreciative of her patience and encouragement in the dissertation process and her wisdom and guidance as I recreated my career path.

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The Administration and Leadership Ph.D. has given me the springboard I needed to make that leap from the bowl filled with goldfish into my very own bowl. I look forward to the new opportunities and possibilities in my professional life.

TABLE OF CONTENTS

Chapter Page

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

Chapter Introduction

Over the past few decades, the ability to prevent disease has risen to levels where many diseases once considered incurable are now preventable. Cervical cancer is one of the diseases that has progressed along this continuum. A simple screening procedure can detect pre-cancerous cells and treatment to prevent further progression of the disease nearly guarantees a cure (National Institutes of Health, 2010). Yet in the United States today, disparities in access to cervical cancer screening result in continued deaths from this disease. According to the Centers for Disease Control, in 2013, 11,955 women received a diagnosis of cervical cancer and 4,212 died from this preventable disease (Centers for Disease Control and Prevention, 2017).

Until the passage of the Affordable Care Act (ACA) in 2010, insurers determined coverage for preventive health services, and women who were under-insured or uninsured often had no access to affordable preventive health screenings (Kaiser, 2013a). The ACA requires that all insurances cover preventive health screens with no cost sharing, allowing nearly 71 million women to access preventive health screenings (Centers for Disease Control and Prevention, 2017a). Although the ACA has made significant gains in ensuring preventive health services for many women in America, disparities still exist.

Consistent health insurance positively correlates with participation in preventive health screens (Sudano & Baker, 2003). By facilitating expansion of Medicaid benefits on a state-by-state basis to all individuals living below 138% of federal poverty level (FPL), the ACA increased the ability of many Americans living near the poverty level to access health insurance (Kaiser, 2013a). However, not all states chose to expand Medicaid at the introduction of the

ACA in 2010 (2014b). This left many without coverage, thereby continuing the disparity in access to preventive health services for many women.

Pennsylvanians have had a unique journey to Medicaid expansion, a process leaving many uncertain of medical coverage for several years. In 2010, under Republican Governor Tom Corbett, the Pennsylvania legislature chose not to expand Medicaid, but in 2014, the Governor requested approval for a Medicaid waiver program for Pennsylvania. Centers for Medicare and Medicaid accepted the waiver for the Healthy PA Plan on August 28, 2014 for implementation in January 2015 (Kaiser, 2015).

In 2014, Pennsylvanians went to the polls and elected a new Democratic governor, Tom Wolf. During his campaign, Governor Wolf promised to expand traditional Medicaid benefits (Field, 2015). With the change in leadership, the benefits changed for individuals whose incomes were less than 138% FPL. In February of 2015, he announced Pennsylvania’s transition to traditional Medicaid (Field, 2015). The transition took place from April to September of 2015, and all individuals covered under the Healthy PA Plan transitioned to Medicaid by the end of September (Kaiser, 2015). The change in healthcare policy from 2010 until 2016 created a unique environment for low-income Pennsylvanians. The environment created coverage uncertainty for basic healthcare needs such as preventive health services.

Research demonstrates that utilization of preventive health services decreases with a lack of insurance coverage, even if that gap is for a brief period (Sudano & Baker, 2003). The purpose of my policy analysis is to understand the impact of health policy changes on participation by low-income women in cervical cancer screening, during the period of Pennsylvania’s Medicaid expansion from 2012-2016. This chapter provides an overview of the disparities in participation in cervical cancer screenings, and describes how insurance status influences these disparities, and states the significance of this study.

Cervical Cancer

Historical Overview of Cervical Cancer Screening

Pap smear test. The medical profession's first attempt at large-scale screening for human malignancy was the cytological screen, known as the Pap smear (referred to as Pap test in this document) (Lowry, 2010). As early as the late nineteenth century, physicians were beginning to identify differences in cervical cell types. With the invention of the speculum in the late 1800s, physicians began to perform the first biopsies of the cervix. John Williams, a British professor of midwifery, made the first recorded descriptions of lesions of the cervix in 1886 (Lowry, 2010). Cytological screening continued to evolve, and in 1933 Walter Schiller, a Viennese gynecologist, became the first physician to use cytological screening to follow the development of precancerous lesions through malignancy (Lowry, 2010).

During the early 1900s, cytological screening was primarily used as a diagnostic procedure. Because early cervical cancer is asymptomatic, cytological screening reveals the disease in its end stages (Lowry, 2010). By the time symptoms are present, it is virtually impossible to arrest the progression of the disease even if preventive healthcare services are available. At the time, due to limited knowledge about the disease, treatment for cervical cancer was limited to performing radical hysterectomy surgery. The late intervention resulted in mortality rates of 70% (Lowry, 2010).

Cervical cancer screening evolved to the next level when Dr. George Nicholas Papanicolaou, a New York pathologist, developed a vaginal smear technique which was named for him, and is commonly known as a Pap smear (Lowry, 2010). Dr. Papanicolaou and his collaborator, gynecologist Dr. Herbert Frederick Traut, published their diagnostic findings in 1928, spurring the early detection of cervical cancer. (Lowry, 2010).   Nevertheless, according to Lowry (2010), the number of women receiving the Pap test remained small. Through the 1930s and 1940s, only about 10% of women received any type of pelvic examination, and until the 1950s, the Pap test remained a diagnostic exam that usually resulted in radical intervention, mostly resulting in poor outcomes (Lowry, 2010).

The use of the Pap test as a preventive screen faced many challenges during the early and mid-1900s. One of those challenges was the social pressure experienced by women regarding the need for modesty, especially on gynecological topics. According to Lowry (2010), the Pap test transitioned into a routine screening procedure only after charities, women's organizations, and politicians became involved. The first two organizations to focus on changing the conversation were the American Society for Cancer Control (ASCC), a division of the American Cancer Society, and the Amanda Sims Memorial Fund (ASMF). The ASCC, established in 1910, focused mainly on female cancers (breast, cervical, and uterine) and promoted regular pelvic and breast examinations. The ASMF, established by John E. Sims in honor of his wife, focused solely on cervical cancer awareness (Lowry, 2010).

Together, these organizations moved cervical cancer screening forward in the journey toward public awareness and acceptance. According to Lowry (2010), as public awareness grew, so did physicians' understanding of the procedure. In 1948, the American Cancer Society sponsored the first National Cytological Conference and funded training on the Pap test procedure. This conference, along with passage of the Public Health Act of 1944, initiated greater awareness and participation in preventive health services and particularly in women's preventive health screenings (Lowry, 2010).

From the 1950s through the 1980s, annual gynecological examinations, including Pap tests, became more socially accepted and reduced cervical cancer death rates by nearly 60% (National Institutes of Health, 2010). However, preventive health services remained a luxury available only to women with private insurance coverage and those who could afford the out-of-pocket costs not covered by their insurers (Quadagno, 2005). Because insurance providers were not required to cover preventive health services, women who had no access to health insurance often skipped annual preventive screenings (Kaiser, 2013a).

The 1970s brought on the "war on cancer" with the signing of the National Cancer Act of 1971 by President Nixon. This amendment to the Public Health Service Act of 1944 improved cancer research and promoted public awareness of the necessity of cancer screenings (National Institutes of Health, 2016; Public Health Reports, 1944). In 1990, Congress again amended the Public Health Service Act by adding Title XV, a preventive health measure addressing breast and cervical cancer. This Act led to the creation of the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) under the CDC, allowing low-income, uninsured, and underinsured women to access timely breast and cervical cancer screening (Ryerson & Bernad, 2002).

According to Miller, Plescia, and Ekwueme (2014), a shortcoming of the NBCCEDP was its failure to provide coverage for those low-income women who needed follow-up care after a positive cancer screening. However, in 2000, Congress passed the Breast and Cervical Cancer Treatment Act, providing access to Medicaid coverage for the treatment of breast and cervical cancer following a positive screen from the NBCCEDP, thus correcting the shortcoming (Centers for Disease Prevention and Control, 2017c). Although this Act extended screenings to many women, disparities still exist today. According to program officials, 11.1% of all U.S.

women are eligible for screenings through the NBCCEDP, but the program has reached only 6.5% of these women (Center for Disease Control and Prevention, 2014; Miller et al., 2014). Despite the ability to detect and treat early stages of cervical cancer, it remains the 14th most frequently diagnosed cancer, with a prevalence of 8.1 cases per 100,000 women per year, and a mortality rate of 2.4 deaths per 100,000 women per year (National Institutes of Health, 2010).

Human Papillomavirus. In 1983, Dr. Harald zur Hausen found that human papillomavirus (HPV) caused cervical cancer (Centers for Disease Control and Prevention, 2017b). Aside from earning him a Nobel Peace Prize for physiology and medicine in 2008, this discovery led to further advancements in the treatment and prevention of cervical cancer over the last three decades. In 1999, the Federal Drug Administration (FDA) approved the first DNA test for HPV for women aged 30 and over (Centers for Disease Control and Prevention, 2017c). FDA recommends that women over the age of 30 reduce Pap testing to once every five years when combined with HPV testing. The most significant advance in HPV treatment came in 2006 when the FDA approved an HPV vaccination for young girls and boys. (Centers for Disease Control and Prevention, 2017b, Roxas, n.d.).

Through preventive measures like early detection and vaccination, cervical cancer is moving toward extinction. However, the elimination of cervical cancer is only possible if women actively participate in screenings and vaccinations. The following section discusses the current disparities in participation in cervical cancer screenings.

Current Disparities in Cervical Cancer Screening

Since the 1970s, the United States government has placed an emphasis on disease prevention through initiatives that set quantitative goals for prevention of various diseases. The Department of the Surgeon General launched the first Healthy People program in 1979, setting prevention goals for the year 1990. Since its inception, the Healthy People program has revised its goals every ten years (Healthy People 2020, 2017a) The most recent Healthy People 2020 program goal for cervical cancer is to reduce the incidence of the disease from the current rate of 8.1 cases in every 100,000 women to 7.2 cases in every 100,000 women (Healthy People 2020, 2017b).

To achieve such a reduction, Healthy People 2020 established a target of screening 93% of women between the ages of 21 and 65 (Tangka et al., 2015). Guidelines set by the United States Preventive Services Task Force (USPSTF), an independent body established by Congress in 1984, are the basis for these target goals. Since its inception, the 16-member Task Force has played an integral part in standardizing clinical guidelines for the United States, instituting an alphabetic scoring system based on evidence-based practice (U.S. Preventive Services Taskforce, 2017).

In 2013, cancer-screening guidelines receiving an “A” grade from the USPSTF advised women aged 21-65 to have a Pap test every three years. A combination of Pap test and HPV testing every five years lengthens the screening interval for women aged 30 to 65 (U.S. Preventive Services Taskforce, 2012). Therefore, according to USPSTF, to reach the goal established by Healthy People 2020 for successful reduction of the incidence of cervical cancer, 93% of American women need to participate in cervical cancer screenings every three to five years (U.S. Preventive Services Taskforce, 2012).

According to Tangka et al. (2015), in 2010 only 83% of all women participated in regular cervical cancer screenings, with numbers varying depending on race, usual source of care, income, and insurance status. For example, in 2010, only 64% of women without health insurance participated in regular cervical cancer screenings (Tangka et al., 2015).

Despite the efforts of organizations such as NBCCEDP and the American Cancer Society to promote preventive health services, the United States experienced a decline in cervical cancer screenings from the 1990s through 2010 (Ku, Bysshe, Steinmetz, & Bruen, 2016). According to Tangka et al. (2015), the decline in screening participation of the past two decades is related to growing poverty and unemployment, lack of a usual source of care, and the increased number of uninsured women in the United States. For example, the poverty rate increased by 3.2% between 1999 and 2012. As a result, the number of women eligible for programs such as NBCCEDP outpaced the number of women reached by the program (Tangka et al., 2015).

To reduce disparities in participation in cervical cancer screenings, the issues of increased poverty levels, unemployment, lack of usual source of care, and insurance status need to be incorporated into strategies (Engel, 2006; Katz-Olson, 2010). Only then can policymakers make informed decisions to reach the goals established by the initiatives proposed by Healthy People 2020. This policy analysis focuses on how changes in health policy impacting insurance status of low-income women in Pennsylvania have affected their participation in cervical cancer screening. This research intends to provide insight for policy-makers when considering changes in healthcare policy.

Health Insurance

Insurance Coverage and Preventive Health Screenings

Over the past several decades, studies have found a strong relationship between health insurance coverage and participation in preventive health screenings (Sabik & Bradley, 2015; Tangka et al., 2015; Taylor et al., 2006). Consistency of insurance coverage also correlates to higher participation, especially insurance that covers screenings with no out-of-pocket cost (Friedman et al., 2002). However, research on the impact of insurance uncertainty and the insurance benefit structure is limited. In Pennsylvania, many low-income women experienced uncertainty in health insurance coverage from 2012 until 2016. This policy analysis is based on original research on the Pennsylvania women who were most impacted by the turmoil of health policy changes, and the effect the changes had on their participation in cervical cancer screenings.

Lack of Health Insurance and Participation in Cervical Cancer Screening

Evidence shows that interruption of insurance, even for a brief time, can result in a decrease in participation in health services (Sudano et al., 2003). Over the past two decades, numerous studies have linked lack of insurance to disparities in preventive health services. Adams, Florence, Thorpe, Becker, and Joski (2003) based their research on the 1996-2000 Behavioral Risk Factor Surveillance System (BRFSS) survey, a national initiative designed by the CDC and implemented in collaboration with state health departments. The data provides an estimate of the extent to which public programs, income, and insurance status has influenced women’s participation in preventive health services such as mammograms, breast examinations, and Pap tests. Their findings show that income, insurance status, and race/ethnicity all independently affected participation in screenings. Among the insured in this study, the benefit structure and consistency of insurance coverage also played a role in preventive health services participation. Conversely, their findings suggested that lack of insurance created the greatest obstacle to participating in cervical cancer screening.

Examining data from the 2006 BRFSS survey, Ahluwalia et al. (2007) evaluated the prevalence of health insurance coverage among women, and the relationship of insurance coverage to participation in preventive health screenings. Their findings suggested that women without health insurance often forego necessary preventive health screenings. Additionally, their findings showed state-to-state variations in the degree of disparity in use of preventive health services. BRFSS data from 2010 also revealed a consistent relationship between disparities in insurance coverage and participation in preventive health services, according to Miller, King, Joseph, and Richardson (2010).

Other researchers have examined the relationship between increases in coverage for a group of individuals and the group's participation in health screening. In 2010, prior to Medicaid expansion in Pennsylvania, 13.4% or 526,000 women were uninsured. Through initiatives established by the ACA, including the expansion of Medicaid in 2015, this number decreased to 7% (Kaiser, 2016; National Women's Law Center, 2017) Understanding the current research on relationships between insurance coverage and preventive healthcare participation is a key element of my policy analysis.

The Impact of Health Insurance Coverage on Participation in Preventive Health Screening

In 2006, Massachusetts passed a comprehensive health reform law designed to provide health insurance to nearly all state residents. The reform in Massachusetts provides a case study on the impact of expanding health insurance coverage -- not only its impact on participation in preventive health screenings, but specifically on breast and cervical cancer screenings. Sabik and Bradley (2016) found that both breast and cervical cancer screenings increased, especially among low-income women (i.e., women at less than 150% of the federal poverty level). The number of women participating in cervical cancer screenings increased by 6% after receiving coverage.

Participation increased even among women who were already eligible for screening through the NBCCEDP. Sabik and Bradley (2016) suggested that providing health insurance may be more effective in encouraging preventive health care than subsidizing public health programs. This corresponds to reports from the NBCCEDP that show that a significant percentage of eligible women do not take advantage of the program (Centers for Disease and Prevention, 2014).

In 2008, the state of Oregon conducted an experiment in which the state provided Medicaid coverage to a group of uninsured low-income individuals to compare health service participation, medical expenses and overall health status to a similar uninsured cohort. According to Finkelstein et al. (2012), within the first year, participation in preventive screenings such as cervical cancer screening significantly improved compared to the control group. In both Massachusetts and Oregon, providing health insurance to low-income women corresponded to an increase in cervical cancer screenings.

Finally, evidence shows that women receiving expanded coverage through the ACA were more likely to receive cervical cancer screenings. Prior to the changes afforded by the ACA, many young women had no insurance coverage and therefore often skipped screenings. According to Robbins et al. (2017), the ACA provision allowing young adults to remain on their parents' insurance up to age 26 correlated with an increase in preventive cervical cancer screenings and early detection of cervical cancer in this age group. Unfortunately, these benefits do not extend to the millions of young women whose parents are uninsured and therefore have nothing to offer their daughters (Robbins et al., 2017). Without expansion of Medicaid services, disparities in coverage for these women continue. Many young Pennsylvania women experienced this scenario until the state expanded Medicaid in 2015.

The Pennsylvania Experience

As of 2015, 31 states had expanded Medicaid through the ACA; 13 opted out of Medicaid expansion; and five states requested participation in a waiver program (Kaiser, 2017a).

The ability of states to opt out of Medicaid expansion created a coverage gap in those non-participating states. Benefits did not exist for residents who were in the coverage gap, or those living in states that opted out, or simply those whose income levels did not allow for coverage.

Pennsylvanians had the unique experience of residing in the only state to choose all three paths (Kaiser, 2016). In 2010, Pennsylvania opted not to expand Medicaid. Then in 2014, Pennsylvania requested participation in a demonstration project entitled the Healthy PA Plan which was to begin the following year (Pennsylvania Department of Health and Human Services, 2013). However, a change in leadership brought a transition to the traditional Medicaid program in 2015 (Field, 2015; Pennsylvania Department of Health and Human Services, 2015). These changes had a direct impact on the lives of women whose incomes ranged between 33% and 138% of federal poverty level (FPL). Between the years 2010 and 2015, these women had no access to health insurance because traditional Medicaid coverage stopped at 33% FPL, and eligibility for Market Place Insurance packages under the ACA began at 138% FPL (Kaiser, 2016).

Those Pennsylvanians who fell into the coverage gap between 2010 and 2015 found some relief with the implementation of the Healthy PA Plan in January of 2015. However, this plan had complex benefit requirements and varying tiers of co-payments and coverage based on patient risk levels (Pennsylvania Department of Health and Human Services, 2013). Just as individuals were enrolling in the Healthy PA Plan and beginning to understand the benefit structure, Governor Wolf ended the program and transitioned coverage to traditional Medicaid (Field, 2015). The changing policies created an environment of uncertainty for a group of individuals who had already experienced disparities in health insurance coverage.

The policy changes that occurred in Pennsylvania afford a unique opportunity for research on the relationship between insurance coverage uncertainty and the utilization of preventive health services. With the intent of clarifying the relationship between preventive health access and insurance disparities, this policy analysis will examine the preventive health behaviors of a specific population that was at first denied health insurance coverage, and then thrust into a complex and confusing transition of health insurance benefits.

Summary

Advances in diagnostic medicine have dramatically reduced deaths from cervical cancer, yet women in the United States continue to die from the disease (National Institutes of Health, 2010). Disparities in access to cervical cancer screenings exist due to low income levels, insurance status and other compounding issues (Sabik & Bradley, 2015; Tangka et al., 2015; Taylor et al., 2006). Public health programs designed to reach at-risk women are less effective in increasing participation than programs providing consistent health insurance coverage (Ekwueme et al., 2014; Sabik & Bradley, 2015).

The ACA provides access to health insurance for millions of Americans (Kaiser, 2013a). The Pennsylvania experience with implementation of the ACA provides a unique example of the impact that state policies can have on implementation of federal policy, and more importantly, on the lives of women. By examining the relationship between cervical cancer screenings and insurance coverage among low-income women in Pennsylvania, this policy analysis will provide insights into how policy changes can affect the health of a considerable number of Americans.

CHAPTER 2

POLICY ANALYSIS

Chapter Introduction

The United States is the only western country that does not provide health care for its citizens (Robertson, Squires, Garber, Collins, & Doty, 2012). The problems affecting Americans without access to health care benefits are numerous, ranging from social and economic disparities to political strife (Engel, 2006; Katz-Olson, 2010). Yet Americans have resisted attempts to provide all citizens with health care throughout its history. While other western nations developed comprehensive social and healthcare programs in the early twentieth century, America chose to adopt lesser versions of these programs (Engel, 2006). According to Engel (2006), "America has proven itself consistent, if not compassionate" in meeting social and healthcare programs with prolonged opposition (Preface, xi).

The debate over healthcare is far from over, and the passage of the Affordable Care Act (ACA) has only added fuel the debate (Olakanmi, 2005). The core ideological issue relating to healthcare in America goes back to the beginning of American government. Jefferson and Hamilton made opposing arguments, in which Jefferson argued for the values of individual and state liberty with limited federal involvement, and Hamilton argued for collective or federal involvement (Olakanmi, n.d.). According to Olakanmi (n.d.), the debate has not dissolved: those who support Jefferson's view of individual liberty and those who believe in Hamilton's view of the collective continue the discourse over healthcare for America's citizens, and especially for the poor. This discussion illustrates divisions among lawmakers and citizens and has become woven into the fabric of the nation's institutions (Olakanmi, 2005).

According to Engel (2006), America's story of caring for the poor shows the nation's ambivalence. On the one hand, America is unwilling to abandon the poor to the care of private citizens; on the other hand, it is unwilling to provide funding to give them access to the same healthcare as those who can afford it (Engel, 2006). As healthcare in America evolved over the last century, this discourse resulted in a varied and often confusing system of health care for the poor (Engel, 2006; Katz-Olson, 2010; Quadagno, 2005).

This chapter describes the historical context of charity care and how it evolved into the current Medicaid system. Included in this chapter is an overview of the ACA with a focus on Medicaid expansion. The particular focus is on examining the debate over the enactment of full Medicaid expansion and the journey taken by Pennsylvania in achieving full Medicaid expansion. The final section of this chapter discusses the relationship between Medicaid expansion and its impact on women's healthcare.

Historical Context: Early 1900's

The history of America's struggle to provide care to the poor traces back to the Civil War. Prior to the Civil War, small towns and villages relied on the charity of citizens to support the poor, whereas cities relied on informal social structures often based on ethnic and religious ties (Engel, 2006). The growth of cities following the Civil War and through the beginning of the 1900s created a need for a more formal structure for providing health services, especially for those in need (Engel, 2006). Sectarian, nonprofit, community hospitals grew to meet the need alongside ethnic and religious communities (Engel, 2006). Their mission was to provide service and charity care to the poor (Engel, 2006). However, the "needy" were narrowly defined. According to Engel (2006), the deserving poor consisted of abandoned mothers, war widows, and orphaned children, a definition that excluded two parent families and childless adults.

By defining the deserving poor as women and children not under the protection of a man, poverty became an attribute of women, recently conceptualized as the feminization of poverty (Abramovitz, 1996; Engel, 2006). Weir, Orloff, and Skocpol (1988) attributed the feminization of poverty to the fact that, over the past century, women and children, particularly minority women and children, represent a growing sector of the poor. The feminization of poverty influences public health policy through the twentieth century and into present time (Engel, 2006; Smith & Moore, 2015).

The Sheppard-Towner Act of 1921 demonstrates the influence of the feminization poverty on public health policy (Engel, 2006). The Sheppard-Towner Act, championed by the League of Women Voters, grew out of concern for the alarming infant mortality rates among poor women (Engel, 2006). The Act provided for infant and maternal healthcare and education, both of which were funded through federal and state matching funds (Engel, 2006). Fueled by the Jefferson-Hamilton debate, the Sheppard-Towner Act received fierce opposition from physician groups and conservative members of Congress (Engel, 2006; Olakammi, n.d). In the January 1922 edition of the *Illinois Medical Journal,* an editorial summed up the resistance to the legislation by Jeffersonian-minded individuals by stating that it was Bolshevist in nature and designed by socialists (Anonymous, 1922).

The Sheppard-Towner Act met with opposition throughout the life of the legislation, finally resulting in its repeal in 1929 (Engel, 2006). However, during the eight years that it was in effect, the infant mortality rate declined, especially among the poor, non-white population (Moehling & Thomasson, 2011). The Sheppard-Towner Act of 1921 is one of the earliest examples of the fierce opposition and debate in the United States regarding government intervention in providing healthcare for low-income women. The opposition to the Sheppard-

Towner Act marked the rising power of the American Medical Association (AMA) (Moehling & Thomasson, 2011). According to Moehling and Thomasson (2011), the AMA feared government interference in medical services and believed that government supported programs would lead to non-medical provision of healthcare services. The political and economic power of the AMA played a large role in shaping healthcare throughout the last century, including programs designed to support healthcare for low-income Americans (Keiser & Jones, 1986).

From 1900 until the enactment of Medicare and Medicaid in 1965, other attempts to pass comparable legislation met a similar fate. In 1915, the American Association for Labor Legislation proposed a bill providing healthcare for low-income workers. This proposal met defeat in 1920 when the American Medical Association (AMA) stated its opposition (Engel, 2006). The early attempt at nationally supported health legislation spurred the AMA to define their resistance to any federal level attempt to provide health care insurance for all citizens. Hamovitch (1953) summarized the AMA's opposition in four key points:

1. National health insurance would impinge on patient choice of physician;
2. National health insurance would reduce physicians to the status of wage-earners, therefore failing to attract men of high standards;
3. National health insurance would force the physician to care for the unfortunate members of society, and upstanding individuals might go without care due to time and resources spent caring for indigent individuals;
4. National health insurance was un-American and socialistic (Hamovitch, 1953, 284-285).

Like the resistance of the AMA, opposition to national health insurance by commercial insurers was based on the socialistic feel of the program. The industry called for other types of reforms, including a lower tax on insurance companies and promotion of group insurance plans (Hamovitch, 1953). The four AMA key points and the motivation of the commercial insurers demonstrate the Jeffersonian influence on healthcare in America and highlight the desire for a capitalistic health system.

Through the 1930s and 1940s the AMA grew in strength and continued to fight to uphold the principles of the organization (Hamovitch, 1953). In 1933 the AMA formed the Bureau of Medical Economics to examine the economic problems of medical care with the goal of promoting the AMA's capitalist economic views (Hamovitch, 1953). Into the late 1930s and early 1940s, Congress made attempts to pass healthcare legislation to support care of the poor. This resulted in the 1944 Taft-Smith-Ball Bill (S.2143) (Olakanmi, n.d.), proposing grants for states to subsidize private insurance coverage for the medically indigent. However, Congress never voted on the Taft-Smith-Ball Bill due to opposition from both the AMA and the labor unions who voiced concerns that workers would be reduced to the status of paupers in order to obtain health insurance (Hamovitch, 1953; Olakanmi, n.d.).

The defeat of legislation such as the Sheppard-Towner Act and the Taft-Smith-Ball Bill is an example of the strong Jeffersonian influence in the early 1900s. During these years, most considered healthcare to be a private matter and not an issue appropriate for government action, especially at the federal level (Engel, 2006). They believed that poverty was the result of bad decisions on the part of the poor, who therefore were not deserving of support (Engel, 2006). As recently as the early 1950s, scholarly writings demonstrated these beliefs. For example, a 1953 Encyclopedia of Social Science described the poor as "sinful, lazy, worthless and of low biological stock" (Engel, 2005, p. 20). The strong capitalistic views of the AMA and others, such as the commercial insurance industry, combined with the societal views of the poor helped to establish the lens in which many Americans viewed healthcare in this country (Engel, 2006; Hamovitch, 1953).

One exception to the resistance to government-funded medical assistance occurred in the 1940s (Cohen, 1985). As we have seen, from the Civil War until the mid-1900s, the role of the federal government in healthcare remained minimal. However, along the way, many advocated for greater involvement by the federal government in insuring healthcare for America’s poor. Rhode Island laid the groundwork for the future of Medicaid in 1942, when the state requested the use of public assistance monies from the Social Security Act for direct payment to medical care vendors (Cohen, 1985). The Board declined this request. However, in 1949 the Board proposed authorization of funds to pay vendors for medical assistance, specifically defined as medical services for needy individuals. After some amendments, this proposal became part of the 1950 Public Law 734 (Cohen, 1985).

According to Cohen (1985), this was a miniscule step in the federal government’s role in providing medical care for the poor. But this small step forward by the federal government spurred Cohen’s passion, and he would later use this experience to craft the legislation now known as Medicaid. Cohen would become instrumental in the crafting of Medicare and Medicaid (Engel, 2006). He was an advocate who saw poverty and the effects of poverty as structural issues requiring structural solutions, and he spent his career in Washington advocating for policy to support the healthcare needs of the poor (Cohen, 1985).

To provide an example, as director of the research and statistics program for the Social Security Administration, Cohen helped draft the strategy for vendor payments for medical assistance (Cohen, 1985). This became part of Public Law 734 (Cohen, 1985). Cohen continued to advocate for coverage through the enactment of Medicare and Medicaid and was instrumental in developing the “three-layer cake” which describes the three components of the legislation: Medicare A, Medicare B, and Medicaid (Cohen, 1985).

Both the social and economic location of the 1960s provide context to the success of the passing Medicare and Medicaid legislation. The American health system was a growing economic engine through the first half of the 1900s and many began to see the need for reform. (Engel, 2006; Katz-Olson, 2010). As per Engel (2006), medicine in America reached its golden days in the 1960s with new surgical procedures and evolving treatments for chronic diseases. With increasing medical care came increasing cost. According to Engel (2006), by 1964, the healthcare sector was the sixth largest industry in the nation generating $33 billion in revenue annually. For comparison, healthcare revenues in 1949 were one-third that of 1964 (Engel, 2006). Likewise, consumer insurance plans were on the rise with 80% of working age individuals and 70% of children having hospital insurance (Engel, 2006). Those left without any coverage were the elderly and the poor, with only 63% of all elderly and only 40% of individuals with household incomes below $5,000 covered (Engel, 2006).

Only when American attitudes began to change in the 1960s did legislation supporting healthcare for the poor stand a chance. According to Engel (2005), many reformers and advocates in the 1960s began to see the poor as blameless victims of structural inequities, thus providing a window of opportunity for change. The evolving views coupled with the civil unrest and rising concerns over healthcare costs opened the window for the largest health care initiatives in American history (Engel, 2006).

The AMA was at the heart of not only the healthcare debate but also found itself enmeshed in the civil rights movement (Sidhu, 2016). The battle within the AMA is an example of the type of civil unrest that helped open the door for national health insurance. The AMA had a long history of racism including systematic exclusion of black physicians and lobbying to curtail the clinical practices of black physicians (Sidhu, 2016). In the 1960s the strife between black physicians and the AMA came to a head when black physicians began picketing AMA meetings and showing their support for Medicare and Medicaid (Sidhu, 2016). The conflict between the AMA and black physicians is an example of the civil unrest that provided a foundation for pushing reform forward.

President Lyndon Johnson shared the view of those who held the poor to be blameless victims of structural inequities (Engel, 2006; Matthews, 2014). In Johnson's 1964 State of the Union address he announced his war on poverty "in which the aim was not only to relieve the symptoms of poverty, but to cure it and, above all, to prevent it" (Matthews, 2014, p. 2). The enactment of the Medicare and Medicaid program was one of the initiatives set forth by the Johnson administration aimed at reaching that goal (Matthews, 2014). The following section describes the events leading up to the enactment of Medicare and Medicaid and discusses how the three-layer cake laid the foundation for future inequities.

The Three-Layer Cake: Medicare and Medicaid

The Democratic landslide victory in both the White House and Congress in 1964 paved the way for legislative movement on both Medicare and Medicaid programs (Cohen, 1985; Engel, 2006). The three programs known as the "three-layer cake" consisted of

- Medicare A, which provides hospital, nursing home, home health, and outpatient services to most citizens over the age of 65 through a taxable program;
- Medicare B, which provides elective physician services through federal funding and supplement cost to the beneficiary to citizens over the age of 65; and

- Medicaid, which provides medical care to eligible poor, blind and disabled citizens based on federal fund matching to voluntarily participating states (Engel, 2006).

The three-layer cake provides a complex web of benefits that varies by program and beneficiary. These variations helped to build a foundation of healthcare inequality into the 21st century.

The first two layers: Medicare A and B. As America moved out of the Great Depression into the more prosperous years of the 1940s and 1950s, the average life expectancy of US citizens grew. The white population experienced the largest increase. For example, in 1850, a typical white male had a life expectancy of 38 years, and by the 1950s, it had increased to 67 years; life expectancy of white females grew from 40 to 74 in those years. However, the life expectancy for other races, such as blacks and Hispanics, lagged behind that of whites: males increased from 32 years in 1850 to 61 in 1950s, and females from 35 to 66 years over the same period (U.S. Department of Commerce, Bureau of the Census, 1960).

During the early 1900s, many Americans paid for their healthcare either through private insurance plans or by direct payment from the individuals receiving the care (Corning, 1969; Engel, 2006). In 1950, the National Conference on Aging, the first event of its kind, created awareness of the problems facing the growing elderly population. The outcomes of the Conference spurred legislators to turn their attention to providing health insurance for the senior population (Corning, 1969).

In 1960, Congress enacted the Kerr-Mills Medical Assistance for the Aged Bill (Olakanmi, n.d.). This Act was an attempt to aid states in providing medical care to the aged, medically indigent. However, in a report by the Senate Special Committee on Aging in 1963, the bill was shown to have major defects, including minimal state participation, stringent eligibility testing, wide variations in types of support, and disproportionate federal grant monies (Special

Committee on Aging, 1963). After several years of legislative battles through the Kennedy and Johnson presidencies, the Health Insurance Benefits Act, known as the King-Anderson Bill, passed the Senate on September 2, 1964 (Olakanmi, n.d.). The bill passed the House as the Mills Bill on April 8, 1965. President Johnson signed Medicare into law as Public Law 88-97 on July 30, 1965, thus enacting the Medicare entitlement providing comprehensive coverage for hospital, nursing home, home health, and outpatient services for persons over the age of 65.

In response to the King-Anderson Bill, Republicans drafted the Byrnes Bill proposing a voluntary program that provided physician and hospital payments through the purchase of private insurance (Corning, 1969). The supplemental voluntary Medicare B program covering physician visits and outpatient services evolved from this bill. As of July 30, 1965, health care in America entered a new era of government involvement (Corning, 1969; Olakanmi, n.d.). Together, Medicare A (hospital insurance) and Medicare B (physician insurance) created the first two layers of the “Three-Layer Cake.”

The third layer of the cake: Medicaid. The Social Security Amendments of 1965, Public Law 89-97, also known as the Medical Assistance program and referred to as Medicaid, came to fruition as an afterthought (Smith & Moore, 2015). Medicaid, the third cake layer, saw little debate in Congress, as it was embedded deep within the 246 pages of legislation under the heading of “Improvement and Extensions of Kerr-Mills Program” (Cohen, 1985; Smith & Moore, 2015). According to Cohen (1985), neither the press nor members of Congress paid attention to the Medicaid components of the legislation due to the distracting addition of the voluntary program entitled Medicare B.

According to Smith and Moore (2015), although Medicaid came quietly into being, it was anything but an afterthought. Rather, it was a culmination of years of effort by Wilbur Cohen and

Arkansas Congressman Wilbur Mills. Cohen’s dream began in 1942 with a request to fund medical assistance for the poor from the Social Security Board of Rhode Island (Cohen, 1985). With the passage of the third layer of the three-layer cake, Cohen saw his dream of a medical assistance program for the poor come to fruition. It became a reality through the sleeping giant called Medicaid (Cohen, 1985).

Inequities of Medicare and Medicaid

The base of the three-layer cake was laid by the largest movement toward any national health legislative initiative in the United States and would remain so until passage of the ACA in 2010. While providing much-needed coverage for many Americans, the benefits of both Medicare and Medicaid created new disparities in healthcare coverage and access (Gornick, 2003), contributing to the inequities experienced by the poor. Although Medicaid is the focus of this policy analysis, it is relevant to examine the disparities in Medicare, since the programs became law together and the coverage disparities between the two are related.

Medicare Inequities

Legislation established Medicare A to provide healthcare to all senior US citizen (Corning, 1969). However, the program included a tax requirement, creating a barrier to entry into the program (Corning, 1969). To participate in the Medicare A program, an individual and/or spouse is required to pay into the Federal Insurance Contribution Act tax (FICA) for at least 10 years (U.S. Social Security Administration, 2017). This prerequisite constituted a barrier for individuals with limited work history, and for the poor (Gornick, 2003). Additionally, Republican support for the Medicare B benefit resulted in added barriers. While Medicare A policy required that participating providers adhere to Civil Rights legislation, the Medicare B policy did not contain this provision (Smith, 1998). This difference between Medicare A and

Medicare B created a further inequity in the distribution of government-supported healthcare insurance for the elderly.

By not requiring the same level of participation from both programs, the Medicare program created a system that limited access to non-white beneficiaries. As discussed by Smith et al. (2008), “achieving or even monitoring progress toward achieving the elimination of inequitable disparities in health care treatment is difficult” (p. 878). The combination of life expectancy differences, tax liability pre-requirements, and racial segregation created an environment of Medicare inequality which is still present today (Gornick, 2003). Instead of providing a safety net for all senior citizens regardless of work history and resources, the Medicare legislation created differentiated levels of access for the poor, and particularly for low-income women (Stone, 1989). Low-income women may not have the work history or spousal work history to qualify for Medicare A, or they may have limited financial resources to purchase Medicare B, thus partially or fully excluding them from the benefit, and extending the feminization of poverty (Stone, 1989). Medicaid followed a similar path, defining qualification criteria and developing an intricate relationship between federal and state oversight.

Medicaid Inequities

Medicaid coverage utilized unique criteria that further promoted the feminization of poverty (Katz-Olson, 2010). Medicaid was not a medical safety net for all the poor in this country. It began as a complex and confusing set of requirements that created barriers to entrance for eligible participants (Katz-Olson, 2010). Unlike Medicare, which is a federally coordinated program with consistent benefits across state lines, Medicaid has both federal and state components (Katz-Olson, 2010). The Medicaid program design requires minimal mandatory coverage in each state while allowing for some state flexibility in defining the recipient group.

Additionally, states can add to the program through optional coverage (Katz-Olson, 2010). Unlike Medicare, which requires uniform coverage across the country, Medicaid's complex coverage of health benefits from state to state created a challenging system for both state governments and recipients (Katz-Olson, 2010).

The Medicaid program required coverage for five categories of care, including inpatient and outpatient hospital care, laboratory and X-rays, skilled nursing home care, and physician visits (Katz-Olson, 2010). States could determine the scope of these services and of any optional services. This created variation in the types of services provided within each state (Katz-Olson, 2010). The mandatory eligible individuals in all states were those already covered by a public assistance program through the Aid to Families with Dependent Children (AFDC) program, as well as the blind and the permanently disabled. Initiated in 1935 as part of the Social Security system with the name of Aid to Dependent Children, AFDC provided welfare benefits to children living in a deserving poor situation (Engel, 2006; Katz-Olson, 2010). The deserving poor were defined as white children living in homes with a single parent, usually a mother (Abramovitz, 1996). Black children were not eligible for this benefit until the civil rights movement in the 1960s (Abramovitz, 1996; Katz-Olson, 2010).

Under the guidelines of the Social Security Act, states could establish criteria for this program, thus allowing for further state-to-state disparities in coverage for both the welfare and Medicaid programs. Medicaid coverage also applied to others, such as the blind and permanently disabled (Katz-Olson, 2010). However, here again, each state could determine the criteria based on the welfare levels of the individual state (Katz-Olson, 2010). Missing from eligibility to these programs were childless adults, especially men. According to Katz-Olson (2010), by the mid-1970s, Medicaid covered only approximately 60% of America's poor or near poor. This

Jeffersonian start to the Medicaid program, which limited federal influence and preserved the freedom of individual states, would haunt the Medicaid system from its inception until today and created inequality from state to state and along gender and racial lines (Katz-Olson. 2010, Olakanmi, n.d.).

According to Katz-Olson (2010), today, 70% of all Medicaid recipients are women who are primarily in their reproductive years, receiving care for childbearing, or nearing end of life and receiving nursing home care. A significantly smaller percentage of women of non-childbearing age and non-elderly, aged 45-64, receive Medicaid coverage (Katz-Olson, 2010). These statistics demonstrate that the “deserving poor” are still primarily conceptualized as “abandoned mothers and widows” (Katz-Olson, 2010, p.8). The association of eligibility for Medicaid with welfare guidelines helped to further embed the feminization of poverty into American health policy, as well as defining who was deserving of America’s safety net. Thus, the ingrained ideal of the deserving poor, and the Jeffersonian belief of limited federal oversight has followed Medicaid throughout its history and into the current debate over Medicaid expansion.

The following sections of this chapter provide an overview of the Medicaid program from its inception to its expansion under the ACA, and the discourse surrounding Medicaid that has continued to ingrain the feminization of poverty in American health policy over the past 50 years.

Medicaid: Enactment Through the Affordable Care Act

Medicaid got off to a bumpy start with little funding, resources, or thought to implementation, because the federal government envisioned Medicaid to be primarily a state-run program (Smith & Moore, 2015). The states were not prepared for implementation and thus, the resulting programs lacked standardization and compliance procedures, setting the stage for widespread fraud and abuse (Katz-Olson, 2010; Smith & Moore, 2015). From 1965 through the end of the century, the Medicaid program faced many challenges, including fraudulent billing at all levels, and substandard care, leading to the practice of maximizing profits at the expense of patient care throughout the country (Katz-Olson, 2010).

Medicaid, described as the sleeping giant at its inception, displayed the challenges of its structure through growing cost and abuse. Starting with a cost of $1.2 billion in the first year, Medicaid quickly grew to 16 percent of healthcare spending or $375 billion, accounting for 2.3% of the gross domestic product in the early 2000s (Katz-Olson, 2010). In response to these issues, states sought to reduce the eligibility of recipients as a means of controlling funding rather than facing powerful stakeholders who were driving up the cost of care (Katz-Olson, 2010). The following section highlight key stakeholders and their role in Medicaid costs.

Stakeholders

Those who benefit from the Medicaid program structure extended throughout many sectors of the American economy ranging from the obvious such as healthcare providers and insurers to those who had secondary gains such as large corporations (Katz-Olson, 2010). This section reviews the how the special interest of powerful stakeholders challenged the Medicaid system from enactment until present day by increasing cost of care while often decreasing services to patients (Engel, 2006; Katz- Olson, 2010).

States. From the enactment of Medicaid to present day, states struggled to balance the cost of Medicaid with the benefits of a growing Medicaid program. On one hand, states look to control their cost of supplying Medicaid and on the other hand states work to gain the federal dollars creating a continued struggle for state legislators. According to Katz-Olson (2010), state governments use federal funds to bring extra money into their budget through expanding Medicaid programs. Unfortunately, many of benefits from these programs never reach the intended recipient rather they are lost in provider costs and program oversight (Katz-Olson, 2010; Smith & Moore, 2015). Another key driver for state Medicaid program is the resulting employment and industry gains. It is estimated that states gain over $3 million dollars in business revenue for every $1 million in Medicaid dollars spent (Katz-Olson, 2010, p.204). Since a primary focus of Medicaid from enactment until the ACA was providing services to children and pregnant mothers as well as nursing home care of the elderly, legislators' decisions regarding Medicaid dollars often significantly impact access to services for low-income women (Engel, 2006; Katz-Olson, 2010; Smith & Moore, 2015). For example, in 2011, Pennsylvania spent 33% of their budget on Medicaid and received $1.15 federal dollars for every state dollar spent (Kasier, 2016b). Children made of 44% of Medicaid enrollees but only received one-fifth of the Medicaid dollars whereas the elderly and people with disabilities made up 35% of enrollees and accounted for 72% of the Medicaid spend (Kaiser, 2016b). These figures demonstrate several key challenges for the states such as Pennsylvania. First, Pennsylvania's support from the federal government creates budgetary incentive to keep Medicaid services despite legislative political discourse surrounding the program (Kaiser, 2016b, Katz-Olson, 2010; Smith& Moore 2015). Secondly, the influence of the healthcare industry such as nursing home, pharmacies, and durable medical equipment companies help drive the flow Medicaid expenditures (Katz-Olson, 2016; Smith & Moore 2015). The significant outlay to the nursing home industry demonstrates one of the significant resource allocation of the Medicaid system in which a large volume of resources goes to few recipients (Katz-Olson, 2016). Challenges for state legislators in balancing the political discourse surrounding nationally funded health care programs, lobbying by health care provider, and state budgetary challenges exposes the Medicaid program to potential for misappropriation and abuse (Katz-Olson, 2010, Smith &Moore, 2015).

Healthcare providers. Medicaid began with a mix of strange bedfellows consisting of federal and state programs with a societal class that demonstrated little to no political power such as poor women, poor elderly, children, and the disabled (Engel, 2006, Katz-Olson 2010). This unique environment created opportunity for health care stakeholders to lay their claim on government resources and determine the allocation of those funds while fearing minimal to no pushback from the recipients. Likewise, legislators could easily indulge powerful stakeholders and not suffer any political recourse from a powerless sector of society (Katz-Olson, 2010). Since 1965, the power of health care providers to influence Medicaid policy has grown. For example, Medicaid accounts for approximately 45% of all nursing home payment and most of nursing homes in the United States are for-profit entities (Katz-Olson, 2010, p. 184). According to Katz-Olson (2010), in 2006 the trade organization representing the nursing home industry spent $1.8 million in lobbying efforts and another $1.3 million in contributions to federal legislators (Katz-Olson, 2010, p. 184-5). These resources are not unlike those seen from other key stakeholder industries such as hospitals, durable medical companies and the pharmaceutical industry (Katz- Olson, 2010; Smith& Moore, 2015). Lobbying resources of healthcare industry focus on Medicaid expenditure and reduction of industry regulations and program oversight (Katz- Olson, 2010). The structure of for-profit entities receiving federal funds and determining care provision for federal program recipients is another example of the strong capitalistic influence over America’s healthcare system (Katz-Olson, 2010; Smith & Moore, 2015). The power of these stakeholders over the voiceless lives of low-income women further ingrain the feminization of poverty into the fabric of the healthcare system (Engel, 2006).

Insurers. In 1993, the Clinton administration began accepting waivers for states to move Medicaid programs to a managed care model (Kaiser, 2009). The Balance Budget Act of 1997 allowed for states to require beneficiaries to enroll in a managed care plan without obtaining a waiver from the federal government (Kaiser, 2009). This crucial change to the Medicaid system would allow for influx of private insurers into the Medicaid market thus changing the future of Medicaid program delivery (Klemm, 2000). Since 1997, Medicaid managed care organizations (MCO) grew in numbers and power. According to Kaiser Family Foundation (2014c), in 2009 enrollment of Medicaid beneficiaries in MCO was 71.7% nationally and 82.1% in Pennsylvania. The entrance of private insurers into the Medicaid system further entrenched the challenges faced by Medicaid recipients in having a voice in their own healthcare. According to Katz-Olson (2010), MCOs thrive in this system with increasing profits while beneficiaries continue to experience reduction in benefits, less providers, and substandard care. Similar to the efforts of the healthcare providers, MCO have strong lobbying efforts through trade organizations such as the American Health Insurance Plan (AHIP) which focus their lobbying efforts on increased resources, limiting benefits, and reducing cost of patient care (Katz-Olson, 2010). For example, in 2006 the AHIP spent over $7 million in federal lobbying efforts (Katz-Olson, 2010).

Efforts to reduce MCO spending often fall on the backs of low-income women beneficiaries. An example is the MCO industry 1990s decision to limit post childbirth stays to less than 24 hours (Annas & Mariner, 2011). Fortunately, the decision to limit hospital stays effected not only low-income women but women of many different economic levels (Annas & Mairner, 2011). This cost savings decision met resistance from all levels including hospitals, physicians and patients and in 1996 the federal government passed The Newborn and Mothers Health Protection Act requiring 48-hour hospital stay following childbirth (Annas & Mairner, 2011; The Newborn and Mothers Health Protection Act of 1996). The decision of MCO to place cost savings before clinical care demonstrates an example of the challenges in providing appropriate clinical care created by for-profit industry receiving federal funding (Annas & Mairner, 2011).

Corporations. An unlikely benefactor of the Medicaid program is large corporations. A common misperception is that Medicaid beneficiaries are unemployed (Froehlich, 2005; Kaiser,2017c, Katz-Olson, 2010). However, many are employed and often by large corporations who rely on the Medicaid system to insure their low-wage earning employees (Froehlich, 2005; Katz-Olson, 2010). For employers such as Walmart, which in 2005 cost Pennsylvania nearly $15 million in Medicaid coverage for their employees, the Medicaid program is part of their cost containment strategy (Katz-Olson, 2010, p. 219). According to O'Conner (2014), Walmart's low-wage workers cost taxpayers $6.2 billion in public benefits including Medicaid services. The Walmart strategy disproportionately effects women (Froehlich, 2005). Per Froehlich (2005), in 2001 65% of Walmart's hourly wage earners were women earning one-sixth less than their male counterparts therefore contributing to the feminization of poverty through employment practices (Engel, 2006; Froehlich, 2005). The strategy used by Walmart and other employers such as fast food chains and grocery stores often goes unchallenged by state lawmakers who fear the political and economic recourse of losing large employers (Bivens, 2012; Katz-Olson, 2010; O'Conner, 2014).

The sleeping giant known as Medicaid has awoken to become a mechanism for industries to fuel the capitalistic engine of the healthcare industry while further ingraining the feminization of poverty into the fabric of healthcare. In addition to the impact of industry on the health services of low-income women, legislation, since the enactment of Medicaid in 1965, added to the challenges faced by low-income women.

Medicaid and the Hyde Amendment

Medicaid received little legislative attention between 1965 and 1980, as America faced other challenges, such as the civil rights movement, the Vietnam War, and Nixon's impeachment (Katz-Olson, 2010). Despite these challenges, one legislative change was made in 1976 that would impact women's health through the present day (Katz-Olson, 2010). On September 30, 1976 Congress passed the Hyde Amendment, banning federal funds to pay for abortions except in cases where a woman's life was in danger, or in cases of incest or rape (Henshaw & Wallisch, 1984). Since healthcare funding for poor women of childbearing age often came through Medicaid, this act significantly impacted the lives of poor women.

Although abortion rights are not a focus of this policy analysis, the passage of the Hyde Amendment demonstrates the long-standing feminization of poverty and the centrality of regulating women's health choices in the debate over healthcare legislation in America (Henshaw & Wallisch, 1984). The following paragraphs highlight the debate over the Hyde Amendment through 2010 when the ACA was passed.

The last two decades of the twentieth century and the early years of the twenty-first century brought many attempts to restrict and control Medicaid expenditure, and to refine the role of the federal government in the management and funding of the Medicaid program (Katz-Olson 2010; Smith & Moore, 2015). Although a complete historical overview is beyond the scope of this policy analysis, it is important to note that the policy changes that occurred from the time of Medicaid's inception until the attempt to enact full Medicaid expansion under President

Obama, Medicaid remained limited in its reach and in its ability to fully provide medical services for the poor.

According to Katz-Olson (2010), Medicaid excluded many impoverished individuals, and often created structural barriers that limited access among those who were eligible. With the enactment of the ACA in 2010, President Obama made the most significant attempt to shift Medicaid into a program that would meet the needs of the poor and possibly reduce the feminization of poverty (Kaiser, 2013a). The following section describes the enactment of the ACA, the fate of Medicaid expansion, and the current environment for female recipients of Medicaid.

The Affordable Care Act

Enactment of the Affordable Care Act

Since the enactment of Medicare and Medicaid in the 1960s, many attempts were made to modernize the U.S. healthcare system and a few brave souls, Hillary Clinton as an example, attempted to nationalize healthcare (Katz-Olson, 2010; Smith & Moore, 2015). However, with all these attempts, the U.S. health system continued to lag behind other nations in both quality and cost control (Anderson & Frogner, 2008; Potter, 2014). For example, Anderson and Frogner (2008) found that in 2005 the median percent of gross domestic product (GDP) spent on healthcare for all countries in the Organization for Economic Cooperation and Development (OEDCD) was 9.1%. However, the United States spent 15.3% GDP. Compared to European countries such as France (11.1%), the United Kingdom (8.3%), and Germany (10.7%), it was obvious that health spending needed to be addressed in the United States (Anderson & Frogner, 2008).

The cost story only deteriorated from there. Per Anderson and Frogner (2008), from a public funding perspective, nearly 75% of OECDC dollars in other countries relied on public spending, whereas in the U.S., less than half of the funds came from public spending dollars in 2005. However, in total dollars, the U.S. spent more than European countries, and only covered 26% of Americans versus the near universal coverage provided by other nations (Anderson & Frogner, 2008). Unfortunately, Americans were not getting more for the healthcare dollar. Per Anderson & Frogner (2008), American life expectancy was lower than expected for the amount spent on healthcare, and Americans' health outcomes were just as likely to be the lowest of OEDC outcomes as they were to be at the top (Anderson & Frogner, 2008). These growing cost and quality concerns set the stage for Obama and his fight for affordable care for all Americans.

In his campaign for president, Barack Obama promised, as many had before him, to achieve access to healthcare services for most Americans. As President, he delivered on this promise during his first term in office when the 111th Congress passed Public Law 111-148 and Public Law 111-152, jointly referred to as the Patient Protection and Affordable Care Act, and better known as the Affordable Care Act (ACA) (Merida, Luxenberg, Connolly, & Magills, 2010; The Patient Protection and Affordable Care Act, 2010). President Obama signed these bills into law on March 23, 2010, marking a historic moment in the country's healthcare history (Merida et al., 2010). Although President Obama accomplished this landmark legislation within a little over a year from his inauguration, this achievement encountered numerous challenges along the way. The following section provides an overview of the ACA legislative implementation timeline, including several of the key battles leading to the enactment of Public Laws 111-148 and 111-152.

President Obama began his fight for healthcare reform shortly after his inauguration. In an address to the joint session of Congress on February 24, 2009, he promised to focus on healthcare reform even amid economic struggles (The White House, 2009a). The President continued his push for healthcare reform in his first year in office. During his March 5, 2009 White House Summit on Reform, President Obama stressed the moral and fiscal imperative of healthcare reform (The White House, 2009b). In doing so, he brought healthcare to the forefront of his bid to repair the economic issues of the country. President Obama once again made clear his goal of achieving healthcare reform in a September 9, 2009 address to a joint session of Congress in which he stated:

> But we did not come here just to clean up crisis. We came here to build a future. So tonight, I return to speak to all of you about an issue that is central to that future, and that issue is healthcare. I am not the first President to take up this cause, but I am determined to be the last. It has now been nearly a century since Theodore Roosevelt first called for health care reform. And ever since, nearly every President and Congress, whether Democrat or Republican, has attempted to meet this challenge in some way. (The White House, 2009c, n.p.)

Obama’s continued focus on healthcare reform would spur Congress forward into one of the most focused healthcare debates in U.S. history. The U.S. Congress, White House, and American industry were about to face one of the largest legislative undertakings since the civil rights era (Merida et al., 2010). In 2009, it was hard to find an American industry that was not focused on what the potential for a new health system might mean for the country and their businesses. This intense interest led to new level of lobbying in Washington.

Stakeholders. Everyone wanted to make sure their voice was heard as legislators took on the daunting task of passing the ACA. From restaurant owners concerned about full-time hour definitions, to unions, insurance companies and the American Association of Retired People (AARP), everyone had an agenda (Eaton, 2014; Krauskopf, 2013). Per Krauskopf (2013), lobbying records showed more than 1,000 companies, business groups, consumer advocates, unions, and other organizations visited Washington, D.C. in hopes of having their interests represented in the ACA. These numbers were momentous compared to a typical legislative process which attracted an average of 15 lobbying interests (Eaton, 2014; Kauskopf, 2013). Healthcare legislative lobbying in 2009 reached record levels, with a staggering $3.55 billion spent and over 3,700 individual lobbyists involved (Eaton, 2014; Suderman, 2013).

Key healthcare industry stakeholders who had high stakes in the process, ensured that their voices reached legislators and the White House, spending $392 million on lobbying efforts in 2009 (Steinbrook, 2009). For example, the AMA which sent 33 lobbyists to Washington at a cost of $17.62 million helped to curb the reach of the ACA into physician's payments (Eaton, 2014; Kaiser, 2011). Early proposals to require a fee from physicians participating in Medicare and Medicaid and a 5% cut on the top 10% of Medicare billers were never incorporated into the final legislation (Eaton, 2014). Far outspending the AMA were the pharmaceutical industry ($250 million) and the insurance industry ($160 million) (Steinbrook, 2009). These two sectors had significant stakes in healthcare reform, including regulatory requirements and access to new customers through insurance exchange markets (Merida et al., 2010).

The United States had never come closer to having a national health plan, but the lobbying efforts of the healthcare industry ensured that the ACA legislation would be driven by capitalist interests (Merida et al., 2010). For example, Medicaid expansion and the health insurance exchanges provided an opportunity for both insurers and the pharmaceutical industry to gain millions of new customers (Merida et al., 2010). The influence of key healthcare stakeholders would play out over the years following the enactment of the ACA. Per Martin et al. (2016), in 2014 spending in all sectors increased, including private health insurance ($991.0

billion), Medicaid ($495.8 billion), physicians and clinicians ($603.7 billion), and retail pharmacy sales ($297.7 billion). These increases were primarily due to the expanded coverage provided by both Medicaid expansion and the health insurance exchanges (Martin, Hartman, Benson, & Catlin, 2016). As the United States moved closer to health coverage for all citizens, the strong influence of healthcare capitalism was felt at all levels of legislation (Merida et al., 2010).

Legislators. The House of Representatives passed its version of healthcare reform after a heated battle over federal dollars and abortion (Merida et al., 2010). Representative Bart Stupak (D-MI) insisted on including the Hyde Amendment banning the use of federal dollars for abortions. This amendment was met with resistance from the pro-choice women's movement in the House of Representatives, and Speaker Nancy Pelosi fought to keep her party together to pass the legislation (Merida et al., 2010).

Finally, on November 7, 2009, the House of Representatives passed the Affordable Health Care for America Act on a vote of 220-215, with 39 Democrats voting against the bill and one Republican voting for it (Merida et al., 2010). The bill included a public option for health insurance and an amendment banning federal dollars for abortions (Merida et al., 2010). The Senate chose not to take up the House bill but instead chose to use House Bill H.R. 3590 as a vehicle by gutting it and inserting the Patient Protection and Affordable Care Act (Sellers, 2010). The bill passed the Senate along party lines with a vote of 60-39 (Merida et al., 2010; Sellers 2010).

Two senators challenged the bill: Senator Ben Nelson (D-NE) who held out for more Medicaid dollars for his state (referred to as the Cornhusker Kickback), and Senator Joe Lieberman (D-CT) whose "no" vote caused the Democrats to lose the necessary 60 votes to block a potential filibuster (Merida et al., 2010). Senator Lieberman took issue with the public option and expansion of the Medicare program. The Senate removed the public option from the bill to gain Lieberman's vote and Nelson eventually agreed to the bill (Merida et al., 2010). On Christmas Eve 2009, the Senate passed its version of the healthcare act containing no public option. It appeared that healthcare reform was going to happen (Merida et al., 2010).

During the debate over healthcare reform, an event occurred that could have changed history and the fate of healthcare in this country. Senator Ted Kennedy (D-MA), a lifelong advocate for healthcare for all Americans, died on August 25, 2009 (Merida et al., 2010). In a special election on January 19, 2010, Senator Scott Brown (R-MA) won the seat vacated due to Senator Kennedy's death. Scott Brown's victory meant that the Democrats lost their ability to block a filibuster, which required 60 votes (Merida et al., 2010). This change of events led President Obama to seek a procedural change to ensure the passage of the Patient Protection and Affordable Care Act. On March 21, 2010, the Democratic Party passed the Senate bill in the House with a vote of 219 to 212, with 34 Democrats and all 178 Republicans voting against the bill (Merida et al., 2010). Unlike Medicare, which passed with bipartisan support, ACA relied on the support of a single party (Corning, 1969; Merida et al., 2010; Olakamni, n.d.). The one-sided support for this major reform initiative demonstrated the political divide in America and set the stage for continued challenges to the implementation of ACA.

Beginning in June of 2010 and scheduled to last through 2020 (Kaiser, 2013a), ACA implementation faced, and continues to face, many challenges at the state and federal levels. According to Smith and Moore (2015), the ACA's challenges include enrolling 16 to 20 million uninsured; providing credible insurance; coordinating Medicaid implementation with private insurance coverage, Medicare, and the health insurance exchanges; and controlling the rising cost of healthcare. The implementation of Medicaid expansion is at the center of the ACA battle. The following section outlines the importance of Medicaid expansion to the success of the ACA, and the changes to Medicaid expansion due to legal challenges.

Medicaid Expansion Under the Affordable Care Act

A cornerstone of the ACA is the expansion of the Medicaid program. Under Section 2001 of Title II, the ACA expanded the Medicaid program to include non-elderly, non-pregnant individuals with incomes up to 138% of the federal poverty level (FPL) (Kaiser, 2013b; Swendiman & Staman, 2012; The Patient Protection and Affordable Care Act, 2010). Expansion of the Medicaid program would provide health care coverage to 25.4 million individuals who were currently without coverage (Kaiser, 2013b). The ACA boldly changed Medicaid so that, rather than simply adding groups to the ranks of the deserving poor, it re-conceptualized the program as a true income-based initiative for the support of the poor and near poor (Smith & Moore, 2015). However, in one stroke, the dream of all 50 states expanding Medicaid and distancing themselves from the stigma of the deserving poor, died before it became a reality.

The Supreme Court case of June 28th, 2012, *National Federation of Independent Business v. Sebelius* (2012) found that it was unconstitutional to mandate state participation in the Medicaid expansion (Swendiman & Staman, 2012). “The Court found that compelling the states to participate in a new grant program or else face the possible loss of all federal funds under the current Medicaid program was coercive and unconstitutional under the Tenth Amendment” (Swendiman & Staman 2012, p. 13). This ruling had a significant impact on the effectiveness of the ACA to provide health care coverage to many Americans and allowed for continued disparities in regional and state health care coverage (Kaiser, 2013b; Swendiman & Staman 2012).

Many regions around the country still feel the impact of the Supreme Court ruling. As of January 1, 2017, 32 states, including DC, had adopted Medicaid expansion covering about 74 million individuals or one in five Americans spending $553 billion dollars split between federal government (63%) and state governments (37%) (Kaiser, 2017f). However, 19 states are still without Medicaid expansion (Kaiser, 2017f). Furthermore, the states that are not participating in the expansion are those where citizens would most benefit (Kaiser, 2014a). For example, in Florida, Texas, and Georgia, 55% of the uninsured live under 138% FPL and nearly half of uninsured people of color live in states that did not expand Medicaid (Kaiser, 2014a). Gaining access to health insurance will be a challenge for these individuals (Kaiser, 2014a).

The ACA intended the expansion of the Medicaid system as a safety net providing insurance to the poor and near poor (Smith & Moore, 2010). Under the ACA, the face of the uninsured individual is a childless, nonelderly person of color who resides in the South and lives at or below the poverty level (Kaiser 2013b). For the 19 states that did not expand Medicaid, the likelihood of abolishing the stigma of the deserving poor and reducing the feminization of poverty is slim, in contrast to the opportunity provided by the 32 states that have proceeded to expand Medicaid.

Medicaid Expansion in Pennsylvania

National Federation of Independent Business v. Sebelius (2012) complicated Medicaid expansion by changing the law from its original conception as a standardized federal program like Medicare and reducing it to a state-administered program (Swendiman & Staman, 2012). After the Supreme Court decision, states could follow one of three paths: (a) they could fully expand Medicaid as was intended in the ACA; (b) states could continue administering the

Medicaid programs as they had prior to the passage of the ACA; or (c) states could apply for a waiver and offer a modified version of Medicaid expansion (Kaiser, 2017a).

Pennsylvanians had the unique experience of being the only state to choose all three paths. During the implementation of ACA, the political environment in Pennsylvania was unfavorable for Medicaid expansion (Kaiser, 2016). In 2010, with Republican Governor Tom Corbett and a Republican majority in both the House and the Senate, Pennsylvania opted not to expand Medicaid. However, in December of 2013, still under the leadership of Governor Corbett, Pennsylvania became one of the states proposing an alternative to expansion of Medicaid coverage for individuals earning up to 138% of the FPL (Corbett, 2012; Kaiser, 2014a).

Governor Corbett released the Healthy Pennsylvania Plan (HPP) consisting of three core objectives, including: (a) reforming Medicaid; (b) increasing access; and (c) stabilizing financing (Corbett, 2012; Pennsylvania Department of Public Welfare, 2013). Corbett's plan proposed to reform Pennsylvania's current Medicaid program while providing insurance options for single adults aged 21-64 who were living under 133% FPL, and parents living from 38-133% FPL. To reform Medicaid, Corbett's plan focused on the initiatives listed below:

- Simplifying 14 outdated, complex benefit plans;
- Improving personal responsibility;
- Applying work search requirements and a link to job training opportunities;
- Providing a safety net for the critical care of children, older Pennsylvanians, and persons with disabilities;
- Improving access and quality of care;

- Continually emphasizing the reduction of waste, fraud and abuse in all facets of service delivery (Pennsylvania Department of Public Welfare, 2013, p.13).

The federal government approved Corbett's HPP on August 28, 2014, and the Corbett administration planned for implementation starting on January 1, 2015 (Department of Health and Human Services, 2014). However, on November 2014, Pennsylvanians elected a new governor and with that, the plans for Medicaid expansion changed. Governor Tom Wolf, a Democrat, campaigned on expansion of Medicaid services and, as promised, enacted Medicaid expansion in 2015 (Field, 2015; Kaiser, 2015). Since that time, all Pennsylvanians earning under 138% FPL have been eligible for the Medicaid program (Kaiser, 2015, 2016).

Pennsylvania's unique journey from rejecting Medicaid expansion, to obtaining a Medicaid waiver, to fully enacting Medicaid expansion, is an example of the discourse surrounding the ACA and how the Jeffersonian belief in limited federal government oversight continues to influence policy. Since the enactment of full Medicaid expansion in Pennsylvania, the uninsured rate has declined from 10% to 6%, with over 700,000 more adults covered by Medicaid (Kaiser, 2017b). The ACA and Medicaid expansion played an important role in improving the lives of low-income women. The transition to full Medicaid allowed Pennsylvania to move away from stigmatizing the deserving poor and escalating the feminization of poverty as had occurred through earlier years of policy-making at the state and federal level (Abramovitz, 1996; Engel, 2006; Katz-Olson 2010). The next section reviews the role that Medicaid expansion played in the lives of these women.

The Affordable Care Act, Medicaid Expansion, and Women

Women are historically at greater risk for being uninsured or underinsured. According to Robertson et al. (2012), the number of uninsured women rose by 6 million over the past decade to 18.7 million. In addition to the risk of inadequate or absent health insurance coverage, women face other risks, including going without needed healthcare services due to cost constraints; being insured by a working spouse, placing them at a higher risk for loss of coverage; and being at risk for a higher premium for insurance secondary to childbearing risks (Robertson et al., 2012). The ACA, and especially the expansion of Medicaid, reversed many of the healthcare challenges that women faced. The changes implemented by the ACA would not come without political discourse and resistance. The following section reviews some of the key changes in women's healthcare enacted by the ACA and the expansion of Medicaid.

Preventive healthcare. Curative medicine is the foundation of the American healthcare system. According to Cogan (2011), for the last 50 years the American public health system and the healthcare system have operated separately. This led to a healthcare model dominated by individually-based curative medicine and has resulted in an expensive and poorly performing healthcare system (Cogan, 2011). Through the ACA, America's healthcare system began to move away from the curative model and toward a preventive model. The focus on preventive healthcare is a cornerstone of the ACA in that it provides preventive care without individual cost-sharing (Cogan, 2011).

To provide an example, the ACA mandates that women have access to preventive measures such as cervical and breast cancer screening through all insurance providers (The Patient Protection and Affordable Care Act, 2010). Additionally, on August 3, 2011, the Health Resource and Services Administration (HRSA) issued an interim final rule on preventive health measures that included recommendations from the Institute of Medicine (IOM) supporting the coverage of all Food and Drug Administration approved contraceptive methods, sterilization methods, and patient education, as well as counseling for all women with reproductive capacity (Cartwright-Smith & Rosenbaum, 2012).

The regulatory support of contraceptive services as a preventive measure arose from a history of noted cost savings to insurers and other evidenced-based findings that demonstrated the importance of averting unwanted pregnancy as a sound method for preventing serious health issues for women and their children (Aloysius, 2011). In fact, most employer-based health plans already cover contraceptive methods with some cost-sharing, and the National Business Group on Health recommends that insurance providers cover contraception as a cost-saving measure (Aloysius, 2011). Additionally, requiring contraceptive coverage is not an innovation, as 28 states currently require insurers to cover contraception (Jost, 2013).

However, the August 3, 2011 interim final rule was met with significant resistance from several powerful stakeholders (Jost, 2013). Religious leaders, including leaders of the Catholic Church, came out in force against coverage of contraception as an ACA preventive measure (Jost, 2013). Since the August 3rd interim final rule, the Department of Health and Human Services (HHS) recognized the concerns of the religious organizations and adjusted the regulations to exclude religious employers, imposing an August 1, 2013 moratorium on their participation (Jost, 2013). Included in the definition of “religious employers” are churches and nonprofit entities that exist for the inculcation of faith by religious organizations, including religious universities (Jost, 2013).

Religious leaders are not yet satisfied. From 2011 to 2013, there were forty federal lawsuits filed against the mandates (Jost, 2013). Although mostly filed by religious organizations, other lawsuits were brought by private sector, for-profit employers stating the religious beliefs of the owner, as well as one case that includes support from governors of seven states (Jost, 2013). The battle over covering contraception as part of preventive healthcare is an example of the discourse over women's healthcare in American politics.

This battle is far from over. In fact, on October 6, 2017, the Trump administration rolled back ACA mandates for coverage of contraception (Pear, Rutz, & Goodstein, 2017). This policy change immediately spurred threats of lawsuits from several state attorneys (Pear et al., 2017). Family planning is a mandatory service of Medicaid, and contraception coverage is a long-standing benefit of Medicaid (Kaiser, 2013b). However, until Medicaid expansion, many low-income women did not qualify for Medicaid services and therefore had no access to contraceptive coverage (Kaiser, 2013b). Now, low-income women living in states with Medicaid expansion are eligible for family planning and free contraception.

Access to contraception is just one example of how Medicaid expansion helped to reduce the feminization of poverty by providing increased control of reproduction for more low-income women. It is apparent that women's rights are at the center of the ACA debate. Originally, the first House bill, the Affordable Health Care for America Act, almost fell short of passage due to fierce debate over abortion rights. As stated earlier, Representative Bart Stupak (D-MI) fought to amend the law to uphold the Hyde Amendment of 1976 (Merida et al., 2010).

On March 24, 2010, only one day after signing ACA into law, President Obama issued Executive Order 13535 – Patient Protection and Affordable Care Act's Consistency with Longstanding Restriction on the Use of Federal Funds for Abortions, known as the Hyde Amendment (Ikemoto, 2010, The White House, 2010). This executive order provided further clarification that no federal funds were to support abortion except in the case of rape, incest, or when the life of the mother was in danger. Thus, through the Hyde Amendment, abortion is the only medical procedure banned from federal Medicaid funding (Ikemoto, 2012).

In upholding the Hyde Amendment, the ACA further restricts access to abortions by creating administrative challenges for private insurers offering abortions and participating in the exchange market (Ikemoto, 2012; Swendiman & Staman, 2012). Additionally, a regulation passed in 2010 banned abortion coverage from the high-risk insurance pools initiated in 2010 (Ikemoto, 2012). The abortion battle places an increased burden on women, especially women relying on Medicaid. According to Ikemoto (2012), the ACA abortion restrictions target low-income women, placing an excessive burden on them, thus adding to gender inequality.

Although the ACA fell short of providing abortion coverage for Medicaid recipients and still struggles over contraceptive rights for all women, the ACA made significant gains in protecting the rights of women (Kaiser, 2017c; Robertson et al., 2012). An important improvement is banning insurers from charging different premiums based on gender (Robertson et al., 2012). The ban supports women who purchase health insurance through the exchange markets or in the private sector. Additionally, regulations such as reducing lifetime limits on coverage, and increasing resources for pregnant women and new mothers, are examples of coverage improvements (Robertson et al., 2012).

Overall, the ACA improved the healthcare rights of women at all income levels. Importantly, the expansion of Medicaid services into an income-based benefit for all citizens has helped to undermine the concept of the deserving poor that has supported the feminization of poverty in America (Abramovitz, 1996; Engel, 2006). Through Medicaid expansion, the ACA improved the lives of nearly 25 million low-income women (Kaiser, 2017c). However, because States' rights override Medicaid expansion, not all women in America experience its benefits, and some are still subject to being stigmatized in relation to healthcare coverage.

Summary

Over the past century, America has struggled to find a balance between those who fundamentally believe in the Jeffersonian approach to policy and those who favor the Hamiltonian approach (Olakanmi, n.d.). This discourse played out in the healthcare policy debate from the early legislative attempts to enact programs like the Sheppard-Towner Act, through Medicare and Medicaid enactment, and into today's debate regarding the ACA. Instead of approaching ideological agreement in the past decade, I would argue that the two sides are further apart. Although passage of the ACA was an incredible step forward in America's healthcare policy, its single-party support created a deepening divide that plagues its future. Furthermore, the strong influence of private sector for-profit entities on the design of the ACA allows for the influence of capitalism to continue as a primary influence over healthcare delivery in this country (Merida, et al., 2010).

Medicaid expansion, a cornerstone of the ACA, provides healthcare coverage to nearly 25 million women, and is helping to reduce the impact of poverty on their lives. It is also reversing the feminization of poverty experienced by this country over the last century (Engel, 2006; Kaiser, 2017c). However, because Medicaid expansion is not a national program, many women do not experience its benefits and disparities along state lines continue to exist (Kaiser, 2017c).

This policy analysis focuses on the experience of women living in Pennsylvania during a unique period of policy implementation. As stated in Chapter 1, by examining women's participation in preventive health services during a time of health policy change, I expect to gain insight on how policy can change lives.

CHAPTER 3

CONCEPTUAL FRAMEWORK

Chapter Introduction

This chapter introduces the conceptual framework for this policy analysis, which includes results of empirical research on participation in cervical cancer screening by low-income women, the availability of preventive health services, and the insurance status of these women. Finally, an examination of models of health services utilization and the conceptual lens of feminist intersectionality will be discussed. This chapter demonstrates how these factors intersect and provides evidence supporting the application of these results to my proposed research.

Extensive literature exists covering a variety of aspects of cervical cancer screenings. These range from understanding disparities in utilization of screenings, to examining the influence of evolving clinical guidelines, to analyzing the impact of a national program aimed at providing cervical cancer screenings to low-income women. For this research, it is important to explore the range of research on women's participation in cervical cancer screenings, as it is relevant to the women who are the intended subjects of my research. However, I have limited my own research to the years between 2012 and 2016, a period in which Pennsylvania saw a change in health benefits due to newly implemented policies.

In these years, insurance coverage for many low-income women evolved from lack of coverage to full implementation of Medicaid benefits (Kaiser, 2017c). It is crucial to have a solid understanding of how lack of health insurance and/or intermittent health insurance can affect the preventive health behaviors of women.

This literature review discusses the existing body of knowledge on women's preventive health services in relation to insurance coverage, which is the subject of my proposed research.

The following sections explain how cervical cancer screening guidelines and awareness evolved over time, and the need for understanding how policy and insurance coverage both play a role in health services utilization. Not since the implementation of Medicare and Medicaid services in the 1960s has there been such an opportunity to provide widespread health insurance to low-income individuals. My research adds to the current body of knowledge by providing an understanding of disparities in use of cervical cancer screenings during a time of evolution in insurance policy.

As stated above, this chapter builds a foundation for the conceptual model that guides my research. I chose to use a widely-accepted model of health care access, the Behavioral Model of Health Services Use (BMHS) in combination with feminist intersectionality theory. In doing so, I create a framework that allows for a multi-faceted understanding of the complex nature of women’s health care.

Cervical Cancer Screening

The body of literature dedicated to the analysis of national trends in cervical cancer screening is extensive. The breadth of research provides insights into national trends in cervical cancer screening and their relationship to various socio-demographic factors. Most of the researchers examine national trends, making use of the National Health Interview Survey (NHIS). Fewer studies examine state-specific characteristics using data from state programs, health system data, and the Behavioral Risk Factor Surveillance System (BRFSS). Thus, a need exists to understand state-level participation in various programs.

This research explores the relationship between Medicaid expansion during the time of ACA enactment in the state of Pennsylvania, and participation in cervical cancer screenings by low-income women. Specifically, I propose to evaluate the utilization of screening services by this population between 2012 and 2016. Understanding participation during this period in Pennsylvania is important because changes in policy resulted in several modifications in available health insurance coverage options for low-income women. This policy analysis provides a greater depth of understanding of the impact of state-level health policy changes on a vulnerable population.

Trends in Screening Using National Data from the National Health Interview Survey (NHIS)

Studies using NHIS data provide insight into participation at the national level at a specific point in time, as well as longitudinal trends. The U.S. Census Bureau conducts the national health survey and has done so annually since 1957 (Centers for Disease Control and Prevention, 2017e). The survey breaks down participation by age, race, ethnicity, income, and insurance status (Centers for Disease Control and Prevention, 2017e). Findings from studies using NHIS data consistently demonstrate disparities among low-income, uninsured women who do not have access to a usual source of care (Hewitt, Devesa & Breen, 2004; Roland et al., 2013). Research that applies data from the NHIS informs policy and practice on the national level.

A limitation of this database is that it does not provide state-level or county-level detail. The fact that the NHIS does not support research into state variations constitutes a drawback when evaluating policy effectiveness and determining the need for additional community engagement (Centers for Disease Control and Prevention, 2017e). Furthermore, the survey design relies on women's self-reports regarding their participation, which limits its usefulness (Centers for Disease Control and Prevention, 2017e). The literature suggests that women over-report participation in cervical cancer screenings (Gordon, Hiatt & Lampert, 1993; Johnson, Archer & Outcalt-Campos, 1995). Despite these limitations, an understanding of national trends provides a foundation for state-level analysis for my research. The research reviewed in this section demonstrates consistent findings on a national level while remaining cognizant of the limitations of using national survey data.

Hewitt et al. (2004) examined data from the 2000 NHIS to determine which women were not tested for cervical cancer and the reasons for the failure to test. The findings of this study suggested that younger, low-income women without access to a usual source of care were at the highest risk for not receiving cervical cancer screenings. Hewitt et al. (2004) pointed out that several programs exist to provide free or low-cost screenings, such as the National Breast and Cervical Cancer Early Detection Program (NBCCEDP). However, few eligible women take advantage of these programs. As reasons for the low participation rate, the researchers cited lack of knowledge of the existence of such programs or of the eligibility requirements for qualifying for the NBCCEDP (Hewitt et al., 2004).

Like Hewitt et al. (2004), Sirovich and Welch (2004) published a study in which they examined NHIS data from the year 2000 to determine the frequency of cervical cancer screenings. This study asked women how many Pap tests they had had in the past six years. The researchers found that 93% of American women had had a Pap test sometime in their lifetime, and among women without a history of an abnormal Pap test, 55% reported annual screenings, 17% reported one screening every two years, and 11% reported screenings every three years (Sirovich & Welch, 2004).

Because the focus of the study by was to determine the general frequency of screenings, it did not examine other factors such as insurance status and income levels (Sirovich & Welch, 2004). Limitations of the study were like those reported by Hewitt et al. (2004) regarding the use of NHIS data. Additionally, in the process of estimating frequency, the researchers used several assumptions potentially allowing for overestimation of screening participation, thus resulting in significant limitations in the interpretation of the reported outcomes (Sirovich & Welch, 2004).

Selvin and Brett (2003) provided insight into the sociodemographic predictors of breast and cervical cancer screenings. Like Hewitt et al. (2004) and Sirovich and Welch (2004), they analyzed data from the 1998 NHIS data to determine the impact of several independent variables on participation by white, black, and Hispanic women (Selvin & Brett, 2003). Selvin and Brett (2003) found no significant difference in cervical cancer screenings based on race/ethnicity. However, findings did show that the largest barrier to screenings was the lack of a usual source of care (Selvin & Brett, 2003). Additionally, higher educational levels and access to either private insurance or Medicaid resulted in increased participation in services (Selvin & Brett, 2003). This result supports the findings presented by Hewitt et al. (2004).

The three studies reviewed in this section demonstrate consistent national trends relating to cervical cancer screening, as well as the shared limitations associated with use of NHIS data. The findings from these studies demonstrate the need for a more in-depth evaluation of state and local trends, as well as a better understanding of the impact of other factors, such as programs aimed at increasing screening participation and changing clinical guidelines.

Clinical Guidelines for Cervical Cancer Screening

Revisions to cervical cancer screening guidelines through the past few decades include modifications that have altered the recommended age for initiation and termination of screening, and new recommendations on the frequency of screening. The clinical guidelines of the U.S. Preventive Service Task Force (USPSTF) include the new guidelines proposed by the American Cancer Society in 2002 (U.S. Preventive Services Taskforce, 2012).

As evidence continues to improve, recommended initiation of screening for young women has changed. Through 2002, guidelines suggested that screenings begin with the onset of sexual activity or by age 18 (Sabik & Bradley, 2016). In 2002, the guidelines were revised to update the time for initiation of screening to three years following sexual activity, or by age 21. In addition to the later initiation of services, the guidelines also recommend screenings every three years rather than the former annual screenings. Finally, guideline updates now include recommendations to eliminate screenings for women who have undergone a total hysterectomy, including removal of the cervix (Sabik & Bradley, 2016; U.S. Preventive Services Taskforce, 2012).

To understand the impact of the new guidelines on clinical practices, Solomon, Breen, and McNeal (2007) used several years of data from NHIS to predict the number of potential screenings in several different scenarios. These ranged from no change in current practices to full implementation of the new guidelines. Results from this study concluded that 75 million cervical cancer screenings would occur in 2010 with no change in screening behaviors, as compared to only 35 million that would occur with full conformity to the new clinical guidelines (Solomon et al., 2007). Solomon et al. (2007) foresee the opportunity of reducing unnecessary screenings and allocating resources more appropriately. In discussing the limitations of the NHIS data used in their study, the researchers cite the sample selection, the self-reported recall of screenings, and the specificity of the NHIS regarding reasons for screening (Solomon et al., 2007).

This study and other similar ones demonstrate the complexity associated with the implementation of preventive healthcare services, in that researchers must consider many variables, including policy, clinical guidelines, and socioeconomic influences. Understanding the complexity of factors that influence decisions made by women who access preventive health services is an underlying theme of my policy analysis. The conceptual framework discussed below addresses this complexity.

In addition to understanding current practices and their relationship to clinical guidelines, it is also important to understand the demographic factors impacting implementation of the guidelines. For instance, research on the overuse of cervical cancer screenings revealed that post-hysterectomy women, women over the age of 65, and women with private health insurance and incomes greater than 400% of the national poverty level were more likely to receive unnecessary or more frequent screenings than recommended by clinical guidelines (Kepka et al., 2014). This study, which used 2010 NHIS data, is of interest to my policy analysis because it highlights the challenges faced by privately insured women of higher socioeconomic status, who were the subjects of more screenings than recommended (Kepka et al., 2014). The limitations of this study are consistent with others that made use of NHIS data, including sample constraints, question specificity, and lack of additional knowledge associated with reasons for screening or absence of screening (Hewitt et al., 2004; Selvin & Brett, 2003; Sirovich &Welch, 2004).

Roland et al. (2013) used 2000-2010 NHIS data to examine the changes in clinical practice following the 2002 guideline revisions mentioned above. The study found that healthcare providers adopted new guidelines slowly, such that many women who were sexually active at younger ages had more frequent screens than recommended under the new guidelines. Additionally, screenings associated with requests for birth control continued as had been the customary practice, ignoring guideline recommendations (Roland et al., 2013). This research demonstrates how clinical guidelines often conflict with currently accepted practices, creating confusion for both provider and patient. Roland et al. (2013) reported similar study limitations associated with NHIS data as others (Hewitt et al., 2004; Selvin & Brett, 2003; Sirovich & Welch, 2004).

The studies in this section demonstrate how, as new evidence surfaces, physicians, health insurers, and the public require re-education for acceptance of new guidelines, and how advances in healthcare knowledge add a level of complexity to participation in preventive healthcare.

Program Evaluation of the NBCCEDP

The National Breast and Cervical Cancer Early Detection Program (NBCCEDP) was launched in 1990 to provide grant funding to the states for cancer screenings and educational programs for uninsured and under-insured women (Centers for Disease Control and Prevention, 2017d). The Public Health Service Act created the NBCCEDP with oversight by the CDC, to provide funding to all 50 states, five territories, and 11 American/Alaskan Native Indian Tribes (Ryerson & Bernard, 2002). Several studies examined the effectiveness of the NBCCEDP, including Bernard, Royalty, Saraiya, Rockwell, & Heisel (2015); Miller, Hanson, Johnson, Royalty, & Richardson (2014); and Tangka et al. (2015).

Tangka et al. (2015) examined the impact of the NBCCEDP on the national and state level over time, concluding that a very small percentage of women who were eligible for screenings received program services. The researchers gathered data to determine the number of eligible women on a national and state level. The data was assembled from five sources: the U.S. Census Bureau, NHIS, BRFSS, program data from NBCCEDP, and the Medical Panel Expenditure Survey (MPES) (Tangka et al., 2015). They then compared it to the number of women who received screenings from the NBCCEDP and other sources. They also analyzed the change in the percentage of eligible women who received screenings between 1997 and 2012.

The results of this study not only showed no increase in the proportion of low-income women receiving screenings but rather, found that the number of women eligible for screenings outpaced the number of women screened (Tangka et al., 2015). Tangka et al. (2015) cited an increase in the poverty level from 11.8% in 1991, to 15.0% in 2012, as the reason for the increase in eligible women. In addition, the results of the study pointed to substantial differences across age groups, race/ethnicity, and by state (Tangka et al., 2015).

Furthermore, highlighting the importance of state-level research, studies have shown that the proportion of eligible low-income women screened varied from 1.5% to 32.7%, depending on the state. Finally, the researchers concluded that seven percent of eligible women received screenings through NBCCEDP, and 60.2% of eligible women who were screened did not participate through the NBCCEDP. The remaining 33.3% of eligible women received no screening (Tangka et al., 2015), a proportion that is significantly higher than the national figure of 17% (Healthy People 2020, 2017b). As in other studies, Tangka et al. (2015) cited lack of insurance and lack of a usual source of care as possible reasons for the shortfall (Hewitt, Devesa & Breen, 2004; Sirovich & Welch, 2004).

According to Tankga et al. (2015), the use of data from multiple sources was a limitation of this study, in addition to the limitations cited by other researchers on the use of NIHS data (Kepka et al., 2014; Roland, et al., 2013; Sirovich & Welch, 2004). Tankga et al. (2015) also pointed out limitations in the BRFSS data, because landline telephone interviews may have led to under-representation of the population due to the transition away from the use landlines.

Several other studies have examined the effectiveness of NBCCEDP (Adams et al., 2003; Bernard et al., 2015; Ekwueme et al., 2014; Miller et al., 2014; Miller et al., 2015). These researchers reached essentially the same conclusions as Tankga et al. (2015), i.e., that the

NCBBDEP reaches a small portion of the intended population and this varies significantly based on state, race/ethnicity, and age. According to the findings of Bernard et al. (2015), women at the highest risk for never receiving screenings or rarely receiving screenings (defined as less than one screening in the past five years), included women older than age 50, Asian and Pacific Islanders, American Indians or Alaskan Natives, multiracial women, and those living in non-metro areas or in the South. This study highlighted the challenges of the NCBBEDP in reaching all members of the intended population and is consistent with the findings of Tankga et al. (2015).

Adams et al. (2003) examined the effects of public programs such as NCBBEDP, including factors such as income level and insurance status, on the probability of receiving both mammography and cervical cancer screenings. Analysis using state-level BRFSS data found results consistent with other studies showing disparities in low-income uninsured and under-insured women as compared to women with higher incomes and insurance (Adams et al., 2003). The authors reported limitations associated with large sample size bias towards significance, as well as the ecological design of the study, and limitations associated with the use of self-reported survey data (Adams et al., 2003). Overall, this study provided early insights into consistent barriers of access to screenings for low-income women.

Although the NCBBEDP program reaches a small proportion of low-income women, its effectiveness in terms of lives saved and quality of life, supports the need for the program, as well as the fact that it provides access to screening for all women (Centers for Disease Control and Prevention, 2017c). Ekwueme et al. (2014) examined the benefits in relation to life years gained, quality-adjusted life years gained, and death averted by NCBBEDP screenings from 1991 through 2007. The researchers used a cervical cancer simulation model, enabling them to compare NCBBEDP program outcomes to outcomes of screening without the program, and to outcomes for women who never received screenings (Ekwueme et al., 2014). The findings of Ekwueme et al. (2015) indicated that the program provided a significant boost in both life years gained and quality-adjusted life years. This study supports the view that efforts to provide consistent cervical cancer screenings will improve overall quality of life and reduce mortality.

The NCBBEDP is a federally funded program initiated at the state level. The effectiveness of this program is well-documented, although it reaches only a small proportion of low-income and underserved women (Centers for Disease Control and Prevention, 2017c). In addition to the NCBBEDP, other state and institutional programs reach a larger portion of low-income and underserved women. The following section reviews research related to these other programs, highlighting the growing needs of low-income women, the impact of insuring more women, and the usefulness of understanding state-level data for the purpose of improving policy.

State and Local Cervical Cancer Screening Programs

Fewer studies examine specific state- or local-level participation in cervical cancer screenings than studies undertaken at the national level. At the county level, a study by Coughlin and King (2010) explored the correlation between commuting times and the use of public transportation and participation in both breast and cervical cancer screenings. For this study, the researchers gathered data from the BRFSS and the U.S. Census for 39 metropolitan statistical areas (MSAs) of greater than 1.5 million residents (Coughlin & King, 2010).

The researchers found no significant relationship between commuting variables and receipt of either breast or cervical cancer screenings (Coughlin & King, 2010). The study did point to a weak association between a higher participation in cervical cancer screenings and women living in counties where greater than three percent of the women had access to a car

(Coughlin & King, 2010). The limitations of this study were similar to reports by others using both BRFSS and the U.S. Census data (Adams et al., 2003; Tangka et al., 2015). Coughlin and King (2010) also cited lack of data associated with work location and proximity to healthcare providers, and the variation in types of transportation in different metropolitan service areas (MSA) across the United States. The findings of this study are interesting because they demonstrate the complexity of factors that influence participation in healthcare.

In a state-level study, Zhan and Lin (2014) used data from Texas to explore the association of three social domains, including race/ethnicity, socioeconomic status (SES), and geographical location, with the prevalence of advanced–stage diagnosis of cervical cancer. The researchers applied the Behavioral Model of Health Service Use (BMHS) to examine individual and contextual variables, and found significant association of both race/ethnicity and SES disparities, with an advanced–stage diagnosis (Zhan & Lin, 2014). These state-level findings by Coughlin and King (2010) and Zhan and Lin (2014) are consistent with national findings (Tangka et al., 2015) and demonstrate the need to have a clearer understanding of screening disparities at the state level.

This section examined cervical cancer programs at both the national and state levels, as well as cervical cancer screening guidelines, and the evolution of programs and guidelines over time. For this policy analysis, knowledge of screening guidelines must be understood in conjunction with current literature on women and preventive health and insurance status, which is the focus of the following section.

Empirical Research on Women's Use of Preventive Health Services

A review of the existing body of knowledge on the relationship between preventive services utilization and health insurance coverage has a direct bearing on my proposed policy analysis, which examines participation in cervical cancer screenings by low-income women during a time of insurance coverage transition in the state of Pennsylvania.

Women are historically at greater risk for being uninsured or underinsured than men. Per Robertson, Squires, Garber, Collins & Doty (2012), the number of uninsured women rose from six million to 18.7 million over the decade preceding the enactment of the ACA. There may be many reasons for inadequate or absent health insurance coverage among women. Women who are insured by a working spouse are at a higher risk for loss of coverage, and women are charged a higher premium for insurance due to their gender and the risks related to childbearing (Robertson et al., 2012). As a result, due to prohibitive costs, they are at risk of foregoing needed healthcare services.

However, under ACA, the landscape of health care services is changing from emphasizing curative care to a greater emphasis on preventive care (Cartwright-Smith & Rosenbaum, 2012). Per Aloysius (2011), the American public health system and the healthcare system have operated separately for the last 50 years. This led to a healthcare model dominated by individually-based curative medicine and an expensive, poorly performing healthcare system (Aloysius, 2011; Cartwright-Smith & Rosenbaum, 2012). By driving preventive healthcare, the ACA provides an opportunity to access preventive services without cost-sharing (Aloysius, 2011). Specifically, the ACA mandate gives women access to cervical and breast cancer screenings through all insurance providers without cost-sharing (Kaiser, 2013a).

There is a wealth of literature examining women’s access to health services. The research includes factors such as insurance status, socio-economic status, health system structural limits, and a woman’s own beliefs about her health care. For this policy analysis, I chose to narrow my literature review to research that includes women's access to preventive services and insurance status. The following discussion addresses these areas.

Preventive Screenings and Health Insurance

Screenings. Taylor et al. (2006) utilized secondary data from the Medical Expenditure Panel Survey (MEPS) 2000 to examine women's use and expenditure for medical care in the United States. One of the key areas examined by these researchers was preventive health services, which they defined as "preventive health services obtained during the two years preceding 2000 including blood pressure check, cholesterol check, complete physical, flu shot, Pap test, breast examination and mammogram for women over 40 years" (Taylor, Larson & Correa-de-Araujo, 2006, p. 68). Taylor et al. (2006) examined medical care use and expenditures in relation to several socio-demographic variables, including insurance status, income, and educational level. The results of this study indicate that 94% of women received preventive health care during the year. However, this result varied based on level of education: 90% of women with less than 12 years of education received preventive services, as compared to 92% of women with 12 years of education, and 97% of women with higher education (Taylor et al., 2006).

In addition to educational level, insurance status also correlated with use of preventive health services. Among women under the age of 65, only 71% of women who were uninsured received services, as compared to 94% of those who were publicly insured (defined as those covered by Medicare or Medicaid), and 92% of women with private insurance (Taylor et al., 2015). Taylor et al. (2006) found that women in the lowest income category, poor/near poor, were less likely to obtain preventive services compared to middle- or upper-income women. Research shows that women with the lowest family income had the highest average health care expenses as compared to middle- and high-income women, with a greater proportion of the expenses dedicated to inpatient and home health services rather than to ambulatory care services. Uninsured women had the highest proportion of out-of-pocket expenses (51%), compared to those who were publicly insured (11%), or privately insured (23%) (Taylor et al., 2006).

Finally, Taylor et al. (2006) found that women who suffered from certain disadvantages, such as being widowed, or living in rural areas, women in poor health, or those with less than a high school education, were more likely to spend 10% or more of their income on health care. A key conclusion drawn from this research is that an immediate consequence of lack of insurance coverage is that uninsured women are less likely to use preventive health services (Taylor et al., 2006).

The limitations of this research were like those cited by others who made use of large national databases, such as being unable to extract state-level information. Taylor et al. (2006) stated that they were unable to examine specific regional behaviors and sociocultural orientations influencing access to health care. This research also demonstrates the importance of understanding the influence of variables such as education and income, as well as insurance status. Taylor et al.'s (2006) research suggests that, regarding use of preventive services, the behaviors of low-income women will change as the insurance environment changes. During implementation of the ACA in Pennsylvania, individuals experienced a period of transition which created insurance uncertainty (Kaiser, 2015). Understanding the influence of changing insurance policies on impacted individuals is the focus of this study.

Like Taylor et al. (2006), Ahluwalia et al. (2007) provide a historical foundation for this policy analysis. These researchers used BRFSS data to examine barriers to accessing preventive services for historically marginalized women (Ahluwalia et al., 2007). They studied the relationship between the health insurance status of working-age women and their utilization of preventive services (Ahluwalia et al., 2007). Considering factors such as individuals' health-related risk behaviors, chronic health conditions, and use of preventive services, Ahluwalia et al. (2007) found a wide variation in health insurance coverage from state to state, and by age and race/ethnicity. These findings were consistent with those of Taylor et al. (2006) in that they showed that women without health insurance were less likely to utilize preventive health services such as clinical breast exams, mammograms, Pap tests, or colorectal cancer screenings (Ahluwalia, Bolan, & Garvin, 2007). The report from the CDC by Ahluwalia et al. (2007) is consistent with findings from studies examining cervical cancer screening using BRFSS data (Coughlin & King, 2010; Zhan & Lin, 2014).

Since this policy analysis examines health service utilization after 2010, studies conducted during this time-period are particularly relevant. A 2010 study on breast cancer screenings summarized BRFSS data on mammography use by women ≥40 years and provided baseline data to examine ACA policy implementation. In that year, according to the study, mammography use was lower among women who had no health insurance or who did not have a usual source of health care (Miller, King, Joseph, & Richardson, 2012).

In their discussion, the researchers pointed to key components of the ACA aimed at improving access to mammography. These included a provision for federal cost-sharing for states that were expanding Medicaid services and a provision eliminating costs associated with preventive services (Miller et al., 2012). Additionally, Miller et al. (2012) concluded that public health organizations should monitor mammography screenings and other clinical preventive services during implementation of the ACA. Limitations of this study are consistent with others using BRFSS and NHIS data, such as use of self-reported data and lack of follow-up questions (Adams et al., 2003; Tangka et al., 2015).

The conclusion drawn by Miller et al. (2012) indicates a need for further research to show how the period of transition into full implementation of new regulations can complicate personal medical decisions, and how these changes may impact participation in health services. In Pennsylvania, the transition from non-coverage to implementation of the Healthy PA Plan and finally, to fully expanded Medicaid services, created uncertainty for low-income individuals. Per Smeltz (2015), "Low-income families who might have waited months for medical assistance last winter are enrolling within weeks under Pennsylvania's Medicaid expansion, sailing through simplified applications that helped them see doctors faster" (para. 1). This news article is an example of how a change in policy can impact the health behaviors of individuals. My policy analysis focuses on this critical time of policy fluctuation and provides insights as to how individuals interact with policy.

Health insurance. Research examining intermittent changes to health insurance coverage over time also provides insight for my research, as the period of interest for my study incorporates transitions in health insurance benefit levels affecting the research participants. Sudano and Baker (2003) used data from the National Health and Retirement Study (HRS) to examine the influence of intermittent insurance coverage on the utilization of preventive services for individuals aged 51-61. They found that lack of coverage for any period of time corresponded to a reduction in the use of preventive health services (Sudano & Baker, 2003). Additionally, they found a "dose-response" effect on preventive service use in which, as the non-coverage episodes rose, use of preventive services declined. Individuals whose coverage had been interrupted continued to lag behind those who were insured on a continuous basis, even after obtaining health insurance (Sudano & Baker, 2003).

There are several limitations noted in Sudano and Baker's (2003) research. First, their findings are not generalizable to other age groups, thus limiting the study's applicability to my research on women ages 21-64 (Sudano & Baker, 2003). Secondly, research data from HRS is only available during three different time points, resulting in potential underestimation of changes in the health insurance status of individuals (Sudano & Baker, 2003). Finally, the study did not account for participation in free screenings provided to uninsured individuals, again potentially resulting in underestimating the influence of intermittent health insurance coverage on an individual's behavior (Sudano & Baker, 2003).

The research of Sudano and Baker (2003) suggested that gaps in coverage reduce the frequency of preventive health activities. Their work illustrates the importance of having consistent health insurance coverage. However, having health insurance coverage does not always correspond to having the necessary coverage for a screening, and this too may influence participation in preventive health practices. Friedman et al. (2002) examined the influence of insurance coverage on physician's visits and on women's use of cancer screenings and Pap tests. Examining claims data from fee-for-service and preferred provider health plans, the researchers found that the benefit structure influenced whether women received a Pap test (Friedman et al., 2002). The plans that reduced out-of-pocket expenses for physician visits showed a significant association with use of preventive services (Friedman et al., 2002). Additionally, Friedman et al. (2002) found this correlation to be strongest among hourly wage earners versus salaried workers.

The limitations of this research included shortcomings in the use of claims data and the inability to capture data on care covered by other payment sources, such as a spouse's insurance coverage (Friedman et al., 2002). Additionally, the researchers eliminated race and education variables from the multivariate models, although Friedman et al. (2002) did feel that race and education played a significant role in the outcomes. These limitations may explain inconsistencies with findings from other research in which race/ethnicity and education influenced participation in preventive health care (Ahluwalia et al., 2006; Taylor et al., 2010; Zhan & Lin, 2014).

Friedman et al. (2002) concluded that policy-makers should be aware of the impact of benefit structures when planning changes in the financing and delivery of health care. This would prevent adverse impacts on the use of preventive services. Findings from this research support the rationale for the proposed policy analysis, by demonstrating the need for further evaluation of the impact of policy on health services utilization.

Research shows that utilization of preventive services increases with insurance coverage. A recent study by Robbins et al. (2015) found that the expansion of dependent insurance coverage under the ACA is positively associated with detection of early stage cervical cancer. These researchers concluded that early findings on ACA implementation (2011-2012) suggest an association between the ACA provision on dependent coverage expansion and cervical cancer stage at diagnosis, and receipt of fertility-sparing treatment among young women aged 21 to 25 years (Robbins et al., 2015).

Interestingly, patients with private insurance were more likely to be diagnosed with early-stage disease (this was the case with 77.8% of those with private insurance, as compared to 64.7% with Medicaid, and 67.0% of uninsured women [$p < .001$]) (Robbins et al., 2002). This finding suggests a more complex scenario than a simple correlation between having insurance and utilization of preventive services (Robbins et al., 2015). These results are consistent with those of Friedman et al. (2002) who showed that the type of insurance coverage influenced participation in preventive health practices.

Research by Sabik and Bradley (2015) examined the impact of near-universal health insurance coverage in Massachusetts on breast and cervical cancer screenings. The researchers compared data from the BRFSS in 2002 and 2010 to examine the differences in screening levels before and after implementation of Medicaid expansion at the state level (Sabik & Bradley, 2015). Their findings showed an increase of 6% in cervical cancer screenings by low-income women after the enactment of health care reform, a figure which is highly significant (Sabik & Bradley, 2015). Additionally, the researchers found a positive impact on utilization of cervical cancer screenings even in women who were already eligible for NBCCEDP, suggesting that policies that improve health insurance coverage may have a greater impact on utilization of preventive health services than other types of programs for the same population (Sabik & Bradley, 2015). Limitations found by Sabik and Bradley (2015) are consistent with others using national survey data (Adams et al., 2003; Tangka et al., 2015).

In relation to my proposed research, while the period between 2002 and 2010 does not correspond to the time period of my proposed policy analysis (2010-2016), the Sabik and Bradley (2015) study is relevant in that it demonstrates a relationship between obtaining insurance and preventive health services utilization for low-income women. Furthermore, my research proposes to examine current health care reform initiatives under the ACA, which in many ways is modeled on the reform policies pioneered in Massachusetts. Finally, Sabik and Bradley (2015) used the same BRFSS state-level data that is used in my policy analysis.

The studies done by these four research teams all demonstrate the challenges involved in obtaining preventive services by individuals who experience changes and gaps in insurance coverage. Two components of the conceptual framework of the proposed policy analysis are the complex nature of health care access, and the fact that no single factor influences individual behavior. The complexities of access to health care are significant, even when considering a single aspect such as health insurance coverage, as the research shows that many factors play a role in influencing behavior. The work of these researchers provides evidence that helps to explain how, over a period of time, changes in the structure of insurance benefits may impact a group of individuals like the ones who inform my proposed research.

Healthcare providers. Studies of primary care providers demonstrate the complex interaction of circumstances influencing health services utilization. McMorrow, Long, and Fogel (2015) examined data from the National Ambulatory Medical Care Survey (NAMCS) to determine the variance in frequency among primary care physicians who order preventive services for women covered by private insurance as compared to women covered by Medicaid. They found that physician office visits for women covered by Medicaid are less likely to include preventive health services than for women who carry private insurance (McMorrow et al., 2015). The study results found that "an estimated 26.4% of visits by women with Medicaid included at least one preventive service compared to 31.3% of visits by privately insured women" (McMorrow, Long, & Fogel, 2015, p. 1004). However, these researchers point out that although the evidence suggests a direct association between insurance type and receipt of recommended preventive services, other variables in the patient population and in the system of health care service delivery also influence care (McMorrow et al., 2015).

Per McMorrow et al. (2015), "characteristics of patients with Medicaid and private insurance vary in important ways that might influence the content of their visits to primary care physicians" (p. 1004). Some of these characteristics include age, race, socio-economic status, number of visits to the physician in the preceding year, visits to different types of providers such as solo practitioners versus group practices, and the potential utilization of federal health clinics as an alternate source of care (McMorrow, 2015). Adjusting for these differences, the researchers provided a different picture of delivery of preventive health services: while the differences in frequency of having clinical breast exams remained marginally significant, the differences in other services, such as cervical cancer screenings, were no longer significant (McMorrow et al., 2015).

A primary limitation of this research is that McMorrow et al. (2015) focused on ordered services and/or services provided during physician visits, but they were unable to evaluate whether the ordered services occurred. For example, an ordered mammogram does not necessarily correspond to scheduling and completion of the test (McMorrow et al., 2015). Further limitations to this research design include: first, the data is from a national sample of physician office visits and therefore has limitations associated with sampling; and second, the research focused on private, office-based medical practices and is not generalizable to other settings (McMorrow et al., 2015). Finally, McMorrow et al. (2015) reported limitations similar to those found in other research which do not account for individual health behaviors and sociocultural influences (Taylor et al., 2006).

The research presented in this section includes numerous factors that have a bearing on the utilization of preventive services. These may include absence of insurance, intermittent changes in insurance status, and the act of obtaining insurance, as well as individual health behaviors and sociocultural influences. These variations demonstrate the complexity of interactions which may influence the utilization of preventive services. For these reasons, the conceptual framework for the proposed research is not limited to a simple cause-and-effect association, as is often portrayed in biomedical research (Bowleg, 2012). Instead, my research integrates the Behavioral Model of Health Services Use (BMHS), a widely-accepted model of health care access, and the feminist intersectionality paradigm as a supplementary approach. In the remainder of this chapter, I discuss these two approaches and how they can be integrated to explain women's utilization of preventive health services and insurance status.

Behavioral Model of Health Services Use

Healthcare access is a complex concept with many mediating factors. Per Aday and Andersen (1974), "just what the concept of access means, much less how it might be measured, and what methods should be used to evaluate it are ill-defined" (p. 208). The Institute of Medicine (IOM) (1993) defined access as a "shorthand term used for a broad set of concerns that center on the degree to which individuals and groups can obtain needed services from the medical care system" (p. 33). In the 1960s, Ronald Andersen (1995) first developed the conceptual model entitled Behavioral Model of Health Service Use (BMHS) as part of his dissertation (Ricketts & Goldsmith, 2005). Over the years, this model has evolved and become the most widely cited model of healthcare access (Ricketts & Goldsmith, 2005). Andersen (2007) stated:

> The Behavioral Model evolved over time. Revisions and additions occurred in response to emerging issues in health policy and health services delivery, input from colleagues, critiques of earlier versions of the model, and new developments in health services research and medical sociology. The revisions resulted mainly in additions to the model and did not change the fundamental components of the model or their relationships. (p. 651)

The BMHS evolution that accommodates emerging issues in policy and healthcare delivery makes it an ideal model for this policy study. The following section describes this conceptual model and its applicability to this policy analysis.

Evolution of the Behavioral Model of Health Services Use

Andersen’s model evolved over the past 40 years from a static to a complex, dynamic model (Andersen, 1995). The historical evolution of the BMHS is relevant to this study because it demonstrates the changing health care environment and the evolving understanding of the complexity of health services utilization (Andersen & Davidson, 2017). The initial model, developed in the 1960s, focused on understanding why families used health services, and it defined and measured equitable access (Andersen, 1995).

In the 1970s, Phase 2 of BMHS included the importance of the organization of health systems on health services utilization and customer satisfaction as an outcome of health services utilization (Andersen & Davidson, 2007). Through the next two decades, the third phase of BMHS evolved to include health behaviors and health status outcomes (Andersen, 1995; Andersen & Davidson, 2007). Per Andersen (1995), the critical additions of health behaviors and health status outcomes to the BMHS are particularly important to understanding health policy and health reform (Andersen, 1995; Andersen & Davidson, 2007). The fourth phase of BMHS portrays the multiple influences on health services and health status (Andersen, 1995). The Phase 4 model evolved to include feedback loops “demonstrating that the outcome affects the model’s input therefore portraying the dynamic and recursive nature of health services” (Andersen, 1995, p. 7).

The feedback loops of the BMHS align with the conceptual paradigm of feminist intersectionality, discussed later in this chapter. Both take into account the dynamic nature of society and the individual, and serve to direct this research project away from the narrow cause-and-effect relationship often portrayed in biomedical healthcare literature (Andersen et al., 2014; Bowleg, 2012; Hankivsky et al., 2010). Phase 5 of the BMHS further defines both the contextual and individual determinants of health, and adds the process of medical care to the study of health behaviors (Andersen et al., 2014). Andersen defines the process of medical care as providers interacting with patients in the delivery of medical care. Finally, Phase 6 (see Figure 1), adds quality of life as an outcome measure of the model (Andersen et al., 2014).

As research provided a deeper understanding of the growing societal and individual complexity influencing health service utilization, Andersen modified the BMHS model and thus maintained its applicability to the study of how and why individuals utilize health services for over 40 years. Per Pescosolido and Kronenfeld (2007), “the greatest legacy of the behavioral model was its organization of all the previous, mostly single factor studies into an overarching frame linked to multivariate analyses” (Pescosolido & Kronenfeld as cited in Andersen & Davidson, 2007, p. 652).

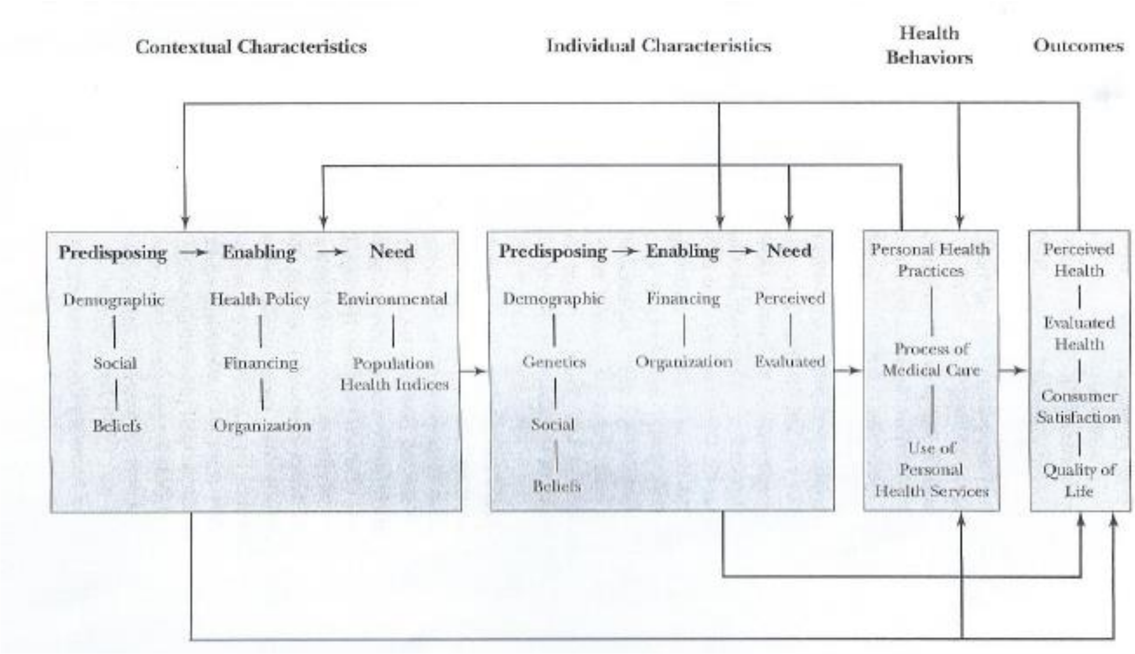

Figure 1. Historical evolution of the behavioral model over the past 40 years. Adapted from "Improving Access to Care" by Andersen, Davidson, & Baumeister, 2014, in Kominski, G. (Ed.), *Changing the U.S. Health Care System: Key Issues in Health Services Policy and Management,* p. 35, San Francisco, CA: Jossey-Bass. Copyright 2014 by John Wiley & Son Inc. Reprinted with permission.

Components of the Behavioral Model of Health Services Use

As shown in Figure 1, BMHS consists of contextual and individual characteristics, in which contextual characteristics include the health organization and the type of health service provider, and individual characteristics include those specifically related to the person who is seeking, or in need of, medical services (Andersen et al., 2014). The two characteristics further break down into three categories: predisposing, enabling, and need.

In this model, predisposing characteristics are existing conditions that influence an individual to use or not use a service (Andersen et al., 2014). For example, predisposing contextual characteristics consist of demographics such as age and race that may have a bearing on the type and amount of services present in the community. Enabling characteristics either facilitate or impede the use of services (Andersen et al., 2014). Health policy and financing, which include factors such as the rate insurance coverage of a group, are enabling contextual characteristics. Likewise, health insurance status is an individual enabling characteristic. Finally, the model defines need characteristics as conditions that either the individual or the health care system recognize as requiring treatment or intervention (Andersen et al., 2014).

From the standpoint of contextual characteristics, items such as the mortality rate of a specific population would indicate a need for intervention; from an individual perspective, the perception of the magnitude of a health problem would indicate a need (Andersen & Davidson, 2007; Andersen et al., 2014). These contextual and individual characteristics influence health behaviors, such as personal health habits, and influence health outcomes or status. Essential to the model are the feedback loops which "allow insight about how access might come to be improved" (Andersen & Davidson, 2007, p. 9). Per Andersen (1995), the feedback loops demonstrate that outcomes affect contextual, individual and health behaviors, thus completing the cyclical nature of the model. These important feedback loops demonstrate the dynamic and evolving nature of the BMHS.

Dimensions of Access According to the BMHS Model

Andersen and Davidson (2007), apply the behavior model as a tool to define and differentiate the many dimensions of the phenomenon of health care access, including potential versus realized access, equitable versus inequitable access, effective access, and efficient access. Andersen (1995) understood the complexity of access and realized that a model defining it as one large comprehensive concept had the potential of producing a nonspecific definition. Per Andersen (1995):

> A major goal of the behavior model was to provide measures of access to medical care. A danger in attempting comprehensive access measure is that it might be too

> broad and nonspecific. However, access is a relatively complex health policy measure and, I think, can be reasonably defined in multidimensional terms using concepts from the behavioral model. (p. 4)

Therefore, Andersen’s model applies the BMHS to formulate the dimensions of access stated above. The following section further describes these dimensions.

In the BMHS model, enabling factors at both the contextual and individual levels provide a measure for potential access (Andersen et al., 2014). The greater the number of enabling resources that the individual or the community possesses, the higher the potential access is (Andersen et al., 2014). For example, in the BMHS model, health insurance is an enabling factor. Therefore, an individual with health insurance has potential access as defined by the BMHS. In another example, realized access is the actual use of health care services which is measured at an individual level by the number of encounters with health care providers (Andersen et al.,2014). At a population level, measures such as healthcare services utilization rates determine realized access (Andersen & Davidson, 2007; Anderson et al., 2014).

So far, the definitions of potential and realized access appear uncomplicated and linear. It is when the access evolves to include equity, effectiveness, and efficiency that the concept acquires complexity. “Equitable and inequitable access are defined according to which determinants of realized access are dominant in predicting the utilization of services” (Andersen & Davidson, 2007, p. 12). In other words, if available resources, such as funding and clinical staffing, determine care rather than clinical determinants, then access is inequitable.

Per Andersen, “equity is in the eye of the beholder” (Andersen, 1995, p. 4). For example, Andersen argued that when social characteristics and enabling resources, such as insurance status, determine who has access to medical care, access is inequitable (Andersen, 1995). The definition of equity, according to Andersen (1995), expands to include an individual's health beliefs and differing criteria for pursuing differing levels of medical care. For example, the inability to access preventive services based on enabling factors such as income and insurance, demonstrate inequitable access. However, these same enabling factors applied to elective cosmetic surgery demonstrate equitable access. In this example, the type of medical procedure influences the definition of equitable access. Likewise, individual health beliefs play a role in determining equitable access. One must consider an individual's or a group's perception of the importance of a medical procedure and the barriers to receiving that medical procedure when defining whether access is equitable or not (Andersen, 1995).

Andersen's BMHS definitions of access continued to evolve throughout the 1990s with changes in how the system viewed health care delivery. Effective and efficient access became a greater focus since the 1990s, as health care cost containment and outcome measures became more important for health policy decisions and health system management (Andersen & Davidson, 2007). The IOM defined effective access as the "timely use of personal health services to achieve the best possible health outcome" (as cited in Andersen & Davidson, 2007, p. 14). Per Andersen et al. (2014):

> measures of effective access examine the effect of potential access (health insurance and regular source of care) and realized access (health service utilization) on outcomes (health status, quality of life, and patient satisfaction with health services). (p. 54)

Efficient access evolved from effective access to include an emphasis on assessing resources used to influence outcomes (Andersen & Davidson, 2007; Andersen et al., 2014).

When examining efficient and effective access, it is important to examine the equity of that access on both the population and on the individual (Andersen & Davidson, 2007).

As important as the evolution of the BMHS model is for understanding health care policy, it is equally important to examine how the model is used in empirical research. The following section examines research that uses the BMHS model as a conceptual framework for evaluating access to health services.

The Behavioral Model of Health Services Use: Empirical Research

Brown et al. (2004) applied the BMHS model to a study of the effects of community factors on access to ambulatory care for lower income adults in large urban communities. In this study, the researchers used data from the NHIS and the Current Population Survey (CPS) to evaluate how individual-level and community-level characteristics affected access to health care in large metropolitan statistical areas (MSA). On the individual level, Brown et al. (2004) were specifically interested in the effects of health insurance coverage, a key enabling factor, on obtaining ambulatory care. They measured potential access, as well as the individual's relationship with a healthcare system, and realized access (Brown et al., 2004). Results for insured, low-income individuals showed no difference in the likelihood of having a regular source of care, whether for individuals insured by Medicaid, or by private insurance or Medicare (Brown et al., 2004).

However, insured individuals who lived in an MSA with a higher percentage of uninsured individuals experienced a reduction in the likelihood of having a usual source of care (Brow et al., 2004). For uninsured residents, the relative odds of having a usual source of care were higher in these MSAs (Brown et al., 2004). Medicaid payments were slightly higher, which lead Brown et al. (2004) to conclude that higher Medicaid reimbursements enable health systems to provide more care to the uninsured. These researchers suggested that:

> the relationship between the relative size of a community's population that is dependent on safety net, and the access of lower-income adults does vary by health insurance status. However, the relationship is very complex and mediated by the specific social and economic characteristics of that population. (p. 53)

Brown et al. (2004) demonstrated an application of the BMHS and provided a basis for understanding the effects of insurance within a low-income community. The study demonstrates the complexity that surrounds an individual's insurance status. The researchers list consistent limitations of using NHIS data as well as limitations associated with merging data from different databases.

In a study focused on health care access for women veterans, Washington, Bean-Mayberry, Riopelle, and Yana (2011) applied the contextual model described in the BMHS to guide their research. These researchers used self-reported delays in seeking needed health care services as their definition of access. By integrating the individual's perception of needed healthcare services into the definition, Washington et al. (2011) differentiated their definition of access from the activity of healthcare utilization. The results of this study found that a variety of factors influenced delays in seeking needed services, including financial considerations, caregiver responsibility, and work obligations (Washington et al., 2011). Per this report, "a wide range of predisposing, enabling, and need-related healthcare factors had measurable and substantial impacts on women veterans' access to needed service" (Washington et al., 2011, p. 657-658). This research supports the complexity of interacting issues that create barriers to healthcare access for women.

Sudano and Baker (2003) applied the BMHS model in a quantitative analysis of the utilization of preventive health services and its correlation to intermittent loss of health insurance coverage. As stated previously, the timeframe of this study parallels the timeframe of implementation of Medicaid expansion in Pennsylvania. Sudano and Baker (2003) selected variables according to predisposing, enabling, and need-related characteristics. Table 1 demonstrates the variable selection.

Table 1

BMHS Variables Demonstrating Complexity

Predisposing	Enabling	Need-related
Age in years	Insurance status	Smoking status
Sex	Educational attainment	Alcohol consumption
Racial/ethnic group	Cognitive ability	Weight status
		Number of chronic diseases
		Health behavior activities

Note. Variable characteristics demonstrating complexity of interacting issues. Sudano & Baker (2003).

The use of the BMHS model in this study demonstrates the applicability of the model to the analysis of preventive services utilization during times of insurance uncertainty. The focus of the Sudano and Baker (2003) research was on examining individual characteristics during a time of policy uncertainty, as I propose to do in my research. However, in the Sudano and Baker (2003) study, data for assessing insurance status was only available for three points in time, a limitation that potentially resulted in under-estimating the effects of insurance coverage.

Additionally, the researchers cited a failure to account for the potential use of free cancer screenings as another limitation (Sudano & Baker, 2003). For some uninsured individuals, these free screenings would have compensated for lack of access to preventive services. These limitations need to be considered in the design of this policy analysis.

Using BMHS as the conceptual model for their research, Ranji, Wyn, Salganicoff, and Yu (2007) examined the effects of health insurance coverage and income as individual enabling factors in financial access to prescription drugs for non-elderly women. The results of this study demonstrated that a sizable number of women had to forego medications due to lack of insurance coverage. Low-income women and those in poorer health were at greater risk of foregoing prescription medication (Ranji et al., 2007). This research supports previous findings suggesting that cost-containment actions by state Medicaid programs have a significant impact on low-income women (Ranji et al., 2007).

Ranji et al. (2007) faced limitations in reaching participants similar to other researchers who used national landline phone surveys. Additionally, the respondents were limited to women who were taking one or more medication (Ranji et al., 2007). This design presented the potential of excluding women who chose not to fill any prescriptions due to barriers, and thus potentially underestimated the number of women who went without necessary medications (Ranji et al., 2007).

Underestimating the actual number of individuals affected by inadequate healthcare access is a consistent problem in this field and is a consideration for my research (Friedman et al., 2002; Sudano & Baker, 2003; McMorrow et al., 2015). These authors caution policymakers regarding imposition of a higher cost burden on low-income populations. The combination of enabling individual factors and health status is an example of another application of the BMHS model and of the importance of feedback loops in tying together the data (Andersen et al., 2014).

In an article discussing expansion of the BMHS by including psychosocial factors in an analysis of the use of long-term care, Bradley et al. (2002) had two objectives:

> (1) augment BMHS in ways that may enhance its explanatory power when applied to empirical studies of race/ethnicity and long-term care, and (2) suggest factors that may vary by race/ethnicity that have not previously been incorporated into empirical research in this area. (p. 1212)

Through qualitative inquiry, the research of Bradley et al. (2002) expanded upon the BMHS in three key areas: 1) identifying psychosocial factors in long-term care use; 2) determining mechanisms by which need, enabling factors, and psychosocial factors may relate to decision-making on long-term care; and 3) determining whether psychosocial factors may mediate the effects of race/ethnicity on the use of long-term care services. They concluded that the enhanced BMHS model provides a framework for future studies regarding race/ethnicity and long-term care use, as well as having implications for long-term care policy and service delivery (Bradley et al., 2002). This research provides an example of how qualitative inquiry can expand the use of the BMHS model to examine specific aspects of health services utilization, thus providing a framework for future research on health care access and policy implementation studies.

The empirical research in this section demonstrates the flexibility of the BMHS. For example, researchers used the BMHS model to examine access to preventive health services in many different circumstances, for populations of low-income individuals and women. Furthermore, as shown in this section, the model is useful for both qualitative and quantitative methodologies. The historical strength of BMHS and its evolution into a dynamic model ensures applicability in the current health care environment and supports its use as an appropriate framework for the proposed policy analysis in combination with the feminist intersectionality paradigm.

As stated earlier, in this chapter there are several other lesser-known models of healthcare access including Penchansky's model, which is known as FIT (Ricketts & Goldsmith, 2005). While the FIT model explains access to health services, it does not have the historical application or the dynamic evolution of the BMHS (Ricketts & Goldsmith, 2005). The following section describes the FIT model and examines research applying to both the BMHS and the FIT models of health care access.

Access as "FIT" Model

Penchansky proposed the concept of a FIT between patients' needs and the system's ability to meet those needs (Ricketts & Goldsmith, 2005). The FIT model has five dimensions, outlined in Table 2. These dimensions are availability, accessibility, accommodations, affordability, and acceptability (Ricketts & Goldsmith, 2005). Although not as frequently referenced in the literature as the BMHS, this model does appear in empirical studies both alone and in conjunction with the BMHS (Kangovi et al., 2013; Penchansky & Thomas 1981; Ricketts & Goldsmith, 2005). Kangovi et al. (2013) apply both the FIT model and BMHS in their analysis of the healthcare preferences of individuals of low socio-economic status.

Table 2

The Five Dimensions of the FIT Model

Dimension	Definition
Availability	Volume of physician and other healthcare services
Accessibility	Spatial and geographic relationships between providers of healthcare and users of services
Accommodations	Describes the organization and content of the healthcare system as it relates to the ease with which people can use care
Affordability	The financial ability of the population to use the care provided by the system and the perception of value on the part of the patient
Acceptability	Represents the attitudes of the users of healthcare towards the providers and vice versa

Note. The model indicates patients' needs and the system's ability to meet those needs (Ricketts & Goldsmith, 2005, p. 275)

Kangovi et al. (2013) investigated the utilization of hospital care versus ambulatory care by individuals of low socio-economic status. In this qualitative study, the researchers used both the FIT model and BMHS to analyze data collected through semi-structured interviews (Kangovi et al., 2013). They used the FIT model to categorize the benefits of access to hospital care versus ambulatory care as reported by the participants (Kangovi et al., 2013). Building on the BMHS, they developed a conceptual framework for low-value use, defined as the underuse of primary care and the overuse of hospital-based care by patients of low socioeconomic status (Kangovi et al., 2013).

In this study, both models provide value to the research design as well as to understanding the data. The research demonstrates that patients of low socio-economic status do not face a homogenous set of challenges. Per Kangovi et al. (2013):

> The participants in this study articulated clear, logical reasons for preferring hospital to ambulatory care. These reasons could not be attributed to a cultural tendency or to ignorance remediable by education on the appropriate use of the emergency department. (p. 1201)

This research provides support for the use of the FIT model and BMHS in a policy analysis. Additionally, the findings demonstrate the complexity of an individual’s life, in which various aspects intersect to influence the choices of that individual.

As stated earlier, the BHMS is the most widely quoted and applied model of health service utilization. Although, the FIT model provides a valuable tool for this type of research, it does not provide the clear definition of access as does the BMHS, nor does it account for the complexity of health service utilization that the BMHS model provides. Additionally, the FIT model is not cited in publications on preventive services or in research focused primarily on low-income women. The historical strength of the BMHS and prior research applications to subject matter comparable to my proposed research, justifies the use of the BMHS as a more appropriate framework for this policy analysis (Ricketts & Goldsmith, 2005).

While the BMHS provides the framework for this policy analysis, the feminist intersectionality paradigm will provide the conceptual background to sharpen the focus on factors specifically affecting low-income women (Bowleg, 2012; Hankivsky et al., 2010). In combination with the BMHS framework, this paradigm provides a comprehensive approach to analyzing utilization of health services by low-income women. The following section discusses the theory of feminist intersectionality and the empirical research supporting its use in analyzing policy. Finally, the last section of this chapter combines the BMHS and feminist intersectionality theory into the conceptual framework for my research.

Feminist Intersectionality Framework

The feminist intersectionality framework addresses issues of power, subordination, and social determinants of lived experiences (Bowleg, 2012; Collins, 1990; Hankivsky, Conner, de Merich, 2009; Hankivsky et al., 2010). Acknowledging the existence of power dynamics and the relationship of these dynamics to marginalization is an important consideration for this policy analysis. The following section discusses the applicability of this framework to this policy analysis.

One of the limitations of traditional biomedical health research is the assumption that all women share the same experience based on their gender (Bowleg, 2012). This assumption neglects the impact of culture, age, economic status, religion, sexual orientation, geography, and other categories of differences (Bowleg, 2012; Hankivsky et al., 2010). In its conception of inequality as being solely a matter of resource differences among individuals, the biomedical paradigm limits the understanding of the complexity of inequality (Hankivsky, de Leeuw, Lee, Vissandjee, & Khanlou, 2011). For example, Taylor et al. (2006) cited a limitation of their study as their inability to incorporate an understanding of behavioral and sociocultural orientations into their analysis of women’s access to health care.

Since the purpose of this policy analysis is to provide an understanding of health services utilization for marginalized women, it is important that the foundational construct of this analysis consist of the understanding that women do not share the same experiences based solely on their gender, and that inequities are complex in nature (Bowleg 2012; Hankivsky et al., 2010). The feminist intersectionality framework provides this foundation by incorporating multiple constructed identities into the shaping of dimensions of the self. These identities may include sexuality, ethnicity, culture, socioeconomic status, and ableness (Van Herk, Smith, & Andrew, 2010).

Social identities are not independent and one-dimensional, but multiple and intersecting. A group's historical oppression and marginalization provides a starting point for an evaluation of the challenges facing marginalized women who must make decisions on the utilization of health services (Hankivsky et al., 2009, 2010). The principle of feminist intersectionality, as illustrated in Figure 2, allows for a richer understanding of the healthcare experiences of low-income women.

Bowleg (2012) describes three core tenets of intersectionality that are most relevant to individuals from multiple, historically oppressed and marginalized groups. At the center of the framework is the consideration of how micro-level social identities intersect with multiple social inequalities at the macro structural level (Bowleg, 2012). For example, the healthcare experiences of a Latino single mother who lives below the poverty level, link to multiple, intersecting macro-level inequities such as sexism, poverty, and racism. In this example, the micro-level intersections of race, ethnicity, socio-economic status, and single motherhood connect to the macro-level structural inequities to create a complex and unique experience (Bowleg, 2012).

By using feminist intersectionality theory as a framework through the course of data collection and analysis, the narrow cause-and-effect relationship often portrayed in biomedical research will be avoided, and the complexity of the situation will be evident (Hankivsky et al., 2010). Utilizing this framework against the backdrop of the legislative history of the Medicaid system, and Pennsylvania's convoluted journey to Medicaid expansion, a richer picture of the historical challenges faced by women emerges.

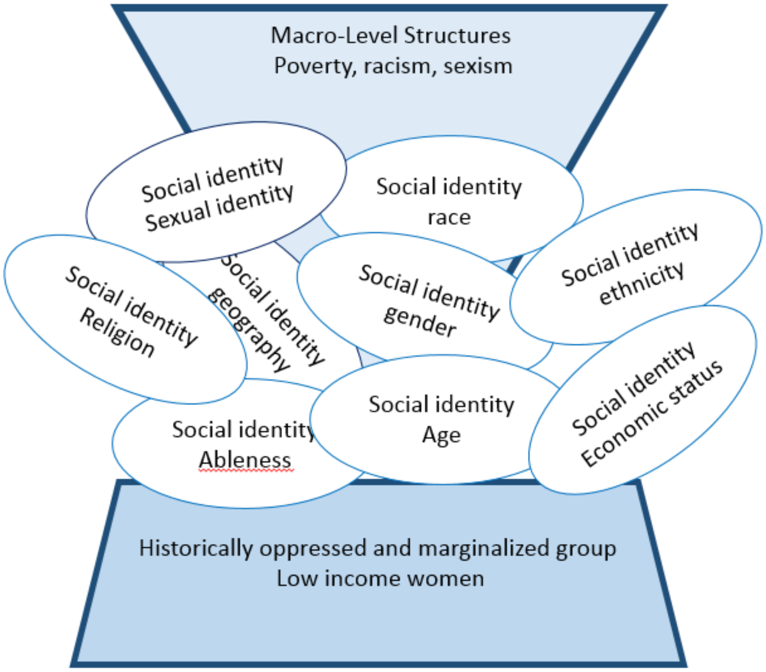

Figure 2. Feminist intersectionality conceptual framework demonstrates the fluid interaction of micro-level identities with the overarching macro-level structures sitting upon a history of marginalization and oppression (Bowleg, 2012).

A 2015 newspaper article by Goodnough described the struggles of individuals trying to attain the income threshold needed to obtain health insurance through the ACA health insurance market. Per Goodnough (2015), 54% of individuals in the coverage gap are employed but have too little income to meet the threshold necessary to participate in the insurance markets. Most of the individuals interviewed for the article were women. Each of them had a unique story to share, demonstrating the diversity and complexity of their experiences. The article showed how each woman faced many different challenges and dynamics, but they had two things in common: They were in the coverage gap for the ACA and were thus unable to access health services.

The feminist intersectionality approach allows the observer to understand that outcomes are the result of various, equally critical factors, while Goodnough (2015) provides concrete examples illustrating the importance of using this approach for a policy analysis of this nature. In the next section, I review the empirical research which applies the feminist intersectionality framework and discuss its connection to my research.

Feminist Intersectionality Theory: Empirical Research

In the 1990s, Kimberly Crenshaw coined the term “intersectionality” to describe the absence of black women from white feminist discourse (Bowleg, 2012). Per Bauer (2014):

> Crenshaw’s intersectionality theory sought to complicate understandings of race and sex/gender-based scholarship by arguing that multiple marginalization, such as those experienced by African-American women, were mutually constituted and could not be understood or ameliorated by approaches that treated race and sex/gender as distinct subjects of inequality. (p. 11)

Although feminist intersectionality theory often appears in gender and feminist studies, it remains under-applied in mainstream health research, including healthcare utilization and policy reviews (Bowleg, 2012). This is particularly true in the United States.

A few key studies about access to care among Canadian Aboriginal women provide insight into the use of this theory. Van Herk, Smith, and Andrew (2010) focused specifically on access to preventive health services in the Canadian Aboriginal community. More recently, a 2014 research project based in the United States applied the theory to preventive healthcare utilization (Agenor, Krieger, Austin. Haneuse, and Gotlieb, 2014). The following section addresses these two studies.

Van Herk, Smith, and Andrew (2010) used a qualitative approach with pregnant Aboriginal women respondents to understand issues that arose in accessing preventive healthcare. The researchers found “issues of identity, particularly around race, gender, and socioeconomic status and how they were perceived by service providers were problematic within the healthcare encounter" (Van Herk et al., 2010, p. 33). They chose intersectionality theory to explore how the women's multiple identities interacted with one another to create positive and negative experiences of accessing care (Van Herk et al., 2010). Van Herk et al. (2010) described this interaction as fluid in nature, where interrelated aspects of an individuals' identity intersected with social history and social power to form meanings about health. Similarly, I will use feminist intersectionality for my proposed research as a framework for understanding how micro-level social identities, macro-level structure, and historical components interact to create each woman's experience.

Agenor, Krieger, Austin, Haneuse, and Gotlieb (2014) examined the use of cervical cancer screenings by the sex of sexual partners of black, Latina, and white U.S. women. Agenor et al. (2014) approached their research through a lens of eco-social theory and intersectionality, thus avoiding a singular focus on the role of race/ethnicity. Instead, they examined the data through a holistic analysis of socio-economic factors (Agenor et al., 2014). This strategy provides valuable insight for my proposed research in that, first, the authors examined utilization of preventive health services; secondly, they combined intersectionality with another theoretical framework, thus providing guidance for this study in which I will combine intersectionality theory with the BMHS framework.

Finally, in the discussion of the various impacts on women's lives, the researchers provided insight into the complexities involved in the usage of health services. The micro-level, macro-level, and structural components all played a role in the decision to get a Pap test (Agenor et al., 2014). As I examine participation in cervical cancer screenings during a time of policy implementation, I will apply the lens of feminist intersectionality to avoid drawing narrow conclusions regarding the complex nature of women's access to preventive services.

The research of Agenor et al. (2014) provides a valuable example of the use of feminist intersectionality theory for my research. By using intersectionality and eco-social theory, the researchers explored the complexity of the situation instead of focusing on causality, as is often the case in traditional biomedical research (Agenor et al., 2004; Bowleg, 2012). Traditional biomedical research often limits the examination of relationships to one or very few possibilities (Bowleg, 2012). For example, traditional biomedical research may examine race/ethnicity or gender as it relates to a health outcome and stop at that level of understanding.

By employing eco-social theory and intersectionality as the conceptual framework, Agenor et al. (2014) went beyond the singular identity characteristic of race/ethnicity to understand the complexity of the environment influencing women receiving health services. For example, the researchers discussed the structural influence of receiving care in a community health clinic versus receiving care in a private physician's office. The community health clinics were often located in low-income communities that were disproportionately comprised of people of color and were more likely to provide STI preventative services in compliance with federal funding guidelines, than did private physicians (Agenor et al., 2014). The Agenor (2014) study surmised that women receiving care in these clinics (who tended to be women of color) may have had more opportunities to receive STI services and screenings for cervical cancer compared to those using private providers (who tended to be white) across all sexual orientation groups (Agenor et al., 2014). This single example from the Agenor (2014) research demonstrates how intersectionality allows for the inclusion of many factors, all of which may influence an individual's participation in preventive health services.

The research reviewed in this section demonstrates how multiple interactions of macro-level structures and micro-level identities produce the health behavior of individuals, as illustrated by two studies. Having provided the rationale for using both the BMHS model and feminist intersectionality theory as a conceptual lens, in the closing section I discuss the use and benefits of combining the two conceptual frameworks.

Policy Analysis Conceptual Framework

The design of this policy analysis (Figure 3), considers the interaction of contextual and individual characteristics, health behaviors, health outcomes, and the feedback loops of the BMHS model, and frames them all through the conceptual lens of feminist intersectionality (Andersen & Davidson, 2007; Hankivsky et al., 2010). In this design, the contextual characteristics exist within a sphere of macro-level structures that involve concepts such as poverty, sexism and racism. The individual characteristics exist within the sphere of an individual's social identities. These two spheres interact, creating a dynamic situation for individuals. They also interact with individual health behaviors, like smoking and diet habits, to produce health outcomes which constitute a quality of life measure.

The feedback loops allow the health behaviors and health outcomes to influence the individual's social identities as well as the macro-level structures (Andersen et al., 2014). This dynamic framework combines to create a measure of utilization, or effective realized access, to preventive health services, defined as the timely use of preventive health services to achieve the best health outcomes. It is important to understand that this conceptual framework of access sits upon a foundation of the historical marginalization and oppression of women. This framework allows for the complexity and interconnected influences bearing on the utilization of preventive health services.

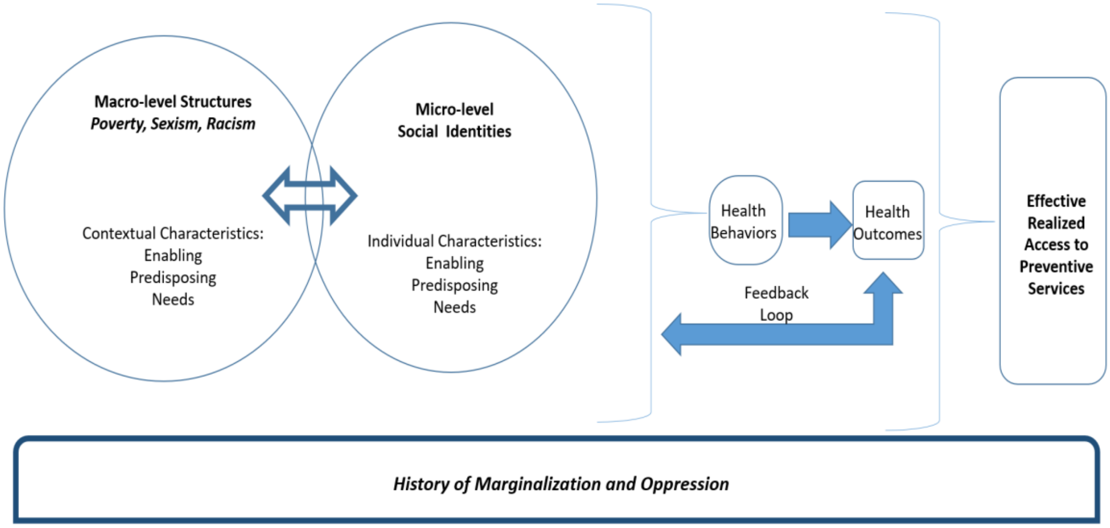

Figure 3. Policy analysis conceptual framework combining BMHS and feminist intersectionality. Adapted from Andersen & Davidson, 2007; Bowleg, 2012; Hankivsky et al., 2010.

The diagram in Figure 3 imposes the intersectionality paradigm onto the BMHS model, thus creating a conceptual framework for this policy analysis that incorporates a widely-accepted model of access to care, with a more holistic view of the complexity of individual lives. The base of the conceptual framework in Figure 3 represents the history of marginalization and oppression. This guides my understanding that the participation in preventive health services by women is not simply due to current conditions (i.e., current policies or guidelines), but is also influenced by a population's and individual's history of health care experiences. Likewise, by encasing the contextual and individual characteristics of BMHS in the macro-structures and micro-level social identities, I steer away from a singular focus on individual factors influencing participation in preventive health care. This conceptual framework guides the data analysis and methods discussed in Chapter 4 by using sufficient sources of data to avoid the creation of a linear cause-and-effect relationship between insurance status and cervical cancer screening, in favor of a more holistic view of the complex situation.

Summary

This chapter introduced the conceptual framework for this policy analysis and discussed the empirical literature supporting it. The body of knowledge informing the conceptual framework includes empirical research on participation in cervical cancer screenings by low-income women, preventive health services and insurance status, examination of models of health services utilization, and the conceptual lens of feminist intersectionality theory.

The focus of my research is on the health behaviors influencing participation in preventive health services, particularly cervical cancer screening, by low-income women. I plan to concentrate my research on the four-year period between 2012 and 2016, during the time of new policy implementation resulting in changes in health coverage benefits.

In this chapter, I examined the literature related to participation in cervical cancer screenings, ranging from understanding disparities in screening, to examining the influence of evolving clinical guidelines, to assessing the impact of a national program aimed at providing cervical cancer screening for low-income women. For this study, it is important to explore the entire range of prior research on participation in cervical cancer screenings, as it is all relevant to the women who are the intended subjects of my research.

I also examined literature on insurance status and preventive health services. A foundational understanding of the effects of lack of health insurance, and of intermittent health insurance on the preventive health behaviors of women is critical, as my research covers four years during which implementation of new policies allowed low-income, previously uninsured women to receive all the benefits of Medicaid.

This research meets the need to understand how policy and insurance coverage both play a role in health services utilization. It adds to the current body of knowledge by focusing specifically on disparities in utilization of cervical cancer screenings during a time of insurance evolution. This chapter also introduced the conceptual model that guides my research. I chose to use a widely accepted model of health care access, the BMHS, and to combine the model with feminist intersectionality theory. In doing so, I create a perspective that allows for an understanding of the complex nature of women’s health care.

CHAPTER 4

METHODOLOGY

Chapter Introduction

The purpose of this study is to understand changes in health policy during implementation of the Affordable Care Act (ACA), and how these changes impacted participation in cervical cancer screening by low-income women. As stated previously, Pennsylvania's adoption of the ACA evolved from 2010 until 2016, resulting in low-income women gaining access to Medicaid benefits by 2015 (Kaiser, 2015). The conceptual framework, discussed in Chapter 3, which encases the BMHS within the framework of feminist intersectionality, guides my policy study design. To gain an understanding of the complexity of factors influencing health behaviors such as cervical cancer screening I need data that captures both individual and contextual influences.

This policy analysis uses secondary data from the Behavioral Risk Factor Surveillance Survey (BRFSS) as the data source for the statistical analysis (Centers for Disease Control and Prevention, 2013b). Secondary data from the BRFSS allows for examination of the complex relationship of the variables influencing the health behaviors (Centers for Disease Control and Prevention, 2013b, 2014b). This chapter states the research question and hypothesis, explains how the design for this policy study evolves from the conceptual framework, provides a rationale for the use of the BRFSS as the data source, and defines the variables for the policy analysis.

Purpose and Hypothesis

The literature review and conceptual framework discussed in Chapter 3 demonstrate the complex nature of the factors which influence an individual's health behaviors. The literature indicates a connection between insurance status and individual health behaviors (Friedman et al., 2002; Sabik & Bradley, 2015; Sudano & Baker, 2003). It is this connection and its association with the health policy environment that drives my research question.

The conceptual framework of my policy analysis considers the interaction of contextual and individual characteristics, health behaviors, health outcomes, and feedback loops of the BMHS model (Andersen & Davidson, 2007). The framework of intersectionality encases the BMHS to complete the conceptual framework for my policy analysis (Andersen & Davidson, 2007; Bowleg, 2012; Hankivsky et al., 2010). As stated in Chapter 3, the design of the conceptual framework is one in which the contextual characteristics exist within a sphere of macro-level structures that involve concepts such as poverty, sexism and racism. The individual characteristics exist within the sphere an individual's social identities. These two spheres interact, creating a dynamic situation for individuals. They also interact with factors such as individual health behaviors, like smoking and diet habits.

This dynamic framework combines to create a measure of utilization, or effective realized access to preventive health services, defined as the timely use of preventive health services to achieve the best health outcomes (Andersen & Davidson, 2007; Bowleg, 2012; Hankivsky et al., 2010). The conceptual framework's feedback loops demonstrate how an individual's health behaviors and health outcomes are influenced by social identities as well as the macro-level structures. Finally, this complex relationship sits upon a foundation of historical marginalization and oppression of women. The conceptual framework provides the lens for examining the data to address the research question.

This policy analysis examines the participation of low income women in cervical cancer screening during a time of state and federal policy turmoil, specifically, before and after the expansion of Medicaid in Pennsylvania. This change in health policy was responsible for providing Medicaid coverage for a subset of the population (Kaiser, 2015). Therefore, the research question is: How is participation in cervical cancer screenings by low-income women impacted by changes in health care policy during the period from enactment of the ACA until full Medicaid expansion in Pennsylvania?

The literature demonstrates that increasing access to health insurance increases participation in preventive health services (Sabik & Bradley, 2015; Sudano & Baker, 2003). In 2014, most low-income Pennsylvania women were unable to access Medicaid services and therefore were at greater risk for being uninsured (Kaiser, 2015). With Medicaid expansion in 2015, these women gained access to health insurance coverage (Kaiser, 2015). BRFSS data collected in 2016 should reflect an increase in insurance coverage among low-income women. Based on the literature, I expect to find a parallel increase in participation in cervical cancer screening by low-income women (Sabik & Bradley, 2015). Therefore, I hypothesize that in 2016, it is likely that cervical cancer screening will increase among low-income women as compared to 2014 due to the policy changes which increased access to Medicaid for this group in 2015. To test my hypothesis, this study compares data from the BRFSS in 2014 and 2016. The next section of this chapter provides an overview of the BRFSS dataset, the rationale for its application in my policy analysis, and the derivation of the population sample.

Study Design

BRFSS Secondary Data

Because policy changes in Pennsylvania occurred over time and potentially impacted women across the entire state, the Behavioral Risk Factor Surveillance Survey (BRFSS) provides useful data for this study. The BRFSS collects annual data on a state-by-state basis, on specific health practices such as cervical cancer screening. Data from the Survey facilitates longitudinal, state-level examination of health behaviors (Centers for Disease Control and Prevention, 2015). In the following section, I give an overview of the BRFSS instrument, the rationale for the selection of time points for collecting this data, a summary of the benefits and limitations of utilizing secondary data from a national survey such as the BRFSS, and I discuss how I derived my population sample from the BRFSS.

BRFSS overview. In collaboration with state public health departments, the CDC initiated the BRFSS in 1984 (Centers for Disease Control and Prevention, 2014a). The purpose of the BRFSS was to collect state and local data regarding individuals' health-related risk, chronic health conditions, and use of preventive health services (Centers for Disease Control and Prevention, 2014a). The BRFSS collects data on over 500,000 adults annually through telephone surveys, making it the largest public health survey in the world. The main objectives of the survey are as follows: (a) to collect uniform, state-specific data on preventive health practices and risk behaviors that are linked to chronic diseases, injuries, and preventable infectious diseases in the adult population; (b) to enable comparisons between states and derive national-level conclusions; (c) to identify trends over time; (d) to allow states to address questions of local interest; (e) to permit states to readily address urgent and emerging health issues by adding topical question modules (Centers for Disease Control and Prevention, 2014a). With this information, the BRFSS informs policymakers as they set priorities and design health-related policies. The BRFSS data is suitable for this policy analysis because it focuses on annual state-level preventive health data.

BRFSS survey data collection protocol. States may choose to conduct the BRFSS through their own state health departments or to contract with a private company or university (Centers for Disease Control and Prevention, 2015c). However, all states must follow specific guidelines for data collection as established by the CDC (Centers for Disease Control and Prevention, 2013b). For example, states must complete 80% of calls on weeknights and weekends and 20% on weekdays. The interviewer must (a) attempt each call 15 times; (b) must follow up on refusals one additional time; and (c) must ask all core questions without modification. States have the option to add questions from optional modules without modification to the question format. A BRFSS state coordinator group approves state-specific questions in advance (Centers for Disease Control and Prevention, 2013b).

BRFSS sampling design. States determine whether to sample by county, by public health district, or by other sub-state geographical entity to make comparisons within geographic areas (Centers for Disease Control and Prevention, 2013b). States obtain the telephone sampling questions from the CDC and review the methodology with a state statistician and the CDC to ensure consistent data collection. The sample size for each state is 4,000 participants annually (Centers for Disease Control and Prevention, 2013b).

As of 2011, the BRFSS uses two types of samples: one for respondents using land-line telephones and another for respondents using cellular telephones. Household sampling entails randomly choosing one participant to take the survey and provide information on all the adults in the home. This is the sampling method for landline respondents (Centers for Disease Control and Prevention, 2012b, 2013b). Individual sampling is the method used for cellular respondents.

Each state must complete 20% of their survey through the random cellular sample. When individuals move out of state and keep their cellular number, the state completes the survey and transfers the data to the new state of residence (Centers for Disease Control and Prevention, 2013b). Because landline and cellular telephone samplings differ, the BRFSS uses distinctive designs and weightings for each set of responses. Single adult household weighting is the method used for cellular respondents, whereas the disproportionate stratified sampling (DSS) is for land-line respondents (Centers for Disease Control and Prevention, 2012b, 2013b).

For the land-line sample, the DSS separates the telephone numbers into two strata based on density, with the higher density stratum having a higher sampling rate. The BRFSS sampling ratio, defined as the rate of sampling of one stratum to the other, is 1:1.5 (high to medium density). According to the BRFSS, this design is more efficient than simple random sampling (Centers for Disease Control and Prevention, 2013b).

For bias reduction in the sampling, the BRFSS has a two-step weighting process: design weighting and iterative proportional fitting process, known as raking (Centers for Disease Control and Prevention, 2012b). Design weighting considers the number of adults in each household, the number of records selected, and the number of records selected in each stratum (Centers for Disease Control and Prevention, 2012b). Raking methodology allows for adjustments to each variable individually in a series of data processing or intensive iterations. The raking method allows the BRFSS to include more demographic variables and provide the flexibility required to transition to cellular phone calls as part of the data collection (Centers for Disease Control and Prevention, 2012b). The inclusion of cellular data is important for my policy analysis since cellular sampling provides a more comprehensive sampling of the population.

BRFSS survey questions. The BRFSS survey questions consist of core questions, optional module questions, and state-requested questions. States administer core questions annually, while the optional module questions rotate on alternating years into the set of core questions. States have the option to add the optional module as well as to request specific state-level questions pertinent to their specific health concerns (Centers for Disease Control and Prevention, 2013b). The questions regarding women’s health screenings, including cervical cancer screening, are part of an optional module that BRFSS rotates into the core module on even-numbered years (Centers for Disease Control and Prevention, 2013b). Therefore, my study uses data from even-numbered years (2014 and 2016) for cervical cancer screening

Sabik and Bradley (2015) performed a similar study exploring the impact of near universal coverage on breast and cervical cancer screenings in Massachusetts. In their main analysis, these researchers examined even-year data between 2002 and 2010. Since my policy analysis also uses secondary data from the BRFSS to explore the impact of insurance coverage on women's preventive health services, Sabik and Bradley's (2015) methodology provides support for using these methods for my analysis. Finally, I am interested in the changes that occurred as a result of Medicaid expansion in Pennsylvania. By using BRFSS data from 2014 and 2016, I capture the period before, during and after Medicaid expansion.

Benefits of Secondary Data

Policy studies such as mine aim to evaluate the impact of policy on a specific population. According to Young and Ryu (2000), secondary data are more desirable for policy studies because the purpose of these studies is to influence policymakers, and large governmental data sources provide a stronger basis than a small single study sample generated by a single researcher. Furthermore, an independent large-scale survey of low-income women in Pennsylvania is cost-prohibitive.

When the goal of the researcher is to understand the impact of a policy over time, secondary data provides a low-cost, straightforward way to compare data regarding a population over time (McCaston, 2005; Young & Ryu, 2000). Well-established governmental databases such as the BRFSS have historical reliability and validity, providing an elevated level of credibility (Centers for Disease Control and Prevention, 2015c; McCaston, 2005; Young & Ryu, 2000). The use of secondary data in health policy research is widespread and allows for comparison of findings from one study to another to build a case for policy influence (Centers for Disease Control and Prevention, 2015c). For example, the literature review in Chapter 3 includes several studies that use secondary data from the BRFSS and NHIS to explore the relationship between policy and cancer screenings. Therefore, for this policy analysis, I use secondary data to provide timely data with the reliability of a large population sample.

Benefits of BRFSS. Many studies of participation in health screenings leverage data collected from several different national and state surveys and data sources such as the BRFSS, NHIS, and NBCCEDP. For this policy study, there are several additional benefits to using data from the BRFSS rather than other national- and state-level data sources. The BRFSS separates data by state and county, allowing for analysis of Pennsylvania women exclusively (Centers for Disease Control and Prevention, 2013b). Although other surveys, such as the NHIS, collect some data on residence, the design does not separate specific state- and county-level information (Centers for Disease Control and Prevention, 2017e). Furthermore, in 2011, the BRFSS survey expanded to include cellular telephone users which increased access to a more diverse sample (Centers for Disease Control and Prevention, 2012b). Finally, the purpose of the BRFSS is to collect data regarding preventive health behaviors over time, which is consistent with the purpose of my policy study (Centers for Disease Control and Prevention, 2012; Centers for Disease Control and Prevention, 2013b).

Limitations of Secondary Data

Although there are several benefits to using secondary data for this policy study, limitations do exist. Secondary data has sampling constraints, as well as limitations of question specificity due to standardization of the survey design (Young & Ryu, 2015). The inability to conduct follow-up calls to acquire data on reasons associated with screening decisions also constrain results (McCaston, 2005). In addition, national surveys rely on many individuals to collect data. These individuals often have limited training and supervision. While specific protocols for data collection exist, the potential for interview error is higher than in studies relying on primary data collected by a small group of researchers (Centers for Disease Control and Prevention, 2015; McCaston, 2015).

Limitations of BRFSS. The BRFSS has specific limitations associated with methodology, procedures and statistical analysis. First, because the BRFSS methodology changed in 2011 to include cellular data, survey data prior to 2011 is not comparable to data collected after that date (Centers for Disease Control and Prevention, 2012b, 2015). Due to this change, I am unable to use survey data prior to 2011. An initial evaluation of 2008 data prior to the enactment of ACA in 2010 would be ideal, but due to the change in BRFSS sampling methodology this is not possible. Since I am unable to capture data prior to 2011 due to these changes, I cannot examine participation prior to the enactment of the ACA. On the other hand, the primary focus of my policy analysis is to understand the impact of Medicaid expansion, and since both the Healthy PA Plan and full Medicaid expansion occurred in 2015, use of data collected in 2014 and 2016 will allow for a comparison of health behaviors before and after Medicaid expansion (Kaiser, 2015).

According to the BRFSS summary documents describing the analysis procedure and statistical issues for data collected between 2012 and 2014, the weighting of BRFSS data compensates for issues such as variations in respondents' probability of selection, disproportionate selection of population subgroups relative to a state's population distribution, or non-responsiveness (Centers for Disease Control and Prevention, 2013a; Centers for Disease

Control and Prevention, 2015). Regardless of state sample design, weighting allows for generalization from the sample to the general population (Centers for Disease Control and Prevention, 2013a; Centers of Disease Control and Prevention, 2015).

Statistical issues also result from the complex sample design which requires blending land-line and cellular telephonic sampling. The complex sample design can produce misleading results during statistical analysis using programs that assume simple random sampling for analysis of variance and hypothesis testing (Centers for Disease Control and Prevention, 2013a; Centers of Disease Control and Prevention, 2015). Statistical software that accounts for complex sampling overcomes this limitation (Stata Survey Data Reference Manual 15, 2017). More details regarding the software and statistical analysis are provided in the next section of this chapter.

The population for this policy analysis is low-income women who meet income level requirements for Medicaid. A percentage of the federal poverty level (FPL) defines the qualification for the Medicaid benefit, such that individuals below 138% FPL qualify for Medicaid expansion (Kaiser, 2017e). To capture women at this income level would require precise data on income. However, the BRFSS collects income levels as a categorical variable. (Centers for Disease Control and Prevention, 2012a). This does not allow for determination of a woman's specific income. I address how I overcome this issue later in this chapter.

Finally, the BRFSS is a self-reporting survey and the literature suggests that women over-report participation in cervical cancer screenings (Gordon, Hiatt & Lampert, 1993; Johnson & Archer, 1995). Since I am interested in changes in participation over time, by using several time points I reduce the potential for over-reporting as an influencing factor, as compared to a single time point evaluation.

In summary, the BRFSS is a longstanding national survey that provides standardized data for my policy analysis. Although limitations exist with the use of secondary data sources such as the BRFSS, the survey provides ample relevant data for this analysis and is a data source for numerous well-documented policy studies.

Sample

A cornerstone of the ACA was Medicaid expansion to all individuals whose income fell below 138% FPL (Kaiser, 2013b, 2017a). Due to Pennsylvania's political environment between 2010 and 2016, access to the expanded Medicaid benefits did not exist until 2015 (Commonwealth of Pennsylvania, 2011; Fields, 2015; Kaiser, 2013b). The goal of this policy study is to understand the relationship between health policy and insurance status, and low-income women's participation in cervical cancer screening. The population sample for this policy analysis is women who reside in Pennsylvania and who qualify for Medicaid benefits by having a household income of less than 138% FPL (Kaiser, 2017e). I derived the sample from the 2014 and 2016 BRFSS data set by first reducing the sample to Pennsylvania residents, then reducing it to women in Pennsylvania, and finally reducing the sample to women whose income fell below 138% FPL. I describe this process in the following section.

Sampling methodology. The BRFSS database for 2014 and 2016 contains secondary data from every state regarding health behaviors of men and women (Centers for Disease Control and Prevention, 2013b). The BRFSS is designed to easily narrow the population sample to meet various inclusion criteria (Centers for Disease Control and Prevention, 2013a). Since the inclusion criteria for my policy analysis are women living in the state of Pennsylvania whose income is below 138% FPL, I took the following steps to narrow the population to those women who met the criteria.

The literature discusses methods of reducing national survey data down to specific populations by state, sex, and percentage of federal poverty level (Sabik & Bradley, 2015; Simon, Soni, & Cawley, 2016). Sabik and Bradley (2015) examined the impact of near universal insurance coverage on breast and cervical cancer screening in 2015. In their research, they extracted sample data from the BRFSS between the years 2002 and 2010 and narrowed the data to women in six states who had incomes at or below 250% FPL (Sabik & Bradley, 2015). Similarly, Simon et al. (2016) limited their sample to individuals ages 19-65, living at or below 100% FPL, in states with Medicaid expansion by 2014. These studies provide a reference for the sample inclusion methods in this policy analysis. The following five steps outline the sample inclusion process. Table 3 summarizes the sample sizes from each step in the sample methodology.

1. Pennsylvania residents only: The BRFSS variable labeled "_state!" identifies state of residency. The variable "_state!" = 42 identifies Pennsylvania residents. All respondents that state! ≠ 42 are eliminated from the database. This step creates a Pennsylvania-only database made up of 11,000 respondents (2014), and 6,810 respondents (2016).
2. 2014 and 2016 database: This step combines the two databases into one for ease of managing the data. In doing this, it was important to maintain identification of the survey year. The dichotomous variable survey_yr allows for separation of data into survey years in which 0=2014 and 1=2016. The appended database contains 17,810 respondents
3. Women: Since this policy analysis examines health behaviors of women, the database is narrowed to only women. The variable "sex" identifies sex of the respondent, where 1=male and 2=female. I removed all sex=1 from the Pennsylvania databases. This step

reduces the total respondents to 10,154, of which 6,491 respondents are from 2014 and 3,663 are from 2016.

4. Federal Poverty Level: The women who had the opportunity to obtain health insurance in 2015 were those whose income was less than 138% FPL. Therefore, this study excludes all women whose income ≥ 138% FPL. The BRFSS survey collects income by categorical ranges (see Appendix D) (Centers for Disease Control and Prevention, 2015a, 2017b). The following steps outline the process for narrowing the population sample to those whose incomes were ≤ 138% FPL.

A. Midpoint Income: The first step is to generate the variable inc_md for midpoint income at each income level. This variable creates a value for each respondent's income. This value is necessary to compare the respondent's income to the Federal Poverty Level. Please refer to Appendix D for variable details.

B. Persons in household: The Federal Poverty Level is a measure of household income. Therefore, it is necessary for the calculation to include the total persons in household. The new variable "totper" equals the number of adults and children in each household. Please refer to Appendix D for BRFSS variable details. Generation of the variable "totper" created eleven respondents who reported number of children but did not report number of adults. The imputation of the mean of adults (2.0) into the calculation for the eleven respondents allowed for their inclusion in the data analysis (Hamilton, 1992). Please refer to Appendix A for a listing of the eleven respondents by identification number.

C: Federal Poverty Level: Calculation of the Federal Poverty Level x1.38 provides the income inclusion for each survey year. Please see Appendix B for a listing of the FPL and 138% of each level.

D: Poverty Variable: The calculation of the dichotomous variable “poverty” was as follows: Please refer to Appendix C for variable details.

1: Poverty = 1 (yes) if “inc_md” < 138% FPL for each household size up to $75,000 household income

2: Poverty = 0 (no) if “inc_md” ≥ 138% FPL for each household size up to $75,000 household income

Exclusion: All respondents in which poverty = 0 (no)

Inclusion: All respondents in which poverty=1 (yes)

Thus, narrowing the sample to Pennsylvania women whose household income falls below 138% FPL.

5: The dependent variable in this study focused on women who reported either yes or no to participating in cervical cancer screening as per the USPSTF clinical guidelines. As stated prior the USPSTF guidelines for screening are non-hysterectomy women ages 21-64 who report participating in a cervical cancer screening within the last three years. The BRFSS includes a calculated variable “_rfpap33” which meets the USPSTF criteria (Centers for Disease Control and Prevention, 2015a; U.S Preventive Services Taskforce, 2012). As per the BRFSS codebook, women who refuse or do not know when they last participated in a cervical cancer screening fall into the exclusion criteria (Centers for Disease Control and Prevention, 2015a). From the 1,867 potential women, 966 met the exclusion criteria. The new variable dichotomous “answer” includes respondents answering "_rfpap33" and excludes all missing responses. The final sample contains 901 respondents, of which 540 responded in 2014, and 361 in 2016.

Table 3

Study Sample Size

	Year		
Sample	BRFSS 2014	BRFSS 2016	Total
BRFSS National	464,664	486,303	950,967
Pennsylvania All	11,000	6,810	17,810
Pennsylvania Women	6,491	3,663	10,154
Pennsylvania Women below 138% FPL	1,189	678	1,867
Pennsylvania women who answered yes/no to "_rfpap33"	540	361	901

Note. Study sample size derived from BRFSS surveys 2014 and 2016. Sample is low-income women (<138% FPL) women living in Pennsylvania. The women are non-hysterectomy women, ages 21-65, who answered the cervical cancer screening question- shown as variable _rfpap33. Centers for Disease Control and Prevention 2013b.

As discussed in Chapter 3 and illustrated in the conceptual model, health behaviors exist in a complex environment with many factors simultaneously influencing an individual's choices. The literature review and conceptual frameworks guided the identification of included variables in this policy analysis. The BRFSS data allows for the inclusion of the most frequently cited variables influencing health behavior (Centers of Disease Control and Prevention, 2015a, 2017b). In the next section of this chapter, I describe the dependent and independent variables for the policy analysis.

Variables

The conceptual model for this policy analysis informs the methodology of this study in that it posits a complex intersecting relationship between individual characteristics, contextual (societal) characteristics, and the health behaviors of an individual (Andersen & Davidson, 2007; Bowleg, 2013, Hankivsky et al., 2010). Further influencing the outcomes are present circumstances and historical oppression and marginalization (Andersen & Davidson, 2017; Hankivsky et al., 2010). I derive the dependent, independent, and intervening variables in my policy analysis from my conceptual model.

Literature cited in Chapter 3 discussed the application of the BMHS and intersectionality theory in exploring the health behaviors of individuals as a dependent variable. It also discussed the use of individual and contextual characteristics (predisposing, enabling, and need) as independent or intervening variables in prior studies. For example, Sudano and Baker (2003) applied the BMHS model to an analysis in which preventive health services utilization was an individual health behavior influenced by predisposing, enabling, and need factors. In another example, Ranji et al. (2007) evaluated health behaviors relating to maintenance of a medical regimen by analyzing the purchase of prescribed medications.

The independent variables in this study included individual enabling factors such as insurance coverage and income. Finally, Agenor et al. (2014) explored the relationship between race and a health behavior (participation in cervical cancer screening) through the lens of intersectionality. The following sections present the variables for this policy and provide supporting research to explain the importance of each variable. Additionally, the following sections provide the rationale for, and steps taken to create more parsimonious variables from the data available in the BRFSS database.

Dependent Variable

The goal of this policy analysis is to understand the relationship between policy changes and participation in cervical cancer screening by low-income women in Pennsylvania. Participation in cervical cancer screening is a health behavior, which is a personal practice that influences health status (Andersen et al., 2014). Behaviors may include diet and nutrition, exercise, self-care, and participation in medical regimens (Andersen et al., 2014). As stated in Chapter 3, the U.S. Preventive Services Task Force (USPTSF) has established clinical guidelines for cervical cancer screening. In 2012, guidelines set by the USPSTF recommended that non-hysterectomy women ages 21 to 65 should participate in cervical cancer screening every three years regardless of sexual activity (U.S Preventive Services Taskforce, 2012). The guideline change raised the baseline age of screening from 18 to 21 years of age and reduced the frequency of screening from annual to every three years (U.S. Preventive Services Taskforce, 2012).

Originally, this analysis included the 2012 BRFSS to provide information about cervical cancer screenings extending back three years to 2009. Since the ACA was enacted in 2010, and women under the age of 26 were given the right to remain on parental insurance, by using data from 2012, my study would provide insight into the impact of this change (Kaiser, 2013a). However, screening guidelines changed in 2012, increasing the baseline age of screening from 18 to 21 years and decreasing recommended screening frequencies from annually to every three years (U.S. Preventive Services Taskforce, 2012). These changes added to the complexity of the 2012 data, since the BRFSS reports age as a categorical variable in which ages 18-24 are in a single category, and the BRFSS did not adopt the new clinical guidelines as part of the survey methodology in 2012 (Centers for Disease Control and Prevention, 2013a). Therefore, this analysis excludes 2012 data.

Beginning in 2014, the BRFSS adopted the clinical guidelines in their data methodology (Centers for Disease Control and Prevention 2015a). The BRFSS data for 2014 and 2016 provides a calculated dichotomous variable based on the newly established guidelines, capturing both the range of non-hysterectomy women ages 21-65 and the newly recommended three-year examination (Centers for Disease Control and Prevention, 2015a; U.S Preventive Services Taskforce, 2012). By using the BRFSS calculated variable "_rfpap33" as the dependent variable, the analysis captures respondents who meet both the age criteria and the recommended frequency for screenings established by the USPSTF.

Independent Variables

Contextual enabling - insurance coverage. The contextual enabling variable of insurance status is the primary independent variable in my policy analysis. The health policy change in 2015 expanded Medicaid to include individuals with household incomes below 138% FPL, which increased the eligibility of many Pennsylvanians for Medicaid benefits in 2016 (Field, 2015; Kaiser, 2015). Health policy is responsible for the change in Medicaid eligibility rather than decisions within the control of an individual. Therefore, insurance status as a function of health policy is a contextual enabling variable for this analysis, as per the BMHS (Andersen & Davidson, 2017).

Research shows that having health insurance improves participation in cervical cancer screening even for those individuals who qualified for free screenings through programs such as NBCCDEP (Sabik & Bradley, 2015). The BFRSS variable "hlthcvr1" is a categorical variable for health insurance coverage. (Centers for Disease Control and Prevention, 2015a, 2017b). The variable “hlthcvr1” has 10 categorical levels of healthcare coverage. Since the focus of this study is Medicaid participation and several of the categories for other health insurances contain limited observations, I decided to reduce the number of categories to produce a more parsimonious variable. Therefore, the insurance variable in this study is the categorical variable “h_care” with five categories. Please refer to Appendix C for codebook for “h_care” and Appendix D for the BRFSS crosswalk table.

The power of health policy changes to increase insurance status and potentially impact preventive health screenings, such as cervical cancer screenings, is the primary area of focus for my policy analysis. However, the literature recognizes other intervening variables.

Individual predisposing -- age. The individual predisposing variable “age” is an important variable for this policy analysis, as age can influence health behaviors. For example, the ACA expanded benefits for individuals under the age of 26 allowing them to remain on their parents’ insurance (Kaiser, 2013a). The sample for this policy study may be covered by insurance not provided by Medicaid while still meeting the income requirements for Medicaid due to coverage through a parent’s insurance. Additionally, research shows that age correlates with participation in regular cervical cancer screenings. Hewitt et al. (2004) found that younger, low-income women without a usual source of care were at the highest risk for not receiving cervical cancer screenings. In another study, Bernard et al. (2015) found that women ages fifty and over were at the highest risk of never participating in cervical cancer screenings.

The BRFSS variable “_age_g” is an imputed categorical age variable with six age levels. For ease of analysis, the variable “age_g” is replaced by the variable “age” containing the same six categorical values. Please refer to Appendix C for the codebook for age, and Appendix D for BRFSS crosswalk table.

Individual predisposing -- race/ethnicity. Race/ethnicity is an individual predisposing variable that influences participation in cervical cancer screenings. The values and beliefs of different races and ethnicities play a role in the perceived importance and comfort with participation in cervical cancer screening. Agenor et al. (2014) examined the association of race/ethnicity with cervical cancer screening. In their research, they demonstrated the complexity of race and other intersecting micro- and macro-level structures in relation to participation. To understand the women in this study, race/ethnicity must be included in the model. The BRFSS variable "_racegr3" has six categorical values for race/ethnicity. For this study, a "_racegr3" is reduced to more parsimonious variable "race" with four categorical values. Please refer to Appendix C for codebook and Appendix D for BRFSS crosswalk table.

Individual enabling -- usual source of care (USC). Studies demonstrate that usual source of care influences participation in cervical cancer screening (Agenor et al., 2014; Friedman et al., 2002; Hewitt et al., 2004; Tangka et al., 2015; Taylor et al., 2006). The BRFSS collects data regarding several aspects of usual source of care including ability to identify a primary care physician, length of time since last routine checkup, and how many physicians' visits were made in the previous year (Centers of Disease Control and Prevention, 2015a, 2017b). The literature indicates that all three of these items may influence participation in cervical cancer screenings. For example, Tangka et al. (2015) and Hewitt et al. (2004) found a relationship between identifying a usual source of care and consistent preventive healthcare. Likewise, Friedman et al. (2002) and Taylor et al. (2006) found that preventive healthcare declined with a decline in the number of annual physician visits, and/or a significant time between physician visits. Based on the literature, this analysis includes all three factors.

This section describes the variables derived from the BRFSS as indicators of the three usual sources of care. The BRFSS variable "_persdoc2" has five categorical values for the number of primary care physicians. For this study, a "_persdoc2" reduces to more parsimonious variable "doc_care" with three categorical values.

The BRFSS variable "checkup1" has seven categorical values for the length of time since last doctor visit. For this study, "checkup1" reduces to the more parsimonious variable "checkup" with four categorical values. The BRFSS variable "drvisit" is a continuous variable for the number of doctor visits in the past year. For this study, "drvisit" reduces to a more parsimonious variable "visit" with six categorical values. Please refer to Appendix C for codebook and Appendix D for BRFSS crosswalk table for the usual source of care variables.

Individual enabling -- education/ employment /marital status. The enabling variables of education, employment, and marital status correlate with increased opportunity for accessing preventive health services. For example, McMorrow et al. (2015) discussed the variance of frequency of cervical cancer screening orders from primary care physicians for individuals with private insurance versus those with Medicaid insurance. The existence of any one of these variables (employment, higher education, marriage) increases the opportunity for a woman to have private insurance (Friedman et al., 2004; McMorrow et al., 2015). To understand the women in the study, it is important to include these variables.

In this section, I describe the study variables derived from the BRFSS variables for education, employment, and marriage. The BRFSS variable "_educag" has five categorical values for the number of primary care physicians. For this study, "_educag" reduces to the more parsimonious variable "ed" with four categorical values. The BRFSS variable "_employ1" has nine categorical values for the number of primary care physicians. For this study, "_employ1" reduces to a dichotomous variable “emp_yn”. Finally, The BRFSS variable “marital” has seven categorical values for the number of primary care physicians. For this study, “marital” reduces to the more parsimonious variable “married” with four categorical values. Please refer to Appendix C for codebook and Appendix D for BRFSS crosswalk table for the individual enabling variables.

The existing literature guides the selection of variables for the policy analysis, as well as this study’s conceptual framework which is based on the BMHS and feminist intersectionality theory, (Brown et al., 2004; Ranji, et al., 2007; Sudano & Baker, 2003). Table 4 summarizes the relationship of dependent and independent variables to the individual and contextual characteristics outlined in the conceptual framework.

Table 4

Variables

		Variables	
BMHS model	Description	Dependent	Independent
Health Behaviors	Cervical Cancer Screening _	_rfpap33	
Contextual Enabling	Health Insurance Coverage		h_care
Individual Predisposing	Age		age
	Race/Ethnicity		race
Individual Enabling	Education		ed
	Employment		emp_yn
	Marital Status		married
	Usual Source of Care		Usual source of care
	1: How many physicians do you have?		1: doc_care
	2: How long since your last routine checkup?		2: checkup
	3: How many times did you see a doctor this year?		3: visits

Note. Variables grounded in conceptual framework and prior research. Derived from data available in BRFSS data set 2014 and 2016 Andersen & Davidson, 2017; Centers for Disease Control and Prevention, 2015a, 2017b.

Data Analysis

In this policy study, I am interested in understanding the impact of changing healthcare policies that improve insurance coverage for low-income women, by including preventive health services such as cervical cancer screenings. In other words, among low-income women, how does the probability of participation in cervical cancer screening change as healthcare policies evolve? To examine this research question, I employ both descriptive and inferential statistics. Logistical regression analysis, a predictive model, is most suitable for describing the relationship between cervical cancer screening and the set of independent and intervening variables described in this chapter (Hamilton, 1992). The following section describes the rationale for my statistical analysis.

Descriptive Statistics

Univariate analysis provides a foundational understanding of each variable in both 2014 and 2016. According to Hamilton (1992), univariate analysis provides the foundation for more complex multivariate analysis by providing a method to evaluate the problems in a less complex environment. In this study, I examine the likelihood that changes in health behavior will occur, by analyzing the behaviors of two different sample groups at two different points in time. It is important to understand how those groups are similar and how they differ from one another other. Descriptive statistics allow for this evaluation. Chapter 5 examines the results of the descriptive statistics in detail.

Inferential Analysis

According to Hamilton (1992), carefully planned diagnostics improve the credibility of a study's results. Therefore, before using the model for statistical inference, I evaluated the model for multicollinearity to ensure that every variable contributed to the model and created the most parsimonious model while still providing the necessary data for examination of the hypothesis. I also employed the use of other regression diagnostics to ensure that the model provided a good fit to the data.

Logistic regression, an extension of multiple regression, is best suited for analyzing a phenomenon in which a dependent variable is dichotomous, rather than continuous or quantitative (Hamilton, 1992). In my policy study, I am interested in the relationship of the dichotomous binary dependent variable (cervical cancer screening “yes,” or cervical cancer screening “no”) as it relates to the independent and intervening variables listed in Table 4. Based on logistic regression outputs, I calculated odds ratios to describe the odds of participation in cervical cancer in 2014 and 2016 (Hamilton, 1992). In the next chapter, I examine the results of the inferential analysis in detail.

Statistical Software Considerations

According to the BRFS**S** User Guide, complex sampling procedures, including stratification, clustering, and sample weights, are necessary for analysis of BRFSS data (Centers Disease Control and Prevention, 2013b). Commonly used statistical programs such as SAS, SPSS, and Stata all meet the criteria necessary for such sampling procedures. Although all three programs meet the requirements according to the BRFSS User Guide, Stata has a robust system for complex survey design and regression analysis (Acock, 2005). According to Stata’s Survey Data Reference Manual (2017) Stata’s survey data analysis program incorporates sampling weights, cluster sampling and stratification. Stata’s development focuses on scholarly analysis making it the most appropriate statistical package for this policy analysis (Acock, 2005).

Summary

The purpose of this study is to understand how changes in health policy during implementation of ACA affected participation in cervical cancer screening by low-income women. As stated previously, Pennsylvania’s adoption of the ACA evolved from 2010 until 2016, resulting in low-income women gaining access to Medicaid benefits by 2016. I hypothesize that that low-income women are more likely to participate in cervical cancer screening in 2016 as compared to 2014 due to the health care policy changes in 2015 which increased access to Medicaid for low-income women.

This chapter provided an overview of the methodology and discussed the benefits and limitations of the use of secondary data from the Behavioral Risk Factor Surveillance Survey (BRFSS) as a data source. Large governmental data sources, such as BRFSS, provide a stronger basis for policy studies than a small single study sample generated by a single researcher. Thus, the use of longstanding governmental data with historical reliability and validity provides a high level of credibility. Furthermore, I outlined the parameters of the population sample and described the variables, as well as the literature that supports their inclusion, and the relationship to the conceptual framework. Finally, this chapter outlined statistical procedures for analyzing the data and other considerations regarding statistical software.

CHAPTER 5

RESULTS

Chapter Introduction

This policy study examines the participation in cervical cancer screenings by low-income women during the time of Medicaid expansion in Pennsylvania. The study analyzes secondary data from the 2014 and 2016 BRFSS to answer the following research question: How was participation in cervical cancer screenings by low-income women impacted by changes in health care policy during the period from enactment of the ACA until full Medicaid expansion in Pennsylvania?

The literature presented in Chapter 3 of this policy analysis supports the hypothesis, which states that the likelihood of low-income women participating in cervical cancer screening will increase in 2016 as compared to 2014 due to policy changes in 2015 which increased access to Medicaid. This chapter provides a description of the population and presents inferential analysis used to test the hypothesis. Staying mindful of the conceptual framework during data analysis is crucial to the understanding of the lived experience of the population addressed by this policy analysis. As discussed in previous chapters, the conceptual model for this policy analysis incorporates the BMHS embedded within a feminist intersectionality theoretical framework to effectively account for the complexity of factors influencing health behaviors.

Descriptive Statistics

Descriptive statistics provide a foundational understanding of each variable in the years 2014 and 2016. According to Hamilton (1992), univariate analysis provides the foundation for more complex multivariate analyses by providing a method to evaluate the data distributions and investigate the research problems in a less complex environment. In this policy study, descriptive statistics provide a snapshot of the characteristics of the sample in each of the two survey years, and in total. Table 5 depicts survey-weighted descriptive statistics by summarizing the demographic of the women who responded either yes or no to the BRFSS survey question regarding participation in cervical cancer screening, and who met the USPSTF criteria for cervical cancer screening (Centers for Disease Control and Prevention, 2013b; U.S Preventive Services Taskforce, 2012). The sample for this policy study consisted of 901 respondents of which 540 were from year 2014, and 361 were from year 2016. The following paragraphs preceding Table 5 briefly review key descriptive statistics of the sample.

Health Insurance Coverage

Most of the respondents reported having health insurance coverage, with 97% reporting some form of health insurance. Medicaid represented a sizable portion of the health insurance coverage among respondents, with 32.90% in 2014, and 41.44% in 2016. Additionally, a substantial portion of the respondents reported having private insurance coverage: 39.13% in 2014 and 31.90% in 2016. Sabik and Bradley (2015) reported similar findings on health insurance coverage, with expansion of Medicaid benefits, reporting 94% coverage after expansion. The discussion of results in Chapter 6 covers the differences in coverage between the two sample years and how the results of this study compare to prior findings.

Demographics

The respondents in both years were primarily single (52.19%), white (62.35%), and women ages 24-44 (32.62%). Over one-third of the women (36.42%) reported having graduated from high school, and a substantial portion (31.75%) reported that they attended some college. Likewise, 48.08% of the women reported that they were currently working. Respondents who reported that they were unable to work, accounting for 19.25% of the respondents, were the second largest category included under employment status.

Usual Source of Care

The descriptive statistical data provide information regarding three usual source of care variables. These three variables consist of respondents identifying if they had one or more physicians, had a routine checkup in the past one to five years, and the frequency of visiting a doctor in the past year. The respondents overwhelmingly reported having more than one physician that they considered a primary physician (75.19%). Likewise, most respondents reported having had a regular checkup in the past year (64.10%). Finally, for those reporting seeing a physician in the last year, 29.77% reported seeing a doctor more than six times.

To summarize the descriptive statistics of the sample for this policy analysis, the typical respondent is a single white woman between the ages of 25 and 44 who is a high school graduate and possibly attended college. The typical respondent works, has health insurance (either private insurance or Medicaid), identifies at least one physician as a primary physician, has gone to her physician for a routine checkup in the last year, and potentially visited a physician more than six times in the past year. The summary of results and discussion section of this policy study compare this sample to prior studies as well as discussing limitations of the sample selection.

Table 5

Descriptive Statistics for Cervical Cancer Screening Sample

		Year		
		2014 (n=540)	2016 (n=361)	Total (n=901)
Cervical Cancer Screening				
	No	23.28%	32.39%	27.72%
	Yes	76.72%	67.61%	72.28%
Insurance status				
	Private	39.13%	31.90%	35.39%
	Medicare	19.84%	17.84%	18.81%

	Medicaid	32.90%	41.44%	37.32%
	Other	6.05%	5.38%	5.70%
	None	2.08%	3.45%	2.79%
Age				
	18-24	14.02%	16.67%	15.31%
	25-34	32.62%	32.62%	32.62%
	35-44	23.41%	21.46%	22.46%
	45-54	16.31%	13.89%	15.14%
	55-64	12.56%	13.79%	13.16%
	65+	1.08%	1.56%	1.31%
Race				
	White	62.41%	62.28%	62.35%
	Black	19.66%	20.08%	19.87%
	Hispanic	11.51%	11.31%	11.41%
	Other	6.41%	6.34%	6.38%
Education				
	Not graduate HS	19.09%	20.6%	19.83%
	HS graduate	37.24%	35.55%	36.42%
	Some college	29.73%	33.87%	31.75%
Employment				
	Employed	50.45%	45.56%	48.08%
	Unemployed	11.53%	12.21%	11.86%
	Homemaker	8.98%	14.38%	11.60%
	Student	5.45%	7.99%	6.68%
	Retired	2.51%	2.54%	2.53%
	Unable to work	21.09%	17.31%	19.25%
Marital Status				
	Married	24.85%	25.51%	25.17%
	Divorced	17.48%	18.41%	17.94%
	Widowed	4.18%	5.24%	4.70%

	Single	53.49%	50.84%	52.19%
Do you have a Physician?				
	Yes – one	22.75%	16.33%	19.62%
	Yes > one	72.36%	78.18%	75.19%
	No	4.90%	5.49%	5.19%
How long since your last check-up?				
	Last year	63.10%	65.15%	64.10%
	Last two years	15.18%	18.11%	16.61%
	Past five years	10.89%	7.61%	9.29%
	> Five years	10.83%	9.13%	10.01%
	Three times	11.34%	15.79%	13.49%
	Four times	9.44%	11.79%	10.58%
	Six times	13.92%	11.24%	12.62%
	> Six times	28.07%	31.60%	29.77%

Note. Table reports survey-weighted descriptive statistics summarizing the demographic of women who met the USPSTF criteria for cervical cancer screening and who responded yes or no to participation in cervical cancer screening in the past three years. Centers for Disease Control and Prevention, 2013b; U.S. Preventive Services Taskforce, 2012.

Inferential Analysis

As outlined in Chapters 3 and 4, the variables in the model are grounded in prior theoretical research and the conceptual frameworks of the BMHS and feminist intersectionality (Andersen et al., 2007; Bowleg, 2012, 2017; Hankivsky, 2010). It is important to have a model that is both theoretically and statistically sound. According to Hamilton (1992), carefully planned diagnostics improve the credibility of a study's results. This section examines the logistic regression model for statistical soundness, including model building through multicollinearity evaluation and model critiquing by examining goodness of fit, the model's classification table, influential observations, and receiver operating characteristic (LROC) curve (Hamilton, 1992; Williams, 2015).

Logistic Regression

Logistic regression, an extension of multiple regression, is best suited for analyzing a phenomenon in which a dependent variable is dichotomous, rather than continuous or quantitative (Hamilton, 1992). Hamilton (1992) explained that logistic regression maximizes log likelihood, which reflects how likely it is, or what the odds are, that the observed values of the independent variables predict the dependent variable observation. This policy study explores the relationship of the dichotomous binary dependent variable "_rfpap33" as it relates to the independent variable (h_care, age, race, ed, emp_yn, married, doc_care, checkup, visit, survey_yr). Table 6 provides the reference category for each variable in the regression analysis. The reference categories are based on normative references and/or theoretical significance for the analysis (The Analysis Factor, 2008). For example, the reference variable for race is white, based on normative reference.

Table 6

Reference Categories for Each Variable in the Logistic Regression

Variable	Reference Category	Variable	Reference Category
Survey_yr	2014	Married	Married
H_Care	None	Employment	Unemployed
Age	18-24	Doc_Care	No PCP
Race	White	Checkup	Within the last year
Education	Did not graduate HS	Visit	Once in the last year

Note. HS = high school; PCP = primary care physician.

Based on logistic regression outputs, I calculated odds ratios to describe the odds of participation in cervical cancer screening (Hamilton, 1992). The results of the logistic regression, demonstrated in Table 7, show that the full model, which considers all ten variables together, was statistically significant, Prob>F =.000, F (30,595) = 3.60, N=625. Following the regression, I evaluated the model for interactions and none were found to be significant. The output implies that the odds for participating in cervical cancer screening relate to the model.

Table 7

Logistic Regression Model for Cervical Cancer Screening

Variable	Category	OR	SE	t	P>t	95%CI
Survey_yr						
	2016	0.54	0.15	-2.19	.029	[0.32, 0.94]
H_Care						
	Private	5.87	4.50	2.31	.021	[1.30, 26.49]
	Medicare	6.31	4.89	2.38	.018	[1.38, 28.92]
	Medicaid	8.86	6.70	2.88	.004	[2.00, 39.14]
	Other	8.41	8.56	2.09	.037	[1.14, 62.06]
Age						
	25-34	11.32	5.99	4.59	.000	[4.01, 31.99]
	35-44	1.30	0.59	0.57	.571	[0.53, 3.18]
	45-54	2.22	1.02	1.74	.082	[0.90, 5.48]
	55-64	0.63	0.31	-0.94	.347	[0.24, 1.65]
	65+	1.74	1.31	0.74	.462	[0.40, 7.68]
Race						

	Black	1.44	0.54	0.96	.338	[0.68,	3.02]
	Hispanic	7.45	5.74	2.60	.009	[1.64,	33.88]
	Other	1.03	0.53	0.07	.947	[0.38,	2.80]
Education							
	HS Grad	0.86	0.32	-0.40	.689	[0.40,	1.81]
	Some College	1.37	0.55	0.81	.420	[0.63,	3.00]
	College Grad	1.85	0.85	1.35	.178	[0.75,	4.55]
Married							
	Divorced	0.91	0.35	-0.25	.803	[0.43,	1.92]
	Widowed	0.26	0.13	-2.72	.007	[0.10,	0.69]
	Single	1.01	0.44	0.02	.983	[0.43,	2.36]
Employment							
	Employed	0.66	0.20	-1.40	.163	[0.37,	1.18]
Doc_Care							
	One PCP	1.85	0.93	1.22	.222	[0.69,	4.94]
	>1 PCP	1.53	1.16	0.56	.577	[0.34,	6.76]
Checkup							
	Last 2 years	1.24	0.58	0.46	.642	[0.50,	3.09]
	Last 5 Years	0.26	0.16	-2.18	.030	[0.08,	0.87]
	Over 5 years	0.09	0.06	-3.73	.000	[0.03,	0.33]
Visit							
	Twice	1.53	0.78	0.83	.404	[0.56,	4.14]
	3X	1.47	0.72	0.80	.424	[0.57,	3.81]
	4X	1.82	0.99	0.80	.273	[0.62,	5.31]

6X	2.60	1.46	1.70	.090	[0.86,	7.85]
>6X	1.87	0.83	1.41	.158	[0.78,	4.48]

Number of observations = 625

Population size = 863,543.38

Design df = 624

F(30, 595) = 3.60

Prob >F =.0000

Note. OR= odds ratio; SE=standard error; Prob.= probability, CI=confidence error; PCP = primary care physician; df =degrees of freedom

Model Building

Multicollinearity. Assessing for multicollinearity allows for examination of the interaction of the variables with one another as well as their importance to the overall model (Williams, 2015). Hamilton (1992) explained that multicollinearity causes variables to measure the same phenomenon under study or suggests the same information that predicts the results in regression analysis. Variance Inflation Factor (VIF) provides a measure to assess the impact of multicollinearity among variables, while the tolerance (1/VIF) explains what proportion of the variance of a variable is independent of all other variables (Hamilton, 1992). Multiple regression analysis followed by VIF and tolerance provided insight into any potential issues with collinearity (Williams, 2015).

As stated in Chapter 4, the analysis of complex survey data is best performed using statistical software with survey mode capabilities (Stata Survey Data Reference Manual, 2017). The calculation of VIF and tolerance followed regression of each independent variable on all other variables in the statistical survey mode (UCLA Statistical Consulting Group, 2018). According to Wissmann, Toutenburg, and Shalabh (2007), “problems of multicollinearity in the presence of categorical variables exist in which the presence of a dummy variable and choice of reference category can cause multicollinearity" (p. 32). Therefore, to further assess for multicollinearity, I calculated VIFs and tolerances following standard regression analysis using different reference categories, and derived output equivalent to the original survey mode. Table 8 includes the VIF and tolerance (1/VIF) for independent and intervening variables.

Table 8

Variance Inflation Factors and Tolerance Values for Independent Variables.

Variable	VIF	1/VIF
H_care*	1.19	.84
Age	3.23	.31
Race	1.09	.92
Ed	1.18	.85
Married	1.36	.73
Doc_care	1.19	.84
Checkup	1.23	.81
Visit	1.16	.86
Survey_yr	1.03	.97

Note. VIF= variance inflation factor; 1/VIF = tolerance values for independent variables

The check for multicollinearity suggested the existence of a potential problem with collinearity. According to Williams (2015), reasons for concern exist when VIF exceeds 2.5 and tolerance (1/VIF) is less than .4. As Table 8 illustrates, all variables had a VIF under 2.5 and tolerance under .4 except "age' which had a VIF of 3.23 and a tolerance of .31. Further exploration of the model demonstrated a bivariate relationship between the variable “age” with the variable “emp”. The correlation of “age” and “emp” was .45 indicating a moderate positive relationship.

Table 9

Final Model Variance Inflation Factors and Tolerance for Independent Variables.

Variable	VIF	1/VIF
H_care*	1.16	.86
Age	2.36	.42
Race	1.08	.92
Ed	1.13	.88
Emp_yn	1.43	.70
Married	1.34	.74
Doc_care	1.86	.84
Checkup	1.22	.81
Visit	1.10	.91
Survey_yr	1.03	.97

Note. VIF= variance inflation factor; 1/VIF =tolerance values for independent and intervening variables in the final model. *= Independent variable; all other variables are intervening variables. Williams, 2015.

Williams (2015) recommends that adding variables together or reducing variables is a strategy to deal with multicollinearity. The variable “emp” contains six categories including five types of unemployment such as: unemployed, student, homemaker, retired, and unable to work. Combining these five categories into one categories provides a more parsimonious variable. The replacement of the categorical variable “emp” with a dichotomous variable “emp_yn” changes the variable from six employment categories to employed yes or no which addresses the issue of multicollinearity and better represents the substantive nature of the variable. The replacement of “emp” changed the relationship to “age” and results in a reduction in the VIF and tolerance of "age" to 2.36 and .42 respectively. Replacing the categorical variable "emp" with a dichotomous variable "emp_yn" allows for the model to contain data regarding employment status while mitigating the issue of multicollinearity. Table 9, shown above, provides the VIF and tolerance following the changes to the model.

Goodness-of-fit. The Pearson χ^2 goodness-of-fit test "compares the observed frequencies with the expected frequencies using the number of covariate patterns or various combinations of independent variables predicting the dependent variable, "screening" (Stata User's Guide 15, 2017, p.668). According to Heeringa, West, and Berglund (2010), when software programs do not provide the capabilities to generate summary goodness-of-fit measures via their survey program, researchers should re-estimate the model using the system's standard logistic regression program. Heeringa et al. (2010) stated that:

> weighted estimates of parameters and predicted probabilities will be identical and serious lack of fit should be quantifiable even though the standard program tools do not correctly reflect variance and covariance of the parameter estimates given the complex sample design. (p. 244)

Since this is the case for the Stata software program, goodness-of-fit and the other measures used to critique the model are performed following standard logistic regression versus survey mode logistic regression (Stata's User Guide 15, 2017). As noted by the Pearson χ^2 in Table 10, the model fits reasonably well (Probability χ^2=0.23). However, the number of covariate patterns is close to the number of observations (604 to 625), making Pearson χ^2 questionable (Stata User's Guide 15, 2017). Regrouping the data by ordering on the predicted probabilities as per the Hosmer-Lemeshow method provided further insight to goodness-of-fit (Stata User's

Guide 15, 2017). Table 11 depicts Hosmer -Lemeshow χ^2 (Probability χ^2 =0.74) thus collaborating the Pearson χ^2 outcome of an acceptable fit.

Table 10

Pearson χ^2 Logistic Model Goodness-of-Fit

Characteristics		
Number of observations	=	**625**
Number of covariate patterns	=	**604**
Pearson chi2(573)	=	**597.92**
Prob>chi2	=	**0.2281**

Note.: Prob = probability

Table 11

Hosmer-Lemeshow χ^2Logistic Model Goodness-of-Fit

Characteristics		
Number of observations	=	**625**
Number of covariate patterns	=	**10**
Hosmer-Lemeshow Chi2(8)	=	**5.12**
Prob>chi2	=	**0.7446**

Note. Prob = probability

Classification table. The classification table for cervical cancer screening, as shown in Table 12, evaluates the predictive accuracy of the logistic regression model. The table summarizes the results of the fitted logistic model via a classification model (Stata User's Guide 15, 2017). The overall rate of correct classification was 79.84%. Of these 95.88% of the "yes" participating in the screening group correctly classified "sensitivity," and only 24.29% of the “no” participating in the screening group correctly classified “specificity” (Stata User’s Manual 15, 2017).

Table 12

Classification Table for Screening

Classified	True D	 ~D		Total
+	465	106		571
-	20	34		54
Total	485	140		625
Classified + if predicted Pr(D)≥.5				
True D defined as Cervical Screening = Yes				
Sensitivity		Pr(+|D)	95.88%	
Specificity		Pr(-|~D)	24.29%	
Positive predictive value		Pr(D|+)	81.44%	
Negative predictive value		Pr(~D|-)	62.96%	
False + rate for true~D		Pr(+|~D)	75.71%	
False – rate for true D		Pr(-|D)	4.12%	
False + rate for classification+		Pr(~D|+)	18.56%	
False - rate for classification -		Pr(D|-)	37.04%	
Correctly Correlated			79.84%	

Note. D = the event of interest (Screening) did occur for that observation; ~D = the event of interest (Screening) did not occur for that observation.

The predictive probability of screening graph further provides visual clarity of the correctly classified observations. Predicted probabilities with change in deviance illustrate “the measure of influence of covariant patterns; that is, the consequence of dropping all observations with that particular combination of x values” (Hamilton, 2013, p. 260). Figure 4 illustrates the fit of the observations and supports the findings in the classification table. The up to right curve represents the "no" response to screening by which the classification table identified only 24.29% as correctly classified (34 out of 106). Whereas the up to left curve represents the "yes" to response screening by which the classification table identified 95.88% as correctly classified (465 out of 485) (Hamilton, 1992).

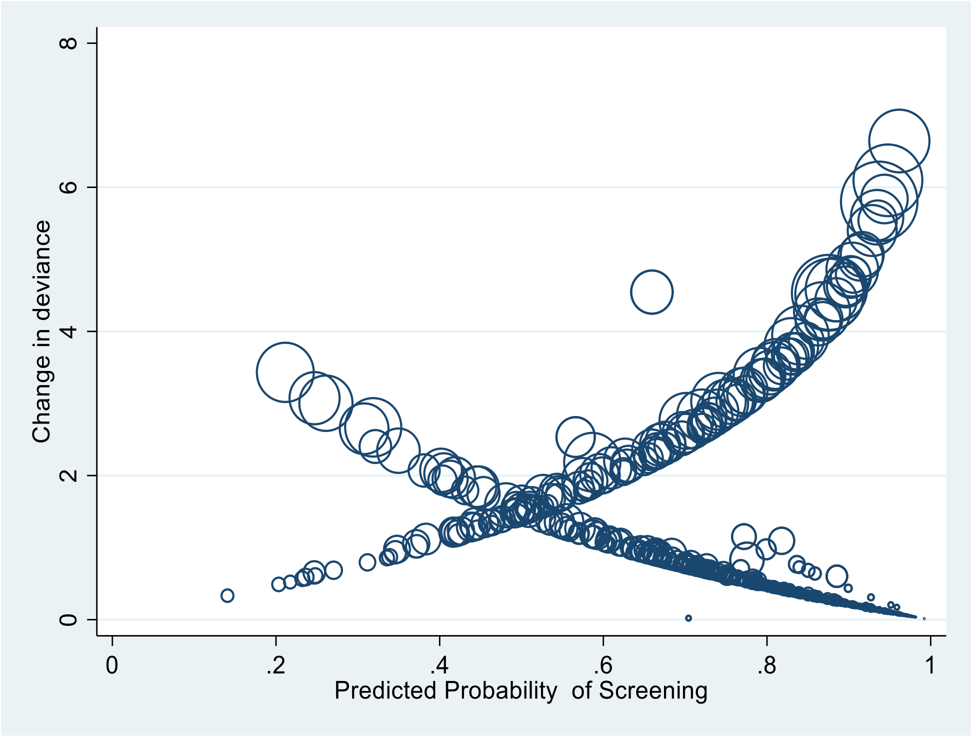

Figure 4. Predictive probability of screening versus change in deviance with the up to the right curve graphing the "no" answers to screening observations, and the up to the left curve graphing the "yes" answers to screening observations.

Area under the LROC curve. As a final critique of the model, the logistic receiver operator curve (LROC) provides an overall description of classification. The area under the LROC curve measures the model's ability to discriminate, or correctly classify, between respondents who participated in screening those who did not (Tape, n.d.). The area, which ranged from 0 to 1, provides a measure of discrimination. Figure 5 illustrates that the area under the ROC curve is 0.76 which indicates, from an exploratory research perspective, an adequate discrimination of participation in screening versus no screening (Tape, n.d.).

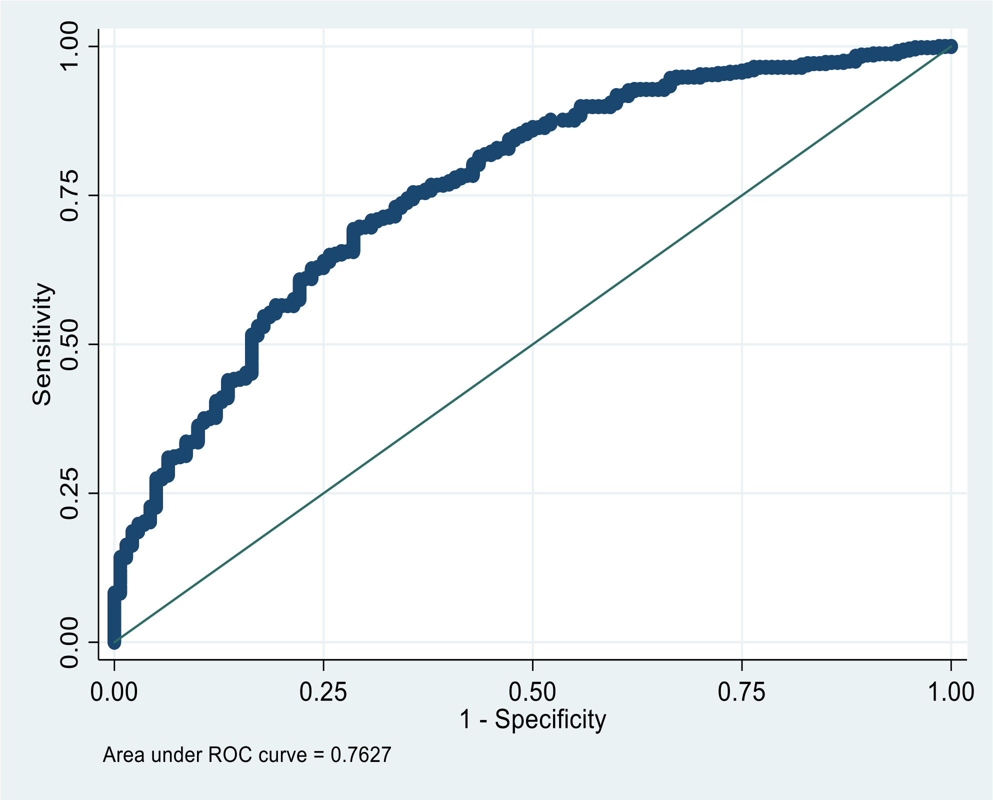

Figure 5. Logistic receiver operating curve (LROC). The area under the curve = 0.76 indicating adequate fit.

Prior to employing logistic regression for statistical inference, it is important to have a statistically sound model. This section demonstrated the model's statistical soundness including an assessment of multicollinearity, goodness of fit, the model's classification, influential observations, and LROC curve. The following section in the chapter discusses the outcomes from the logistic regression including identification of significant variables and predictive probabilities of the dependent variable, cervical cancer screening (_rfpap33) as it relates to the significant independent variables.

Exploring the Model

This policy study explores the relationship of the dichotomous binary dependent variable "_rfpap33" as it relates to the independent variable (h_care, age, race, ed, emp_yn, married, doc_care, checkup, visit, survey_yr). Based on logistic regression outputs, I calculated odds ratios to describe the odds of participation in cervical cancer screening (Hamilton, 1992). As shown in Table 7, the results of the logistic regression show that the full model, which considers all ten variables together, was statistically significant. This implies that the odds for participating in cervical cancer screening relate to the model.

The following section explores the model through marginal effects, including contrast joint test for significance and pairwise comparison of groups within significant variables. This is followed by predicted probability of cervical cancer graphs to illustrate significant relationships from the logistic regression. Table 20, provided at the conclusion of this section, demonstrates a summary of the significant variables and their significant groups.

Contrasts joint test. Table 13 depicts the contrast with joint test for all independent variables in the model. Contrast test examines factor variables and their interaction from the logistic regression (Stata User's Guide 15, 2017). The Prob>F is a joint two-tailed test of contrasts that depicts significance level of each variable. (Hamilton, 1992, Stata User's Guide 15, 2017). The joint test for effects indicates that the variables "age," "married," and "checkup" are significant at a $p<.05$ level. Whereas, h_care, race, and survey_yr are significant at a $p<.10$ level.

Table 13

Joint Test of Effects

	df	F	Prob>F
h_care	4	2.20	.0680
Age	5	7.04	.000
Race	3	2.43	.0646
Ed	3	1.47	.2206
Emp_yn	1	1.95	.1632
Married	3	3.22	.0224
Doc_care	2	0.80	.4515
Checkup	3	5.89	.0006
Visit	5	0.69	.6333
Survey_yr	1	4.80	.0288
Design	624		
Number of observations	625		
F(30, 595)	3.60		
Prob>F	.0000		

Note. Joint Test for Effects determines significance at a $p<.05$ and $p<.10$; df = degrees of freedom; Prob = probability; F = statistics adjusted for the survey design.

This policy analysis examines the probability of women receiving a medical screen that has the potential to detect early onset of cervical cancer (National Institute of Health, 2010). It is crucial to understand every factor with the potential to influence a woman's participation in cervical cancer screening. According to Rossi, Lipsey, and Freeman (2004), when examining social programs with promising interventions, or involving potential health advantages, such as a cervical cancer health screen leading to disease prevention, an evaluator should consider a significance level of p<.10. This reduces the probability of concluding that no relationship exists when in fact one does exist. Therefore, for the purpose of this policy study, the analysis includes all variables with a significance level of p<.05 or p<.10.

Joint tests for effects offer a first step in examining factor variables in a logistic regression model (Stata User's Manual 15, 2017). Pairwise comparisons, which calculate statistical comparisons of predictive probability between groups, provide a second step in examining significant variables (Stata User's Guide 15, 2017). This process satisfies Fisher's protected LSD multiple comparison test, which requires a significant joint test before proceeding with pairwise comparisons (Stata User's Guide 15, 2017). The following section addresses pairwise comparison of the significant variables and illustrates its relationship to the predictive probability of cervical cancer screening.

Pairwise Comparison and Predictive Probability of Screening

Survey year. The variable "survey_yr" is a dichotomous variable and is significant (Prob>F =.029). Table 14 depicts the predictive probability of cervical cancer screening in 2016 versus 2014. The predictive probability of -.08 indicates that women were less likely to participate in cervical cancer screenings in 2016 than in 2014. The hypothesis of this policy analysis, based on prior literature, stated that the likelihood of women participating in cervical cancer screening would likely improve in 2016 versus 2014 due to health policy changes. The outcome of the logistic regression suggests that the sample population for this policy study was not more likely to participate in screening, which is contrary to the initial expectation. Further evaluation of the other significant variables provides insight into the probability of screening in 2014 and 2016.

Table 14

Pairwise Comparison Survey Year

Survey_yr	Contrast	SE	t	P>|t|	95% CI
2016 vs 2014	-.08	0.04	-2.18	.029	[-0.15 -0.01]

Note. SE = Standard error; CI = confidence interval. Table 12 depicts a -0.8% predictive probability of screening in 2016 versus 2014.

Health insurance. Health insurance status (Prob>F= .069) is a significant predictor of participation in cervical cancer screening. Table 15 depicts the significant comparisons among the groups in which those in the group "none" are less likely than all other insurance groups to participate in cervical cancer screening.

Table 15

Pairwise Comparison Health Insurance

Health Insurance	Contrast	SE	t	P>|t|	95% CI
None vs private	-.29	0.13	-2.22	.027	[-0.54 -0.03]
None vs MC	-.30	0.13	-2.28	.023	[-0.56 -0.04]
None vs MD	-.34	0.13	-2.65	.008	[-0.18 -0.09]
None vs other	-.33	0.15	-2.23	.026	[-0.63 -0.04]

Note. SE = Standard error; C I= confidence interval; MC = Medicare; MD = Medicaid Table 13 depicts predictive probability of group "none" in contrast to other health insurance groups.

The predictive probability illustrates that the women in the "none" group were 34% less likely than women with Medicaid to participate in screenings. The same relationship is evident with Private Insurance (29%), Medicare (30%) and Other Insurance (33%). This finding aligns with prior research, which indicates that lack of insurance correlates with a higher probability of not participating in screenings (Ahluwalia et al., 2007; Sabik & Bradley, 2015, Taylor et al., 2006).

Predictive probability screening and health insurance. Figure 6 illustrates the predictive probability of participation in cervical cancer screening by health insurance. As discussed above, the predictive probability of screening for the sample overall was markedly less for the uninsured as compared to those who are insured. However, the sample size for the uninsured group was small (2.79%) and the confidence interval for "none" was therefore the largest among all health insurance categories (0.23-0.72). Figure 7 illustrates the differences between 2014 and 2016, showing an overall decline in screening probability from 2014 to 2016 for all groups. Figure 8 illustrates the differences between 2014 and 2016, showing an overall decline in screening probability from 2014 to 2016 across groups of insurance. Both Figure 7 and Figure 8 illustrate that the uninsured were markedly less likely to participate in screening in 2014 and 2016. Also, the rate of decline from 2014 and 2016 is similar for all insurance types (private insurance 2014 (.80) to 2016 (.71); Medicare 2014 (.81) to 2016 (.73); Medicaid 2014 (.85) to (.78) in 2016; None 2014 (.52) to 2016 (.42).

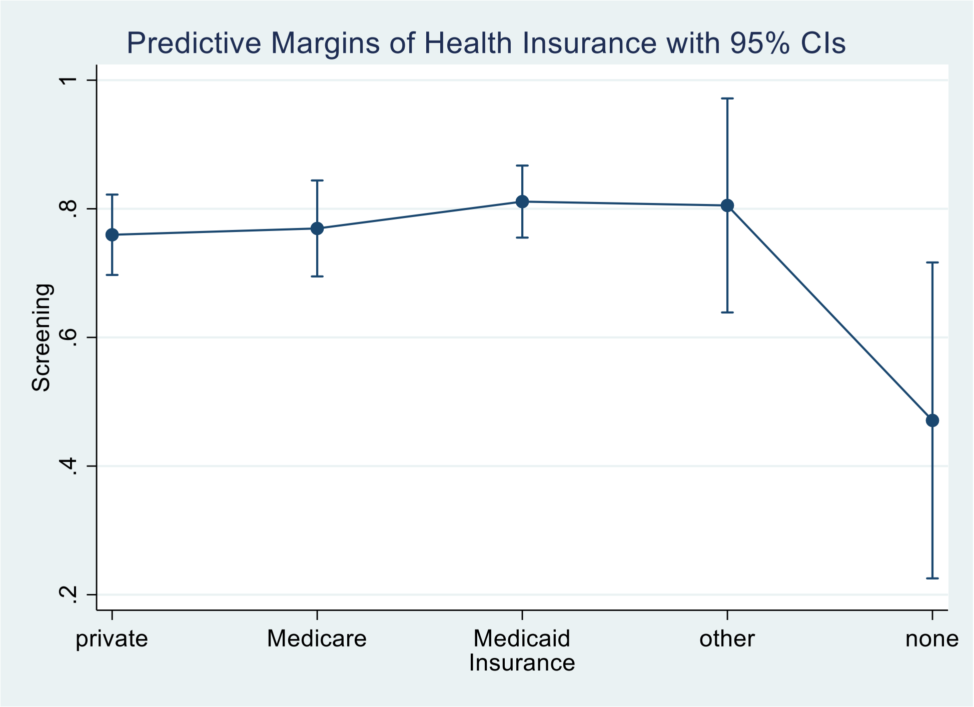

Figure 6. Predictive probability of screening by insurance group for the total sample with CI indicating confidence interval.

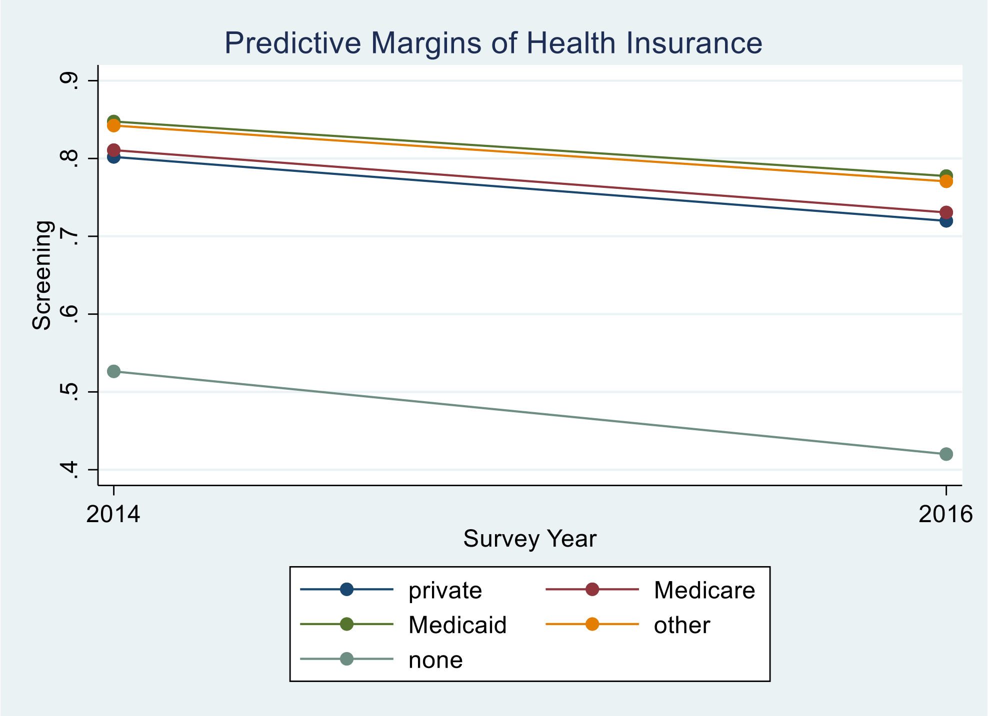

Figure 7. Predictive probability of screening from 2014 to 2016 by health insurance showing decline in all insurances from 2014 to 2006.

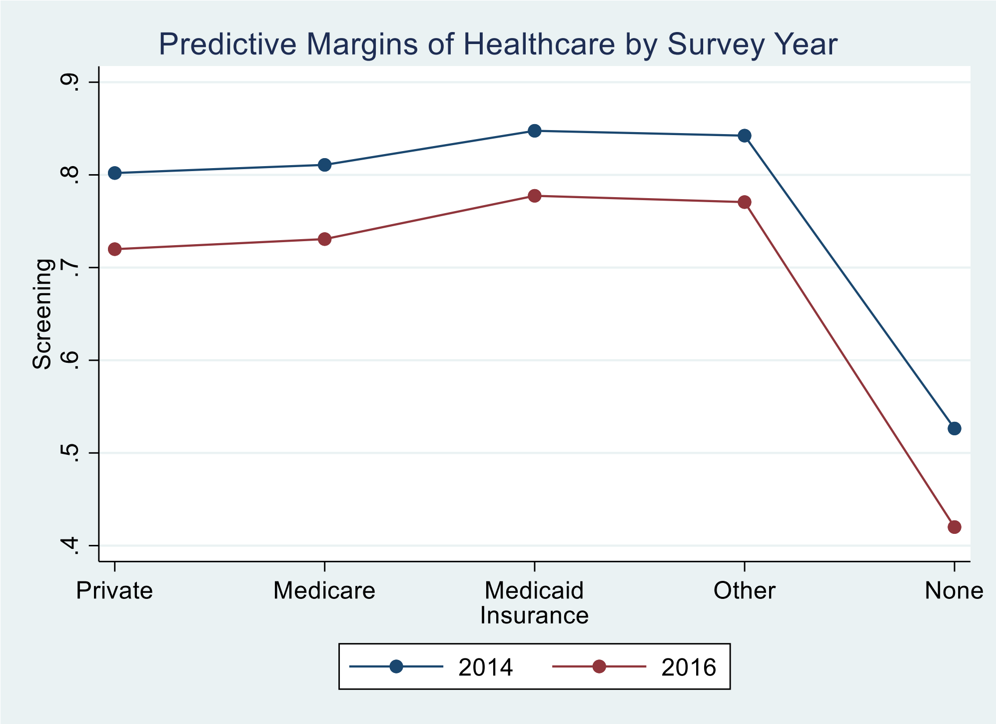

Figure 8. Predictive probability of screening by insurance group for 2014 and 2016.

Age. The variable "age" is a significant predictor (Prob>F=.000) of participation in cervical cancer screening. Table 16 depicts the significant comparisons between age groups. Women ages 25-34 were more likely than all other age groups to participate in cervical cancer screening, and women ages 55-64 were less likely than other groups to participate in cervical cancer screening. Prior research supports variance in screening by age groups (Hewitt et al., 2004; Bernard et al., 2015). The discussion of results in Chapter 6 explores the relationship of age to screening in this policy study.

Table 16

Pairwise Comparison of Age

Age	Contrast	SE	t	P>|t|	95% CI
24-34 vs 18-24	.26	0.06	4.30	.000	[0.14 0.38]
45-54 vs 18-24	.12	0.07	1.70	.091	[-0.02 0.26]
35-44 vs 25-34	-.22	0.05	-4.17	.000	[-0.32 -0.12]
45-54 vs 25-34	-.14	0.04	-3.22	.001	[-0.23 -0.05]
55-64 vs 25-34	-.35	0.06	-5.46	.000	[-0.47 -0.22]
65+ vs 25-44	-.17	0.09	-1.87	.061	[-0.36 0.08]
55-64 vs 35-44	-.13	0.07	-1.84	.066	[-0.26 -0.01]
55-64 vs 45-54	-.22	0.07	-3.13	.002	[-0.33 -0.08]
65+vs 55-64	.17	0.10	1.79	.074	[-0.02 0.36]

Note. SE = Standard error; CI = confidence interval. Table 14 depicts predictive probability of the significant age groups (25-34) and (55-64) to other groups.

Predictive probability screening and age. Figure 9 illustrates the probability of participation in cervical cancer screening by age group. As discussed above, the predictive probability of screening in either year was markedly greater for women in the 25-34 age group and markedly less for women ages 55-64. Figure 10 illustrates the differences between 2014 and 2016, showing an overall decline in screening probability from 2014 to 2016 for all age groups except ages 25-34, which remained relatively stable. Figure 11 illustrates the predictive probability of screening for each year by age group. Again, overall, 2016 showed a lower predictive probability than 2014. However, for the age group 25-34, the probability of the two years was closer than all other age groups (2014 at .95, and 2016 at .92).

The relative stability of predictive probability of screening by the 25-34 age group as compared to the decline in other age groups in 2016 warrants further investigation. Figure 12 illustrates the predictive probabilities of screening of each age group by insurance. It shows that women ages 25-34 had a higher overall predictive probability of screening even without insurance coverage than all other age groups. For example, the predictive probability of screening for uninsured women ages 25-34 was .76, whereas the predictive probability of uninsured women ages 55-64 was lower overall (Private .56; Medicare .57; Medicaid .64; Other .62, None .22).

The relationship of age, health insurance status, and screening depicted in Figure 12, suggests that other factors may influence the health behaviors of these two groups. The findings for ages 25-34 are not in line with prior research. For example, Sabik and Bradley (2015) reported that although uninsured women had access to free services through programs such as NBCCEDP, these programs were underutilized, and gaining access to health insurance significantly improved participation in screening. Likewise, Tangka et al. (2015) found that, although women had access to NCBBEDP, very few women received services through the program. The discussion in the results section in Chapter 6 explores the relationship of these findings through the lens of the conceptual framework of this policy analysis.

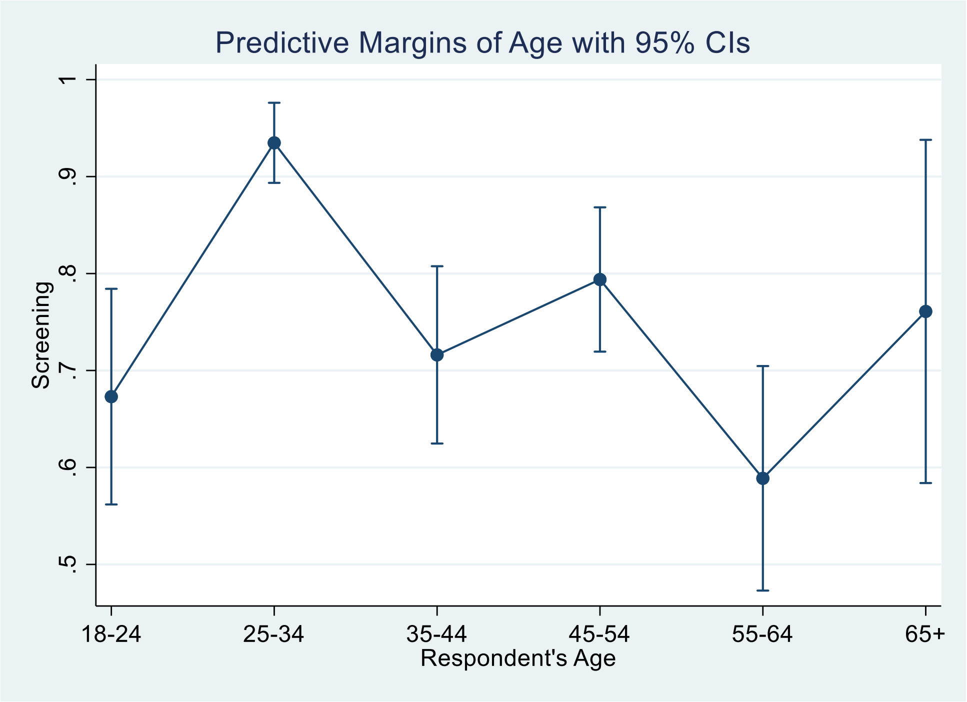

Figure 9. Predictive probability of screening by age group for the total sample with CI = Confidence Interval

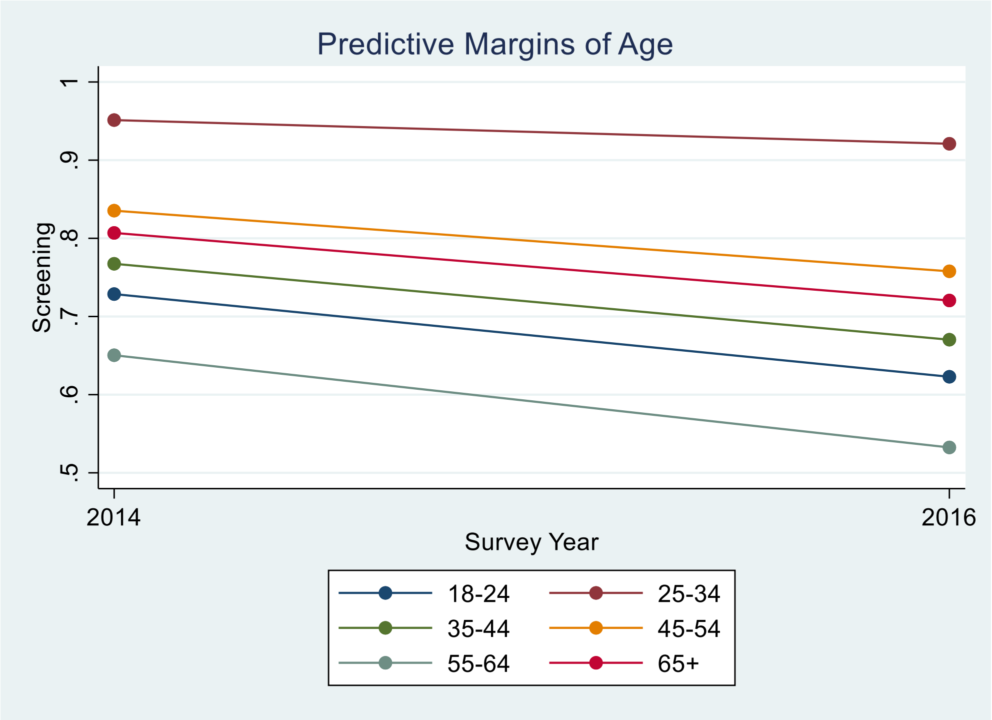

Figure 10. Predictive probability of screening by age group from 2014 to 2016.

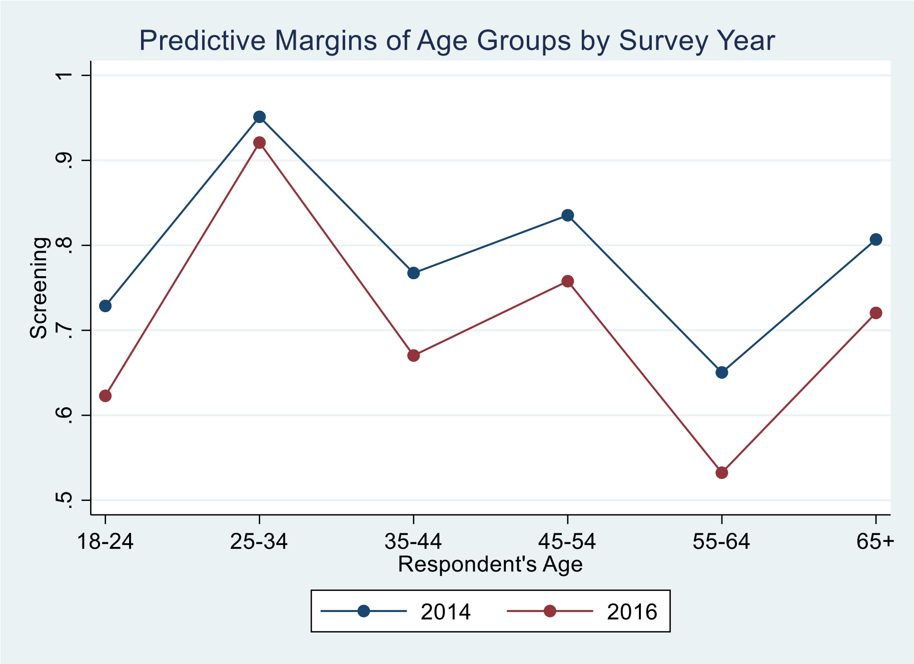

Figure 11. Predictive probability of screening by year for age groups.

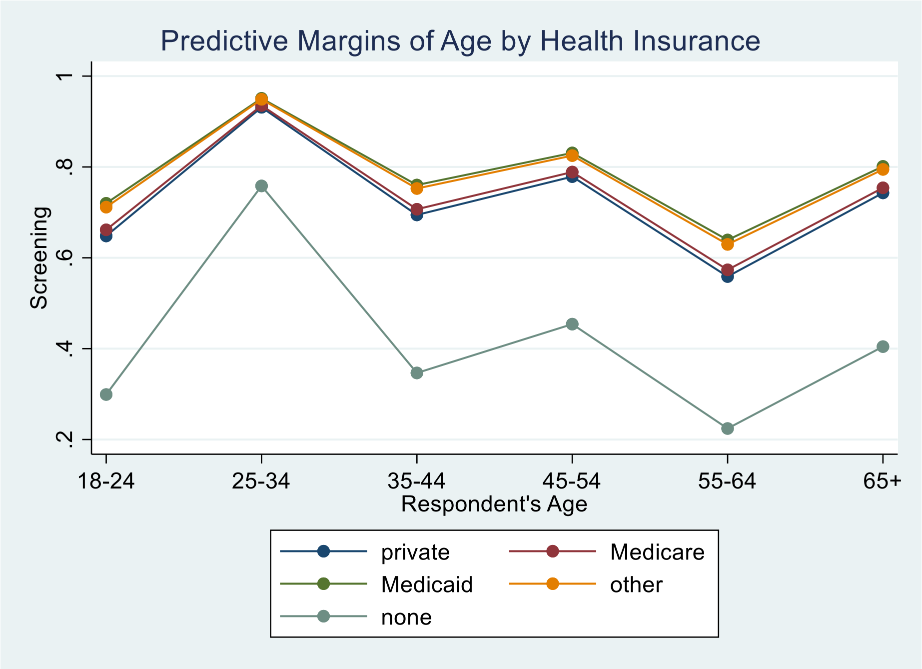

Figure 12. Predictive probability of screening by health insurance for age groups indicating increased predictive probability of screening by ages 25-34 as compared to other age groups

Race. The variable "race" is a significant predictor (Prob>F=.065) of participation in cervical cancer screening. Table 17 depicts the significant comparisons within race/ethnicity, in which Hispanic women were more likely than all other races to participate in cervical cancer screening. Hispanic women were 13% more likely than black women and 18% more likely than all other women to participate in screening. Although race is significant, it is significant only at a p<.10 level, whereas age and marital status are significant at a p<.05 level. Additionally, Hispanic women represented 11.41% of the population sample compared to white (62.35%) and black (19.87%). The lower threshold of significance and the small sample size of Hispanic women relative to other races warrants caution when referencing race as a significant influence on the probability of cervical cancer screening in this policy study.

Table 17

Pairwise Comparison of Race

Race/Ethnicity	Contrast	SE	t	P>|t|	95% CI
Hispanic vs white	.18	0.04	4.13	.000	[-0.05 0.14]
Hispanic vs black	.13	0.06	2.48	.014	[0.03 0.24]
Other vs Hispanic	-.18	0.08	-2.23	.026	[-0.34 -0.22]

Note. SE= Standard error; CI= confidence interval. Table 15 depicts predictive probability of the significant race/ethnicity group (Hispanic).

Predictive probability for race/ethnicity and screening. Figure 13 illustrates the probability of participation in cervical cancer screening by race/ethnicity. As discussed above, the predictive probability of screening in both years is larger for Hispanic women (.93) when compared to white (.75), black (.80), and other races (.75). Figure 14 illustrates the differences between 2014 and 2016, showing an overall decline in screening probability from 2014 to 2016 for all groups. Figure 15 illustrates the predictive probability of screening for each year by race/ethnicity. Again, overall 2016 shows a lower predictive probability than 2014.

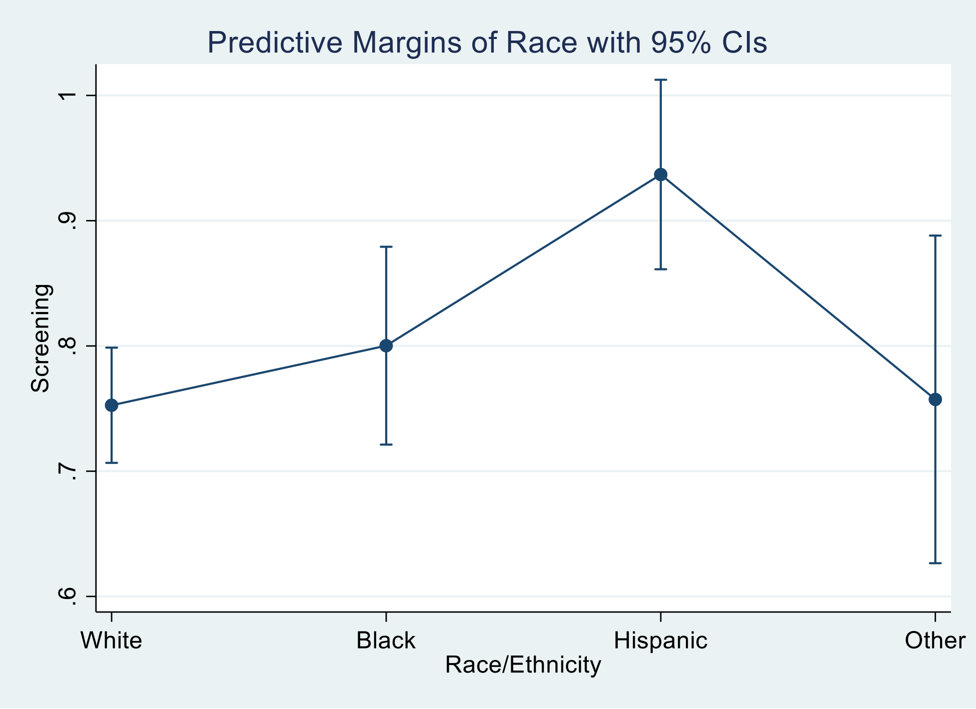

Figure 13. Predictive probability of screening by race/ ethnicity for total sample with CI = confidence interval.

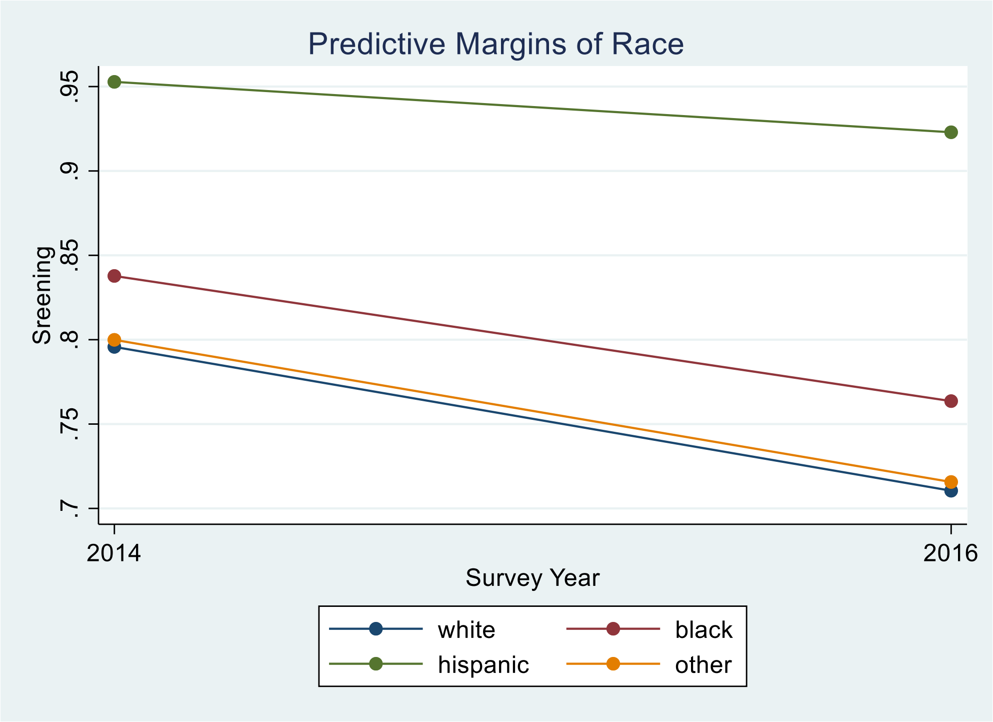

Figure 14. Predictive probability of screening by race/ ethnicity from 2014 to 2016.

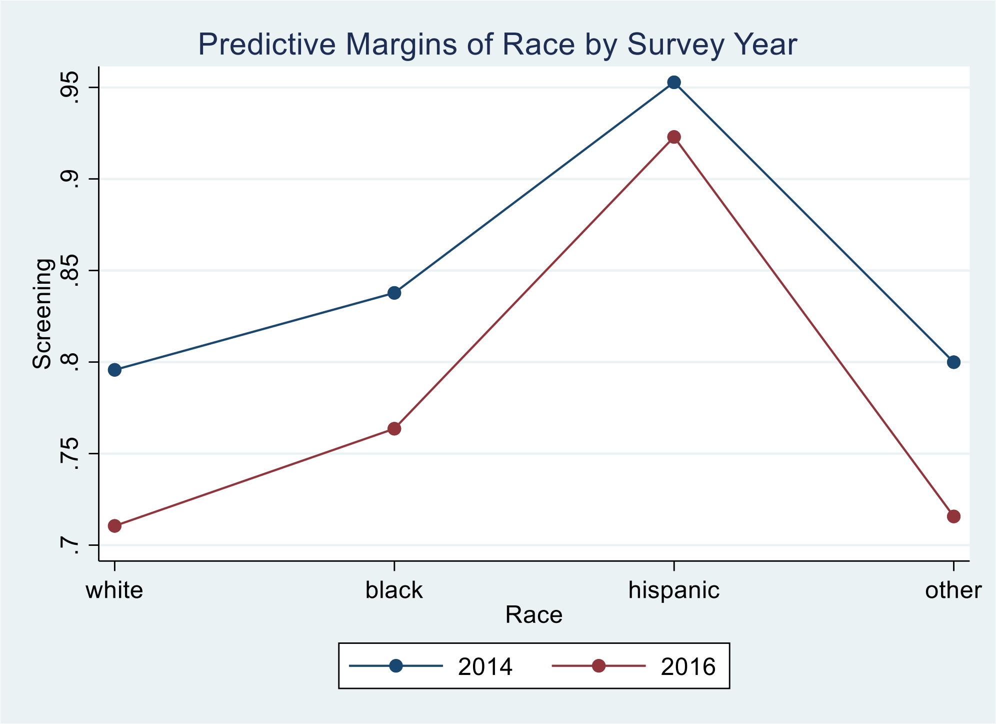

Figure 15. Predictive probability of screening by year for each race/ethnicity.

Marital status. The variable married is a significant predictor (Prob>F = .022) of participation in cervical cancer screening. Table 18 depicts the significant comparisons among the marital status. It shows that widowed women were less likely than any other marital statuses to participate in cervical cancer screening. Widowed women were 19% less likely than divorced/separated women and 21% less likely than single or married women to participate in screening. Widowed women represented 4.70% of the population sample, compared to married women (25.17%), divorced/separated women (17.94%), and single women (52.19%). The small sample size of widowed women relative to other marital statuses warrants caution when referencing marital status as a significant influence on the probability of cervical cancer screening in this policy study.

Table 18

Pairwise Comparison of Marital Status.

Marital Status	Contrast	SE	t	P>|t|	95% CI
Widowed vs Married	-.21	0.08	-2.56	.011	[-0.36 -0.48]
Widowed vs Divorced Separated	-.19	0.08	-2.58	.010	[-0.34 -0.46]
Single vs Widowed	.21	.08	2.57	.010	[0.05 0.36]

Note. SE= Standard error; CI= confidence interval. Table 15 depicts predictive probability of the significant marital status (widowed).

Predictive probability for marital status and screening. Figure 16 illustrates the probability of participation in cervical cancer screening by marital status. As discussed above, the predictive probability of screening in both years was smaller for widowed women (0.59) when compared to married women (.79), divorced/separated women (.78) and single women (.79). Figure 17 illustrates the differences between 2014 and 2016, showing an overall decline in screening probability from 2014 to 2016 for all groups. Figure 18 illustrates the predictive probability of screening for each year by marital status. Again, overall, 2016 shows a lower predictive probability than 2014.

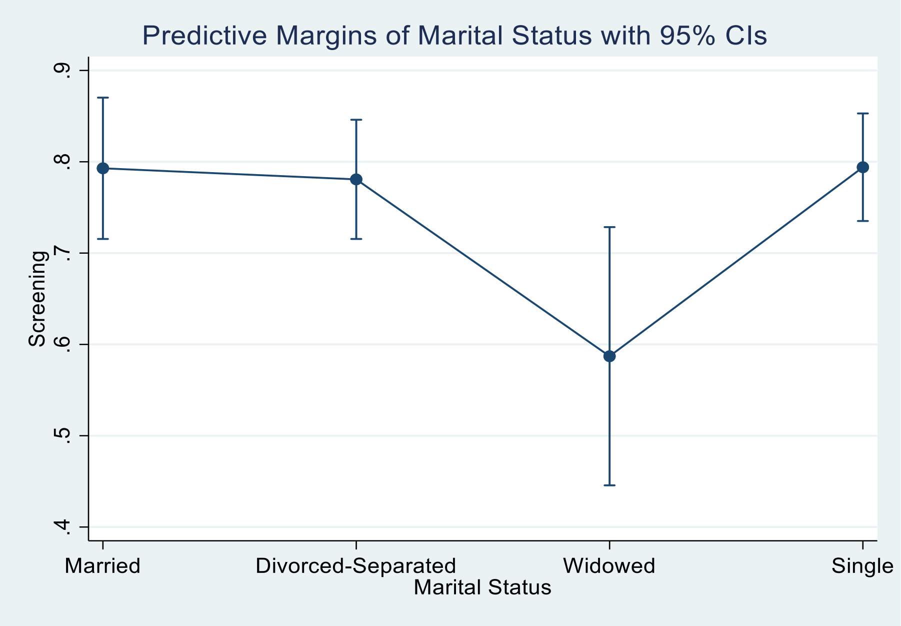

Figure 16. Predictive probability of screening by marital status for total sample.
CI- confidence interval

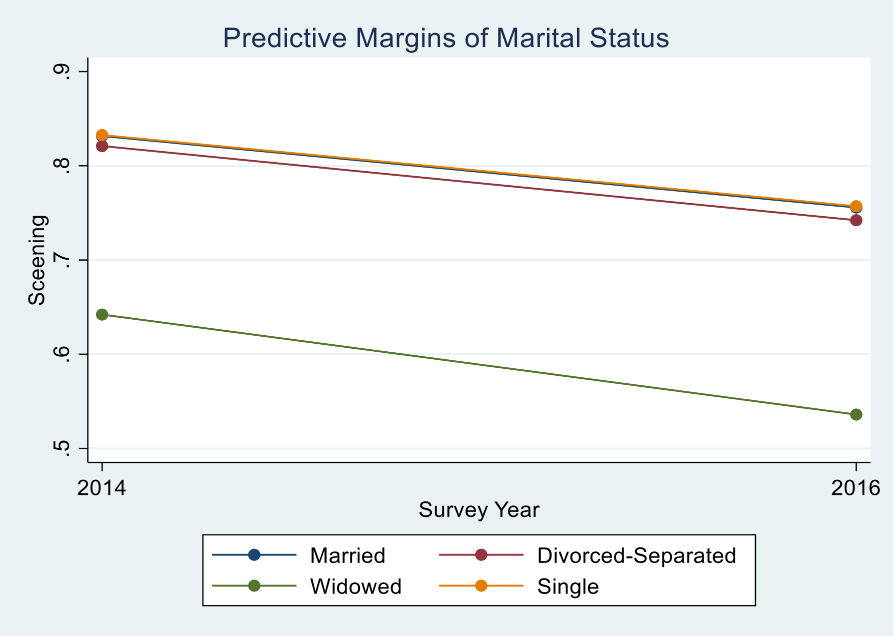

Figure 17. Predictive probability of screening by marital status for 2014 and 2016.

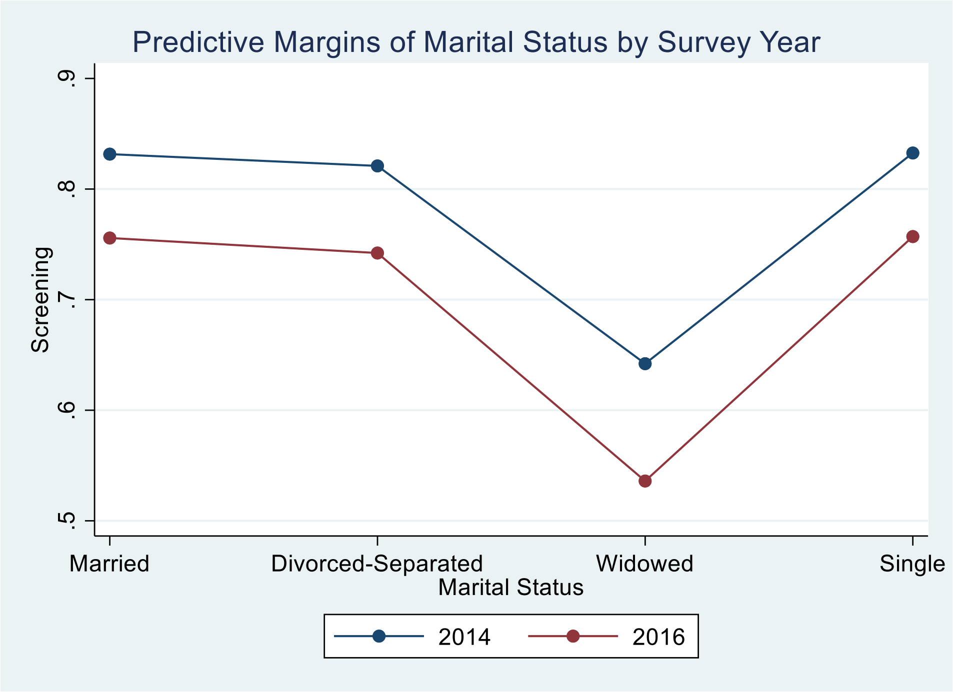

Figure 18. Predictive probability of screening by year for each marital status.

Checkup. Of the three variables related to usual source of care (doc_care, checkup, visit), checkup was the only significant predictor (Prob>F=.000) of participation in cervical cancer screening. Table 19 depicts the significant comparisons between the times since last routine checkup. Women who had a routine checkup in the past three to five years, and women whose last routine checkup was more than five years ago, were less likely to participate in cervical cancer screenings than women whose routine checkup occurred within the last two years. Women whose routine checkup was within the last three to five years were 21% less likely to participate in cervical cancer screening than women whose routine checkup was in the last year, and 24% less likely than women whose routine checkup was in the last two years. For women whose last routine checkup was more than five years ago, they were 39% less likely than women who had a routine checkup in the last year, and 41% less likely than those who had a routine checkup in the last two years.

The literature supports usual source of care factors as an indicator for participation in regular health screenings (Agenor et al., 2014; Friedman et al., 2002; Hewitt et al., 2004; Tangka et al., 2015; Taylor et al., 2016). The discussion of findings in Chapter 6 explores the relationship of these findings through the lens of the conceptual framework for this policy analysis.

Table 19

Pairwise Comparison of Checkup.

Checkup	Contrast	SE	t	P>|t|	95% CI
Past 5 years vs last year	-.21	0.11	-1.95	.052	[-0.42 0.00]
Over 5 years vs last year	-.39	0.11	-3.60	.000	[-0.60 -0.18]
Past 5 years vs last 2 years	-.24	0.12	-2.03	.000	[-0.65 -0.10]
Over 5 years vs last 2 years	-.41	0.12	-3.53	.000	[-0.65 -0.18]

*Note.*SE= Standard error; CI= confidence interval. Table 15 depicts predictive probability of the significant checkup.

Predictive probability for checkup and screening. Figure 19 illustrates the probability of participation in cervical cancer screening by checkup. As discussed above, the predictive probability of screening for women whose last routine checkup was three to five years ago (.59) and women whose last routine checkup was more than five years ago (.41) was less than women whose last year checkup was in the last year (.80) and women whose checkup was in the last two years (0.83). Figure 20 illustrates the differences between 2014 and 2016, showing an overall decline in screening probability from 2014 to 2016 for all groups. Figure 21 illustrates the predictive probability of screening for each year by checkup group. Again, overall 2016 shows a lower predictive probability than 2014.

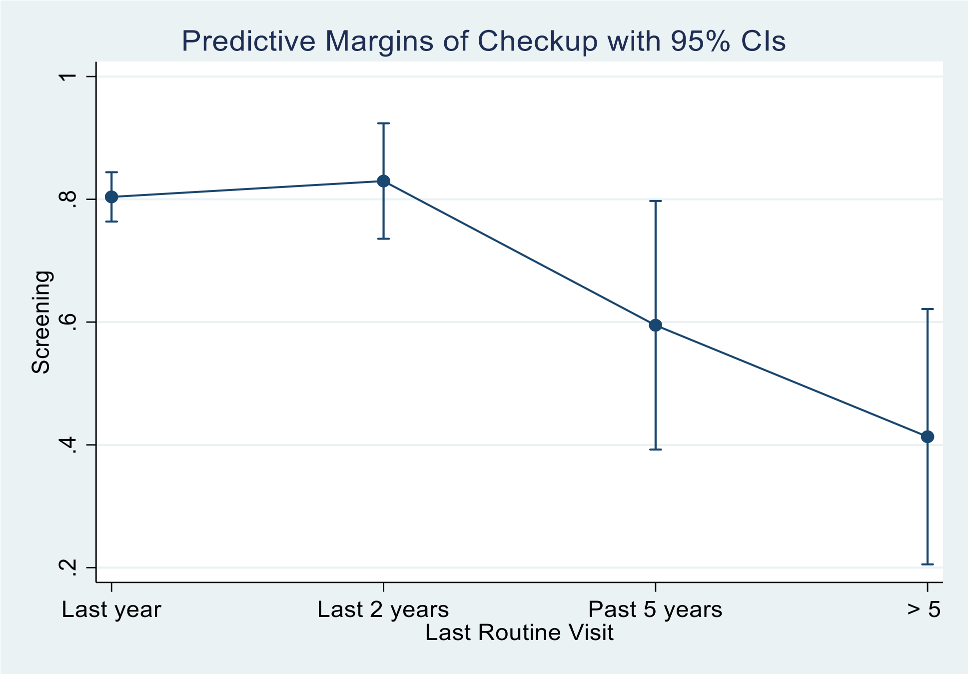

Figure 19. Predictive probability of screening by checkup. *Note*. CI=Confidence interval

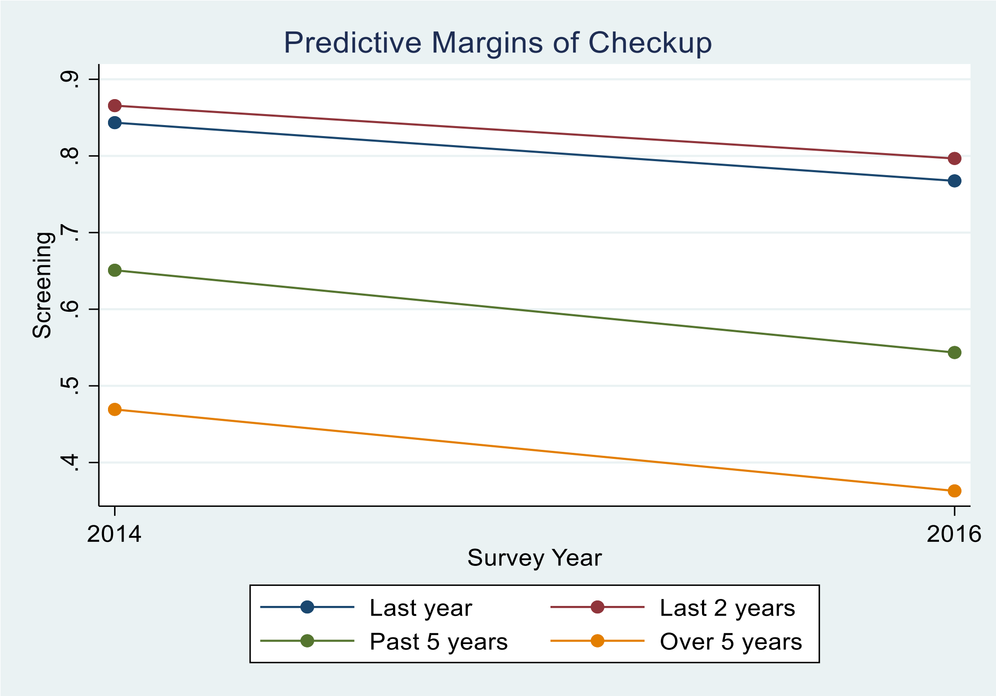

Figure 20. Predictive probability of screening by checkup for 2014 and 2016.

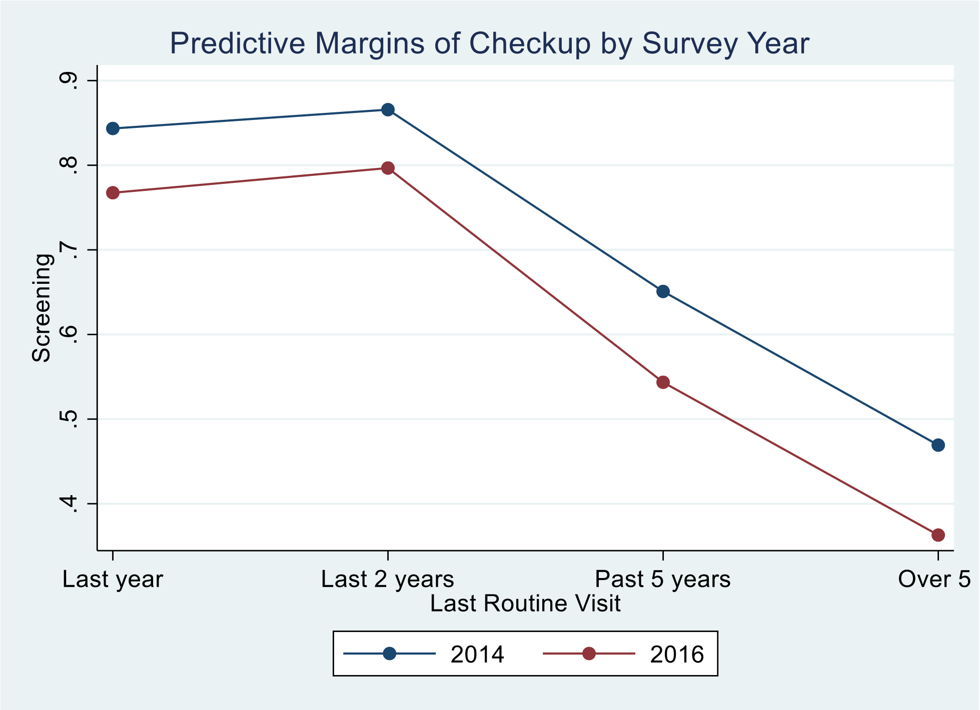

Figure 21. Predictive probability of screening by year for each checkup group.

This policy study examines the relationship of the dichotomous binary dependent variable _rfpap33 as it relates to the independent variable (h_care, age, race, ed, emp_yn, married, doc_care, checkup, visit, survey_yr). Based on logistic regression outputs, I calculated odds ratios to describe the odds of participation in cervical cancer screening (_rfpap33) (Hamilton, 1992). The results of the logistic regression show that the full model, which considers all ten variables together, is statistically significant, Prob>F =.000, F(30,595) = 3.60 , N=625. This implies that the odds for participating in cervical cancer screening relate to the model. Marginal effects including contrast, pairwise comparison and predictive probability graphs further illustrated key relationships of significant independent variables to the dependent variable (_rfpap33) cervical cancer screening. Table 20 provides a summary of the significant independent variables (survey_yr, h_care, age, race, marital status, and checkup) and their significant group contrasts.

Table 20

Summary of Significant Variables and Their Significant Groups

		Variable	Group					
Variable	Group Contrast	Prob>F	Contrast	SE	t	P|t|	CI	
Survey_yr		.0288						
	2016 vs 2014		-.08	0.04	-2.18	.029	[-0.15	-0.01]
H_Care		.0680						
	None vs Private		-.29	0.13	-2.22	0.27	[-0.54	-0.03]
	None ss Medicare		-.30	0.13	-2.28	0.23	[-0.56	-0.04]
	None vs Medicaid		-.34	0.13	-2.65	.008	[-0.18	-0.09]
	None vs Other		-.33	0.15	-2.23	.026	[0.63	-0.04]
Age		.0000						
	25-34 vs 18-24		.26	0.06	4.30	.000	[0.14	0.38]
	45-54 vs 18-24		.12	0.07	1.70	.091	[-0.02	0.26]
	35-44 vs 25-34		-.22	0.05	-4.17	.000	[-0.32	-0.12]
	45-54 vs 25-34		-.14	0.04	-3.22	.001	[-0.23	-0.05]
	55-64 vs 25-34		-.35	0.06	-5.46	.000	[-0.47	-0.22]
	65+ vs 25-34		-.17	0.09	-1.87	.006	[0.36	0.08]
	55-64 s 35-44		-.13	0.07	-1.84	.066	[-0.26	-0.01]
	55-64 vs 45-54		-.22	0.07	-3.13	.002	[-0.33	-0.08]
	65+ vs 55-64		.17	0.10	1.79	.074	[-0.02	0.36]

Race		.0646						
	Hispanic vs white		.18	0.04	4.13	.000	[-0.05	0.14]
	Hispanic vs black		.13	0.06	2.48	.014	[0.03	0.24]
	Other vs Hispanic		-.18	0.08	-2.23	.026	[-0.34	-0.22]
Marital Status		.0224						
	Widowed vs Married		-.21	0.08	-2.56	.011	[-0.36	-0.48]
	Widowed vs Divorced		-.19	0.08	-2.58	.010	[-0.34	-0.46]
	Single vs Widowed		.21	0.08	-2.57	.010	[0.05	0.36]
Checkup		.0006						
	Past 5 years vs Last year		-.21	0.11	-1.95	.052	[-0.42	0.00]
	Over 5 years vs Last year		-.39	0.11	-3.60	.000	[-0.60	-0.18]
	Past 5 years vs Last 2 years		-.24	0.12	-2.03	.000	[-0.65	-0.10]
	Over 5 years vs Last 2 years		-.41	0.12	-3.53	.000	[-0.65	-0.18]

Note. Prob = probability; SE = standard error; CI = confidence interval.

Summary

This policy study examines the outcome of participation in cervical cancer screenings by low-income women during the time of Medicaid expansion in Pennsylvania. The study analyzes secondary data from the 2014 and 2016 BRFSS to answer the following research question: How is participation in cervical cancer screenings by low-income women impacted by changes in health care policy during the period from enactment of the ACA until full Medicaid expansion in Pennsylvania?

The literature presented in Chapter 2 and 3 of this policy analysis supports the hypothesis that the likelihood that low-income women would participate in cervical cancer screening increased in 2016 as compared to 2014 due to the policy changes that increased access to Medicaid for low-income women in 2015. This chapter provided a description of the population and presented inferential analysis used to test the hypothesis. During data analysis, staying mindful of the conceptual framework of the study was crucial to understanding the lived experience of the population addressed. This is discussed in more detail in Chapter 6.

Descriptive statistics. Descriptive statistics provide a foundational understanding of each variable. In this policy study, descriptive statistics provide a snapshot of characteristic respondents. The population sample for this policy study had 901 respondents consisting of 540 from 2014, and 361 from 2016. A general description of the respondents can be derived from the statistical data: the typical respondent is a single, white woman, ages 25-44, a high school graduate who potentially attended college. The typical respondent works, has health insurance (either private insurance or Medicaid), identifies at least one physician as a primary physician, has gone to her physician for a routine checkup in the last year, and potentially visited a physician more than six times in the past year.

Model building. Assessing the model for multicollinearity by regressing each independent variable on the other variables in survey mode revealed collinearity issues with the "age" variable. Further evaluation of multicollinearity by examining different reference groups in standard regression produced equivalent outcomes (Wissmann, Toutenburg, & Shalabh, 2007). Exploring interaction of variables showed an interaction between "emp" and "age." By changing the "emp" categorical variable to a dichotomous variable, "emp_yn", the issues with multicollinearity were resolved.

Model critique. A statistically sound model is necessary for statistical inference from logistic regression (Hamilton, 1992). Several diagnostic statistics such as goodness of fit, classification table, influential observations, and the receiver operating characteristic curve (LROC) demonstrated the appropriateness of the model (Hamilton, 1992; Williams 2015). Goodness-of-fit through both Pearson χ^2 and Hosmer-Lemeshow χ^2 confirmed acceptable fit of the model. The classification table showed an overall correct classification of 79.84%. Finally, the LROC, with an area under the curve of 0.76, indicated adequate discrimination of participation in screening versus no screening.

Logistic regression. This policy study examines the relationship of the dichotomous binary dependent variable (_rfpap33) as it relates to the independent variable (h_care, age, race, ed, emp_yn, married, doc_care, checkup, visit, survey_yr). The results of the logistic regression show that the full model, which considers all ten variables, is statistically significant. Marginal effects including contrast, pairwise comparison, and predictive probability graphs further illustrate key relationships of significant independent variables to the dependent variable _rfpap33 (Hamilton, 1992). Contrast with joint test shows several significant independent variables (survey_yr, h_care, age, race, married, and checkup). Pairwise comparison of the groups within the significant variables displays a few interesting outcomes. The outcome for survey_yr depicts a decline in overall screening by respondents in 2016 as compared to screenings in 2014, thus rejecting the hypothesis that respondents in 2016 were more likely to participate in cervical cancer screening than those in 2014.

The analysis of the age groups showed that the 25-34 age group differed from other age groups. The 25-34 respondents maintained similar rates of screening between 2014 and 2016, whereas the other age groups showed a marked decline from 2014 to 2016. Overall, the 25-34 age group was more likely to participate in screening regardless of insurance status.

Both race and marital status were significant predictors of screening. However, their relevance to this study is questionable due to the small sample percentage of respondents in those groups. Finally, the usual source of care variable, “checkup,” was a significant predictor of screening. Usual source of care, as a factor in screening, is often cited by researchers (Agenor et al., 2014; Friedman et al., 2002, Hewitt et al., 2004; Tangka et al., 2015; Taylor et al., 2006). Therefore, the findings in this study are in line with prior research.

The data in the descriptive and inferential statistics speak to the complexity of factors influencing participation in health behaviors and align with the conceptual framework of this policy analysis. Chapter 3 and 4 described the structure of the BMHS and the interaction of contextual and individual characteristics. The variables predicting the probability of participation in cervical cancer screening fell into both the contextual and individual categories of the BMHS. The discussion in the findings section in Chapter 6 further explores the connection between the statistical analysis and the conceptual framework.

CHAPTER 6

DISCUSSION

Chapter Introduction

The purpose of this policy analysis is to understand the influence of health policy changes on the health behaviors of low-income women, particularly their participation in cervical cancer screenings. Prior research demonstrated that access to health insurance correlates with improved participation in preventive health activities (Friedman et al., 2002; Sabik & Bradley, 2015; Sudano & Baker, 2003). These researchers pointed out that many factors may influence participation, such as usual source of care, belief systems, race, and age (Adams et al., 2003; Bernard et al., 2015; Tangka et al., 2015; Taylor et al., 2006).

This complex relationship of variables influencing health behaviors served to guide the selection of the conceptual framework for this policy analysis. By incorporating the Behavioral Model of Health Services (BMHS) and feminist intersectionality theory, the conceptual framework reflects the complex relationships between contextual and individual factors. This framework encompasses present circumstances on both the macro- and micro-levels, and the long history of marginalization and feminization of poverty. In this chapter, I discuss the findings and limitations of this study, as well as recommendations for future research and policy considerations.

Discussion of Findings

The findings from this policy analysis indicate that several significant variables influence cervical cancer screening. Descriptive statistical analysis provides insight into the characteristics and health behaviors of the women in the population sample. The inferential statistical analysis of the findings indicates that survey year, health insurance coverage, age, race, marital status, and participation in regular routine checkups are all factors in whether a woman has a cervical cancer screening. This section discusses the findings in relation to the characteristics and health behaviors of the sample population as well as to each of the variables. Supportive prior research and the connection between variables and the conceptual framework will also be discussed.

Survey year comparison. The sample populations in 2014 and 2016 are similar in many ways. Most respondents in both years are women ages 25-34, white, single, high school graduates and employed. The two populations are also similar in characteristics related to usual source of care. Most respondents reported having more than one primary physician and having a routine checkup in the last year. However, differences in insurance coverage and in cervical cancer screenings between 2014 and 2016 were reported. These differences warrant further discussion.

Although both samples have low uninsured rates, (2.08% in 2014, and 3.45% in 2016) the type of insurance coverage differs between the two years. In 2014, 39% of the respondents had private insurance and 33% had Medicaid. In 2016, 32% of the respondents had private insurance and 41% had Medicaid. An increase in the percentage of Medicaid coverage after Medicaid expansion is an expected outcome (Kaiser, 2013b; Sabik & Bradley, 2015). However, the expectation, based on prior research, was that the uptick in Medicaid insurance coverage would correlate with a decline in the uninsured rate (Finkelstein et al., 2012; Kaiser, 2013b; Sabik & Bradley, 2015; Simon et al., 2016). The findings from this study show a higher percentage of Medicaid, a lower percentage of private insurance, and a slightly higher percentage of uninsured women among respondents in 2016 as compared to 2014 respondents. These findings suggest that factors other than health insurance may have a bearing on screening decisions. Providing additional insight to these findings, the conceptual framework of the BHMS suggests a fluid interaction between individual characteristics, such as age, race, and marital status, and contextual characteristics, such as health policy, (Andersen et al., 2017). As discussed in Chapter 3, Andersen's 6th edition of the BMHS added feedback loops from health behaviors and all other components of the model to demonstrate the ongoing fluid interaction of all factors influencing health behaviors (Andersen et al., 2017). The BMHS feedback loops provide a potential explanation for the influence of factors other than health policy changes on health behaviors (Andersen, et al., 2017). A recommendation for future studies is to examine the trends of insurance coverage mix between private insurance and Medicaid to gain greater insight into the results of 2016.

Like insurance status, the percentage of women participating in cervical cancer screening differs from 2014 to 2016. The goal established by Healthy People 2020 for cervical cancer screening is for 93% of women ages 21-65 to receive a cervical cancer screen every three years (Healthy People 2020, 2017b). Research shows that meeting this goal is still a challenge. Tangka et al. (2105) found that only 83% of women participate in regular screenings and that this rate dropped to 64% for uninsured women. Taylor et al. (2006) found that 77% of uninsured women participate in screening, as compared to 94% of insured women. Findings from this study suggest that low-income women in Pennsylvania are far from reaching the goals established by Healthy People 2020. Of the 2014 respondents, 77% reported having a cervical cancer screening, aligning with rates of uninsured found by Taylor et al. (2015). However, this percentage dropped in 2016, with only 68% reporting participation in screening, thus aligning with the rates for uninsured found by Tangka et al. in 2015.

A possible explanation for these findings is the timing of the data collection period during the rollout of Medicaid expansion, and the resulting potential for insurance coverage uncertainty. Chapter 1 covered the timing of the change in Pennsylvania from the Healthy PA

Plan to Medicaid expansion: In 2015, beneficiaries started the year enrolled in Health PA Plan and then transitioned to the expanded Medicaid plan in September of the same year (Kaiser, 2015). Studies show that inconsistency and gaps in coverage decrease participation in preventive health behaviors (Friedman et al., 2002; Sudano & Baker 2003).

The possibility that changes in insurance over the year 2015 created an environment in which individuals were unsure of coverage and therefore skipped preventive screenings. Analyzing this finding through the lens of the conceptual framework provides greater insight into the lived experiences of the women in this study (Andersen et al., 2017). The BMHS model points to how an individual's perception of the need for health care can influence health behaviors. Andersen referred to this as the individual need characteristic (Andersen et al., 2017). During times of uncertainty in insurance coverage, healthy individuals may perceive a low need for preventive screenings. Additionally, the data in this policy analysis allows for consideration of other contextual and societal influences on health behaviors. For example, factors such as changes in location of healthcare facilities and acceptances of insurance plans by health care providers are potential explanations. Further research from a qualitative perspective using the BMHS framework and feminist intersectionality may also provide insight into these potential contributing factors.

Health insurance. As stated in Chapter 5, the variable h_care is a significant ($p<.10$) predictor for cervical cancer screening. Further analysis of the health insurance groups determined that uninsured women were less likely to participate in cervical cancer screenings than insured women. The literature supports these findings. As stated above, both Tangka et al. (2015) and Taylor et al. (2006) found improved participation in screenings for insured women as compared to uninsured women. The findings of this policy analysis confirm the role that health insurance plays in participation in preventive health screens. However, as stated above, disparities in screening participation exist for all women in this study.

Feminist intersectionality theory provides an understanding of the relationship between these disparities and the complex lived experience of women (Bowleg, 2012; Hankivsky et al., 2010). For example, feminist intersectionality informs the study by providing a framework that allows for simultaneous intersecting factors (such as age, physical environment, and social norms) to all influence the situation. This study demonstrated that age, marital status, race, and usual source of care variables were significant. Feminist intersectionality suggests that these variables do not influence women independently or in sequence, but rather are intersecting in a non-orderly fashion creating the complex environment in which health behaviors exist (Bowleg, 2012). In this study, uninsured women were less likely to participate in screenings than insured women. However, as a group, their overall percentage of screening participation was lower than uninsured women in prior studies (Tangka et al., 2015; Taylor et al., 2006). Feminist intersectionality theory and the BMHS both serve to remind us that the disparities faced by marginalized populations are not adequately addressed by any singular solution, such a providing health insurance coverage.

Age. The results in Chapter 5 show that age is a significant ($p<.05$) predictor of cervical cancer screening. Examination of the age groups shows that women ages 25-34 were more likely to participate in cervical cancer screenings than others, and that women ages 55-64 were least likely to participate. Prior research points to age as a factor in cervical cancer screening. For example, Hewitt et al. (2004) found that younger low-income women without a usual source of care were less likely to participate in screening. Bernard et al. (2015) found that women over the age of 50 were less likely to participate in screening.

Age is an interesting factor in this policy analysis in that the 25-34 age group showed a different pattern of screening probability from 2014 to 2016 than the other age groups. For all other age groups, there was a decline in the probability of screening in the two-year time points. However, in the 25-34 age group, the probability of screening remained relatively stable: .95 in 2014 and .92 in 2016. Upon further examination of screening relative to age and health insurance status, all uninsured age groups were significantly less likely to participate in screenings, except for the 25-34 group, which had a .76 probability of screening. These findings suggest that insurance status is less of a factor for screening in the 25-34 age group than in other groups and further, it suggests that other influences exist for the 25-34 age group as to health behaviors.

The age-related results in this policy analysis highlight the need to have a deeper understanding of women’s lived experiences. The differences in screening by uninsured women of differing age groups suggest that the experiences of the groups may factor into the health behaviors of the women. Here again, feminist intersectionality and the BMHS informs this study of the complex environment surrounding health behaviors. For example, Roland et al. (2013), found a higher frequency of screenings among women seeking birth control than clinical guidelines recommended. The possibility exists that women in the 25-34 age group are seeking birth control at a more frequent rate than women in the 55-64 age group. Therefore, the intersection of age and sexual activity can influence outcomes.

Additionally, Bernard et al. (2015) found that women over the age of 50 were more likely to forego cervical cancer screening regardless of having access to free screening services. In this example, such factors as understanding of the need for cervical cancer screening after menopause, the need for screening regardless of sexual activity, and influence of other life stressors such as caring for aging parents and parenting may all simultaneously intersect and influence health behaviors. If policymakers and healthcare providers examine the results of the study through a singular lens of health insurance, they may incorrectly determine that health insurance coverage plays a more significant role in the 55-64 age group than in the 24-35 group, when in fact it is a more complex environment inclusive of sexual activity, age, insurance, clinical decision-making, and other life stressors. Future research applying feminist intersectionality theory and the BMHS to the examination of health behaviors by age groups could provide helpful insight for policy makers and healthcare providers.

Race/ethnicity. The results show that race is a significant (p<.10) predictor of participation in cervical cancer screening. Another study that found race as a contributing factor was conducted by Agenor et al. (2014). This team examined the complex intersection of race and other structures in relation to participation in screening, and found a complex relationship between the individual and structures influencing health behaviors. Additionally, Bernard et al. (2015) identified race as a significant factor among women who never, or rarely, participated in screening. This policy study found that Hispanic women were more likely to participate in screenings. However, as stated in Chapter 5, the percentage for Hispanic women in this sample was smaller compared to other groups, and the significance level was p<.10. This leads to caution in stating the role played by race/ethnicity for this population in this sample. The role of race in health behaviors needs further research.

Van Herk et al. (2010), found that multiple identities including race, gender and socioeconomic status combine to influence a positive or negative health care experience. This study demonstrates that several variables work together to create health behavior outcomes. As suggested by Agenor et al. (2015), further evaluation of intersecting complexities of race of other micro- and macro-level structures on health behaviors would add to the literature available to policy-makers and health care providers.

Marital status. The results show that marital status is a significant (p<.05) predictor of cervical cancer screening. Prior research suggests that marital status is a contributing factor in accessing health insurance, thus influencing health behaviors (McMorrow et al., 2015). An interesting finding in this study is that, of all the marital status groups, widowed women were least likely to participate in cervical cancer screenings. The conceptual framework provides insight into this finding. There is greater potential for older women (ages 55-64) to experience the loss of a spouse, thereby potentially losing spousal health insurance -- a detriment for widowed women. In fact, the age findings showed that women ages 55-64 were least likely to participate in screenings.

By bringing together the multiple intersecting identities such as marital status (an individual enabling factor), and age (an individual predisposing factor), with social factors such as health insurance (a contextual enabling factor), this example demonstrates how the conceptual model combining feminist intersectionality with BMHS applies to the health behaviors of widowed women (Andersen et al., 2017). Future qualitative inquiry applying the BMHS and feminist intersectionality theory to the lived experiences of low-income, widowed women could provide valuable insights into the barriers and motivators of positive health behaviors.

Checkup. The variable “checkup” is a significant (p<.05) predictor of cervical cancer screening. Research supports the role of usual source of care factors in preventive health behaviors. Selvin and Brett (2003) found the largest barrier to breast and cervical cancer screenings was lack of usual source of care. Likewise, Hewitt et al. (2004) found that younger low-income women without access to a usual source of care were the highest risk group for not receiving cervical cancer screening. This policy study examines three usual source of care variables (doc_care, checkup, and visit) as part of the statistical analysis. Of the three, only checkup, which relates to the length of time since the respondent’s last routine checkup, is significant. Future research focused on understanding the connection between cervical cancer screening and usual source of care, and the connection between women’s health behaviors and having a primary physician and frequency of visits, would provide greater insight into this study’s findings regarding usual source of care.

Overall, the results of this policy analysis reject the hypothesis that it is likely that low-income women’s participation in cervical cancers screening would increase in 2016 as compared to 2014 due to health policy changes in 2015. The findings of this study point to a complex interaction of individual and contextual characteristics influencing women’s health behaviors. The remaining sections of this chapter discuss the study’s limitations and recommendations for future research and policy.

Limitations

Several limitations warrant discussion, including challenges due to changes in policy and clinical guidelines as well as methods of determining sample population and participation. This section reviews these challenges and procedures, compares them to prior research, and proposes options for future research.

Policy and Clinical Guidelines

Since enactment of the ACA, the healthcare environment has been one of turmoil and uncertainty for many. Policy in the state of Pennsylvania went through its own unique evolution, created by the conflict surrounding implementation of Medicaid (Kaiser, 2016). The Pennsylvania experience provided the rationale for this policy analysis; however, it simultaneously created limitations for the study. Compounding these limitations were those created by newly adopted clinical guidelines for cervical cancer screenings. The following section discusses these limitations.

Policy timing. The time-line of this study coincides with a series of health policy changes in Pennsylvania. Health policy did not support expansion of Medicaid in 2014, and therefore this year serves as an appropriate baseline to evaluate the changes created by Medicaid expansion (Kaiser, 2016). However, the year 2016 presented new challenges in examining full Medicaid expansion. In 2016, Pennsylvania had access to Medicaid expanded benefits; however 2015 was a time of transition from the Healthy PA Plan to full expansion (Kaiser, 2016). This scenario created the potential for confusion and misunderstanding of the coverage criteria for the population in this study.

To complicate matters, the BRFSS collects data throughout the year (Centers for Disease Control and Prevention, 2013b). As a result, the respondents in the first part of 2016 had a shorter time to leverage their benefits for screening than those surveyed during the latter part of 2016. Future research will provide clearer insight into the influence of full Medicaid expansion. Sabik et al. (2015), who examined Medicaid coverage in Massachusetts, found differences in participation between early and later policy adoption years. Future analysis of participation in 2018 and 2020 can provide insight into Medicaid's impact in later adoption years.

Clinical guidelines. Research shows that health practitioners do not adopt new clinical guidelines immediately (Friedman et. al., 2002; Kepka et al., 2014; Roland et al., 2013; Solomon et al., 2007)). Health providers adopt guidelines over time, and clinician preferences and bias often override new guidelines (Roland et al., 2013; Solomon et al., 2007). In 2012, when the USPSTF implemented clinical guidelines for cervical cancer screening (U.S. Preventive

Taskforce, 2012), these guidelines altered earlier recommendations on the frequency of screenings, the age of screening initiation, and the exclusion of women with hysterectomies. Given the new recommendations, women may have been over-screened due to clinical bias or insurance coverage.

Research shows that women who have private insurance tend to receive screenings more frequently than recommended. Kepka et al. (2014) found that while women with private insurance were more likely to receive additional screenings beyond the recommended guidelines, women with Medicaid services were more likely to receive fewer screenings than recommended. Roland et al. (2013) found that women who were sexually active at a younger age were more likely to have more frequent screenings than the recommended three-year timeframe, and women who requested birth control were also more likely to receive unnecessary screens. Given this empirical support, clinical bias has the potential to influence decision-making on screening frequency, and this must therefore be considered a limitation of this study.

Since I chose to adhere to clinical guidelines for this policy analysis, the three year interval chosen for this study, resulted in a conflict with the initiation of Medicaid coverage. The data collected in 2016 reflected participation for the prior three years. During those three years, women had a greater potential to experience insurance instability due to the changing health policy environment. Research shows that uncertainty in health insurance coverage leads to reduction in preventive health behaviors (Friedman et al., 2002; Sudano & Baker, 2003).

Although prior research examined annual screenings, I chose to adhere to the frequency recommended in the screening guidelines. Unlike Sabik and Bradley (2015), I collected all the data following the date of full implementation. In addition, the BRFSS updated the variables in

2014 to include the calculated variable (_rfpap33), which conforms to the clinical guidelines (Centers for Disease Control and Prevention, 2015).

Changing health policy and changing clinical guidelines create the potential for confusion on the part of health providers, especially when reimbursement continues for outdated guidelines. This allows for personal bias to play a larger role in clinical decision-making. In their study, Sabik and Bradley (2015) chose to examine annual cervical cancer screening versus screenings every three years during a time in which the guidelines were changing. They found that insurers continued to reimburse on an annual basis, which may have influenced health providers to screen more frequently (Sabik & Bradley, 2015). Using the conceptual framework chosen for this policy analysis, provides an understanding of the complexity of structural and individual characteristics and how these interact to create such a scenario.

Methodology

Poverty sample methodology. Medicaid expansion provided insurance coverage for individuals below 138% FPL (Kaiser, 2009; Kaiser, 2013b). Since my interest is in understanding health policy specifically related to Medicaid expansion and preventive health behaviors, I chose to limit my population sample to women directly impacted by the policy, i.e., those whose income rose to a percentage of federal poverty level (Kaiser, 2009). As a result this study faced limitations due to BRFSS survey methodology that provides income data in categorical increments rather than in specific household income for each respondent (Centers for Disease Control and Prevention, 2013b).

To obtain this data, it was necessary to calculate household income for each respondent and compare the calculated household income to the federal poverty level in order to determine whether to include it in the population sample. Chapter 4 explained the methodology for the calculation of the poverty variable for analysis. This process creates a potential for over- and under-estimation of actual household income, creating a potential for error in inclusion / exclusion of respondents. Research on state-level data collection supports the methodology used in my policy analysis. (Hawaii Data Warehouse, n.d; Sabik & Bradley, 2015).

Sample size. When I narrowed the population sample to Pennsylvania women with incomes under 138% FPL, the resulting sample size for the policy analysis totaled 1,867 individuals, of which 1,189 were from 2014, and 678 were from 2016. However, due to missing data for certain variables in the model, the sample size reduced to n= 625 for logistic regression. The dependent variable (_rfpap33) accounted for most of the reduction, resulting in paring down the sample to n= 901. This is due to several factors including: women who were outside the age ranges indicated in the clinical guidelines; women who reported having had a hysterectomy; and women who refused to answer or did not recall (Centers for Disease Control and Prevention, 2015). The independent variables further reduced the sample population to n= 625, due to individuals who refused or were unable to respond to the questions (Center for Disease Control and Prevention, 2015). Although the resulting population sample was significantly smaller than the original sample, it was sufficiently large to conduct an evaluation (Hamilton, 1992; Ritchey, 2008).

Self-reporting. The literature suggests that, in self-reported surveys like the BRFSS, women over-report participation in cervical cancer screenings (Gordon, Hiatt, & Lampert, 1993; Johnson & Archer, 1995). As stated earlier in this chapter, Sabik and Bradley (2015) cited several reasons for over-reporting, including challenges with recall of health behaviors over an extended time, insurance reimbursements for annual screenings, the ease of assessing annual changes versus difficulties resulting from the extended time lapse between medical visits in the post-reform period, and the decision to use annual screening reports versus reports every three years.

I considered these factors in determining whether to use the clinical guidelines that recommend screenings every three years, rather than using data collected on an annual basis. I used the clinical guidelines as my parameters because, unlike Sabik and Bradley (2015), the data for this study was collected after full implementation of the guidelines. Also, beginning in 2014, the BRFSS provided a calculated variable, (_rfpapp33), that aligns with the new clinical guidelines. Although the limitations of recall and insurance reimbursement continued to influence results, it is more important to collect data based on established guidelines. As stated earlier, future research using data which aligns with clinical guidelines will provide more insight into screenings based on the guidelines.

Secondary data. Although there are several benefits to using secondary data for this policy study, limitations do exist. Secondary data has sampling constraints as well as limitations of question specificity due to standardization of the survey design (McCaston, 2005; Young & Ryu, 2000). The inability to conduct follow-up calls to acquire data regarding the reasons associated with screening decisions also constrains results (McCaston, 2005). In addition, national surveys rely on many individuals to collect data. These individuals often have limited training and supervision. While specific protocols for data collection exist, the potential for interviewer error is higher in these national studies than in studies relying on primary data collection by a small group of researchers (Centers for Disease Control and Prevention, 2015; McCaston, 20015).

BRFSS data. The BRFSS is a repeated cross-sectional survey, a sampling method that limits the ability to follow individual respondents over time (Centers for Disease Control and

Prevention, 2013b). As a result, the focus of this policy analysis is not on changes in individual health behaviors; rather it is a comparison of similar groups at two points in time. Many of the variables in the BRFSS are categorical rather than continuous and therefore do not allow for exact measurement of information (Centers for Disease Control and Prevention, 2013b). As addressed above, income is a categorical variable in the BRFSS which could potentially influence the inclusion and exclusion criteria for income levels.

Despite these limitations, this policy analysis provides important early information regarding the effects of Pennsylvania's Medicaid expansion on the health behaviors of low-income women, specifically regarding cervical cancer screenings.

Recommendations

The passage of the Affordable Care Act (ACA) in 2010 transformed the health care system. Since that time, discourse surrounding the implementation and continuation of ACA programs has grown. Medicaid expansion, a core tenet of the ACA, remains at the center of the discourse (Kaiser, 2013b). The literature demonstrates the positive impact of Medicaid expansion (Sabik & Bradley, 2015). However, continued research is necessary to understand the long-term effects of Medicaid expansion, as well as to understand the differences experienced by individual states as to health behaviors and outcomes, depending upon their level of participation in Medicaid. This section provides recommendations for future research and considerations for policymakers moving forward.

Future Research

Early and late policy adoption. The results of this policy analysis are in line with earlier research that found positive connections between availability of insurance coverage and participation in preventive health services (Ahluwalia et al., 2007; Sabik & Bradley, 2015; Taylor et al., 2006). Prior research also supports the need to examine the effects of early adoption of policy as compared to later adoption (Sabik & Bradley, 2015; Simon et al., 2016). Sabik and Bradley (2015) found that implementation of new policies takes place over time, and they attribute this to learning curves among both patients and practitioners, as well as potential waiting periods before seeking care. Future research should examine whether these delays diminish or continue to be evident over time.

This policy analysis had limitations in both data collection years. In 2014, the clinical guidelines had only been in effect for two years. The BRFSS data may have shown residual over-screening by providers who delayed implementation of the new guidelines (Roland et al., 2013; Solomon et al., 2007). Likewise, in 2016 data collection took place during a period of newly implemented policy, with Medicaid expansion occurring less than one year prior, in September of 2015 (Kaiser, 2013b). Research that includes BRFSS data from 2018 will provide the opportunity to examine three full years of Medicaid expansion combined with well-established clinical guidelines. Future research should also focus on the effects of expansion over a prolonged period. Comparing early adoption years to later adoption years will give insight into the long-term impact of policy.

State-to-state comparison. Comparing the effects of full Medicaid expansion to waiver programs and to states not expanding Medicaid, provides another research opportunity. A valuable future research recommendation is to explore how Pennsylvania’s experience with Medicaid compares to the experience of other states. Sabik and Bradley (2015) compared the changes in use of preventive health services by women in Massachusetts after full Medicaid expansion to changes in other New England states that did not expand Medicaid. In doing so, they gained insight into the effects of statewide reforms as compared to effects of national initiatives.

For example, all states have access to NBCCEDP (Ryerson & Bernard, 2002). Sabik and Bradley (2015) demonstrated that after improving insurance access for a given population in Massachusetts, participation in a state-wide screening program increased. However, during the same period, participation in the national NBCCEDP program, which was available in Massachusetts and comparison states, showed no increase (Sabik & Bradley, 2015).

As policy evolves and states continue to adopt different approaches to Medicaid benefits, the need to understand the disparities between states continues to grow. For example, as recently as January 2018, the Centers for Medicare and Medicaid approved a waiver program in Kentucky which stipulated work requirements for Medicaid recipients (Abramson, 2018; Kaiser, 2018). These state-to-state differences drive the need for continued evaluation of health outcomes.

Within-state examination. A benefit to using BRFSS data for analysis of health policy is the ability to narrow information to state and local levels (Center for Disease Control and Prevention, 2013b). Although this policy analysis focused on state-level changes, information regarding regional and local differences gives policymakers and legislators the ability to understand differences within a state, including differences between rural and urban sectors. For example, Coughlin and King (2010) examined preventive health screening in various MSAs to evaluate the association between commuting distances and testing facilities.

In future research, applying both the BMHS model and the feminist intersectionality framework at a local level, would result in a deeper understanding of the interaction of contextual and individual factors to produce certain health behaviors. For example, Brown et al. (2004) examined the impact of community factors by MSA on access to ambulatory care for low income adults and found a positive relationship between work location and location of healthcare providers. Furthermore, Agenor et al. (2014) applied feminist intersectionality theory to understanding the complexity of preventive health services and found that contextual components such as the location of community health clinics had a significant impact on health behaviors. Future research focused on intra-state disparities would provide insights for states that are working to allocate resources appropriately.

Income comparison. This policy analysis limited the inquiry to women whose income fell below 138% FPL to focus on the changes occurring within a specific cohort of the population. However, there is significant value to understanding the differences between income groups during a time of policy implementation. For example, in their research, Sabik and Bradley (2015) examined participation in cervical cancer screenings by women at varying income ranges above and below the federal poverty level. In doing so, they found increases in participation across all income levels during a period of policy change, indicating that other factors may influence health behaviors (Sabik & Bradley, 2015). These findings are in line with the conceptual framework of this policy analysis which found that multiple contextual and individual factors simultaneously influenced the outcome (Andersen et al., 2017; Bowleg, 2012). Future research examining changes in participation by women above 138% FPL would shed light on the simultaneously interacting factors that can contribute to various health behaviors.

Qualitative inquiry. The conceptual framework of this policy analysis highlights the complex intersecting relationships of contextual and individual characteristics with underlying historical forces of marginalization and oppression (Agenor et al., 2014; Bowleg, 2012; Hankivsky et al., 2009). Quantitative inquiry can elucidate health behavior outcomes but does not provide insight into the lived experience. Combining quantitative and qualitative inquiry allows the researcher to document the richness and complexity of the lives of the population

(Creswell, 2014). A qualitative inquiry by Van Herk et al. (2010) highlighted this complexity in relation to access to preventive health services. They described the interaction of women and health behaviors as fluid in nature and simultaneously intersecting at many levels (Van Herk et al., 2010).

The results of this quantitative policy study point to a complex environment of multiple intersecting identities and social factors contributing to the health behaviors of women. For example, this study indicates that multiple variables such as health insurance, age, race, marital status, and usual source of care are related to cervical cancer screening. However, while the quantitative approach demonstrates relationships between these factors and the health behaviors, it does not provide an understanding of the magnitude nor the intersection of these behaviors in the lives of the women. In particular, a qualitative inquiry into the lived experiences of women in different age groups would provide a deeper understanding of health behavior decisions as well as potential strategies for policymakers and health care providers to encourage participation in screening by older women or guideline compliance in younger women. Likewise, understanding the connection between women who lose a spouse and their perceptions and expectations regarding their own health care would provide valuable insight to policymakers and healthcare providers regarding the types of support and education needed following the loss of a spouse. Qualitative analysis allows for a level of insight that would bring a greater depth of understanding to the data provided by this policy's quantitative inquiry.

As policy and programs evolve, it is important to understand how women's health behaviors weave into the fabric of their lives. Those served by Medicaid expansion live in a complex environment where knowledge and understanding of the benefits and the potential impacts of preventive health services are not always well-understood (Kaiser, 2017c).

Participatory research focused on understanding the influence of new policies and programs on the lives of these women would provide insights into these issues (Olsson & Lau, 2015). For example, participatory research involving community collaboration in library programs to increase awareness and education based on local needs resulted in positive changes in health behaviors (Olsson & Lau, 2015; Rapkin et al., 2017).

Insurer and practitioner research. As a healthcare practitioner, I have observed the benefits of having the healthcare community work with others to improve access to preventive health services. As an example, incentive programs by health insurance companies aimed at rewarding practitioners for positive health behaviors showed positive outcomes (Hillman, 1999). As early as 1999, Hillman et al. found that incentive programs aimed at healthcare providers improved participation in preventive health activities by Medicaid recipients. Future collaborative research examining motivators such as incentives for healthcare practitioners and insurance beneficiaries can provide important knowledge for determination of payment structures.

Policy Considerations

This policy analysis and prior research demonstrate how the complex lives of low-income women are influenced by historical marginalization and the feminization of poverty to create barriers to positive health behaviors. With policies such as Medicaid expansion, the likelihood of obtaining positive outcomes increases due to diminishing barriers to access (Kaiser, 2014a; Sabik & Bradley, 2015). Findings from this policy analysis demonstrate the increased probability that low-income women will participate in preventive screening when they have access to insurance. Other researchers found that participation in screening increases as compared to participation in free-access, government-supported programs such as NBCCEDP (Hewitt et al., 2004; Selvin & Brett, 2003). Still other studies suggest that inconsistency in insurance coverage leads to a reduced likelihood that women will participate in recommended preventive services (Sudano & Baker, 2003).

Based on the findings of this policy analysis and others, providing low-income women with consistent insurance coverage for preventive health services helps to lessen the barriers to participation. The feminist intersectionality paradigm and BMHS suggest that participation in positive health behaviors is not a linear activity but rather a complex interaction of contextual and individual characteristics (Agenor, et al., 2014; Andersen et al., 2017; Bowleg, 2012; Hankivsky et al., 2009). To improve the overall health behaviors of a population, the situation needs to be addressed using a simultaneous, multi-level approach. Although providing consistent health insurance coverage is a positive step forward, policymakers need to stay mindful of the complexity of the environment when developing future health policy.

Research indicates that other factors, such as employment, access to usual source of care, and belief system, have an influence on health behaviors (Friedman et al., 2002; Miller et al., 2012; Tangka et al., 2015). Changes in policy which impact other areas of life for low-income women (such as housing, employment, child care, and local access to healthcare facilities) all have the potential to create barriers to positive health behavior. For example, policies and funding which support programs such as Planned Parenthood help to provide access to preventive services in local communities. When changes occur which impact these programs, preventive health services are also at risk (Kaiser, 2017d).

To illustrate, the 2015 defunding of Planned Parenthood clinics in Texas impacted access to preventive health services for low-income women, according to Ura, Daniels, and Busch (2015). In 2014, Planned Parenthood provided 1,854 cervical cancer screens. The loss of the

Planned Parenthood clinic created barriers to future screenings for women who were unable to access clinics outside their community, and for those who had to use clinics that required payment for services. Policymakers need to stay mindful of these potential impacts as they reallocate or eliminate funding programs.

State and federal policymakers should reflect on the interaction of federal and state policies and how they serve to limit or enhance the lives of low-income women. The Medicaid program began as a complicated blending of state and federal policies and regulations (Cohen, 1985). The goal of the ACA is to reduce state disparities by standardizing the program throughout the country (Kaiser, 2013a). However, the inability to fully enact Medicaid expansion leaves low-income women facing state disparities (Kaiser, 2013b). This not only affects women living in states without access or with limited access, but also impacts women in other states by limiting opportunity for mobility across state borders, due to the need to remain in states that provide coverage. This example demonstrates the types of barriers facing low-income women that may not exist for women who can afford private health insurance.

Since its inception, Medicaid experienced controversy at the federal and state levels. This policy analysis and prior research support Medicaid’s potential to have a positive impact on the health behaviors of low-income women (Finklestein et al., 2012; Sabik & Bradley, 2015; Simon et al.,2016). However, more research is necessary to fully understand the social structures and individual factors that work together to determine health behaviors, such as participation in preventive health services. This section outlined recommendations for future research and considerations for policy makers. Adding to the body of knowledge through both quantitative and qualitative inquiry provides a stronger foundation for insightful policies and evidence-based regulation.

Conclusion

The purpose of this policy analysis is to understand how changes in health insurance coverage impacted the lives of low-income women since the initiation of the ACA through full Medicaid expansion in Pennsylvania. In particular, the focus of this study is to understand participation in cervical cancer screening by low-income women. This policy study describes the historical and current disparities in cervical cancer screening policies and provides a historical and current overview of the Medicaid program. The study also discusses how the conceptual framework of BMHS and feminist intersectionality theory informs this analysis. Finally, the study discusses the use of survey data from the BRFSS to explore participation in cervical cancer screenings by low-income women before and after Medicaid expansion. The closing section summarizes the four key foundations that ground this policy analysis. These are the Jefferson-Hamilton debate, the feminization of poverty, the behavioral model of health service use, and the feminist intersectionality paradigm.

Jefferson-Hamilton Debate

Chapter 2 discussed the historical foundations of the conflict between those who believe in minimal federal governmental oversight and state liberty, and those who believe in the role of the federal government as a provider of a social safety net. This debate traces back to Jefferson and Hamilton, with Jefferson believing in minimal government oversight, and Hamilton believing in providing a social safety net (Olakanmi, 2005). This debate still fuels the current discourse surrounding social programs such as Medicaid (Olakanmi, 2005). This policy study reflects the Jefferson- Hamilton debate through the discourse over Medicaid expansion.

The journey of Medicaid expansion as a social safety net for all low-income individuals started with the enactment of the Affordable Care Act (Kaiser, 2013a). However, a Supreme Court decision in 2012 ruled that Medicaid expansion was unconstitutional and thus ended the vision of Medicaid as a national, income-based program (Kaiser, 2013a). This Supreme Court ruling highlighted the Jefferson-Hamilton battle over Medicaid expansion, and the battle continued when the legislation was handed back to the individual states. Pennsylvania's governing body originally adhered to the Jeffersonian idea, refusing to expand the federal program, and then transitioned to a Hamiltonian perspective with expansion of the social safety net for its citizens.

However, this battle is far from over. As new leadership takes office on the federal and state levels, low-income citizens in expansion states could once again find themselves without the social safety net of Medicaid coverage. Policy studies such as this one are important additions to the body of evidence regarding healthcare coverage for low-income citizens. By having access to studies which examine preventive health services and their relationship to Medicaid coverage, policymakers can make informed decisions regarding future programs.

Feminization of Poverty

Equally ingrained in the United States' historical fabric as the Jefferson-Hamilton debate is the feminization of poverty. As early as the Civil War, policies and beliefs in the United States feminized poverty (Abramovitz, 1996; Engel, 2006). From Civil War times through the enactment of welfare policies, the government and social safety net programs defined the deserving poor as women and children who were no longer under the protection of a man. Whether this was due to death or abandonment, these women became the face of the poor who deserved outreach from social and governmental programs. Left out of this group were those able-bodied men and single women believed to be poor due to their own misguided ways (Abramovitz, 1996; Engel, 2006).

Medicaid enactment in 1965 followed in the footsteps of preceding policies and programs by establishing mandatory minimum state requirements based on the concept of the deserving poor, defined as children and women with children (Engel, 2006; Katz-Olson, 2010). These early requirements fully ingrained the feminization of poverty into the medical-social safety nets of our country, and have helped to create further inequalities for both poor men and women (Abramovitz, 1996; Katz-Olson, 2010). The ACA provided an opportunity to reverse the feminization of poverty by basing access to the social safety net solely on income. However, the 2012 Supreme Court ruling gave states the right to prevail over federal programs, and the feminization of poverty remained intact in those states that did not enact income-based expansion (Kaiser, 2013b).

Feminization of poverty is an important concept for this policy analysis to the extent that, as Pennsylvania moved toward Medicaid expansion with income-based benefits, all low-income women regardless of situation, became eligible for coverage (Kaiser, 2013b). As stated in the literature review, young single women and women over 50 are often at greatest risk for not receiving cervical cancer screenings (Bernard et al., 2015; Hewitt, et al., 2004; Robbins et al., 2015). These are the same women who were not covered under prior Medicaid coverage criteria (Kaiser, 2103b). The Medicaid expansion program reduced these inequalities, and in doing so, made gains toward decreasing the feminization of poverty in Pennsylvania.

Behavioral Model of Health Services Use

First established in the 1960s, the BMHS evolved over time to be the most widely cited model of health service utilization (Ricketts & Goldsmith, 2005). This model defines the factors influencing health behaviors while recognizing the complex interaction of contextual and individual characteristics in determining outcomes. The BMHS evolved over time to encompass an understanding that outcomes are influenced by inputs through various feedback mechanisms (Andersen et al., 2017). The model provides a defining framework for the variables in this policy analysis, and allows the variables to be organized into well-established categories for comparison to other research and for future evaluation.

Although linear in appearance, the BMHS embeds a series of feedback loops into the model, giving it depth and fluidity (Andersen & Davidson, 2007). It encompasses the complexities of the relationship between health behaviors and health outcomes, and contextual and individual characteristics, to enhance our understanding of the impact of simultaneous, multi-variate interactions on health behaviors (Andersen & Davidson, 2007). Although the BMHS provides a foundation for multivariate analysis for this policy study, the historical oppression and marginalization of women and the feminization of poverty in the United States must also be addressed. To accomplish this, in this policy analysis the BMHS model is embedded into feminist intersectionality theory, thus creating the conceptual framework for this policy study.

Feminist Intersectionality Theory

According to Collins (1990) and Hankivsky et al. (2010), the feminist intersectionality framework addresses issues of power, subordination, and social determinants of lived experience. It is through this lens that this policy analysis examines the role of Medicaid expansion in the lives of Pennsylvania women. The Jefferson-Hamilton discourse and the feminization of poverty laid the foundation for the historical marginalization and oppression of women today. Feminist intersectionality builds upon this foundation of historical marginalization and oppression (Collins, 1990), and provides a foundation for understanding the interaction of macro-level structures such as poverty, racism, and sexism, and micro-level self-identities

(Hankivsky, 2010). It is through the lens of feminist intersectionality that this policy analysis examines the factors influencing participation in cervical cancer screening.

It is important to understand that although policy changes that promote access to health insurance coverage are a crucial step forward in advancing women's preventive health initiatives, they do not represent a linear progression forward, nor is there a single solution to the barriers women face in order to change health behaviors. In keeping feminist intersectionality at the forefront of this policy analysis, I understand that the approach to the inequities facing low-income women must be multi-dimensional and fluid.

In summary, this policy analysis is built on four key foundations which provide insight into understanding the historical and current complexities of health behaviors. The results of this study suggest a positive relationship between health insurance coverage and participation in cervical cancer screening. Furthermore, this policy analysis adds to the body of literature which demonstrates the complex history and present-day discourse impacting health behaviors for low-income women.

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Appendix A

Eleven Respondents Requiring Mean Number of Adults

Respondent ID	Total Persons in Household
48	2
49	4
51	5
52	5
4990	4
5295	4
6166	4
6171	3
6611	3
6613	4
6614	3

Note. Table depicts missing values for adults in household when children in household question was answered. Total person in household calculation = total children + mean (adults population) (2). Centers for Disease Control and Prevention 2013b.

Appendix B

Federal Poverty Levels 2014 and 2016

Persons in Household (2014)	Poverty Guidelines in $	138% Poverty in $
1	11,670	15,704
2	15,730	21707
3	19,790	27310
4	23,850	32913
5	27,910	38516
6	31,970	44119
7	36,030	49721
8	40,090	55324
9	44150	60927
10	48210	66529
11	52270	72132
12	56330	77735
13	60390	77735*
14	64450	77735*
15	68510	77735*
Persons in Household (2016)		
1	11,880	16394
2	16,020	22108
3	20,160	27821
4	24,300	33534
5	28,440	39247
6	32,580	44960
7	36,730	50687
8	40,890	56428
9	45050	62169
10	49210	67910
11	53370	73651
12	57530	79392
13	61690	79392*
14	65850	79392*
15	70010	79392*

Note. Federal poverty level (FPL) for 2014 and 2016; 138% of FPL for 2014 and 2016. Calculation of "poverty" variable for inclusion in population sample of women below 138% FPL. * BRFSS categorical income ≥ $79,000. Centers for Disease Control and Prevention, 2013b; U.S. Department of Health and Human Services, 2012; U.S. Department of Health and Human Services 2014; U.S. Department of Health and Human Services, 2016.

Appendix C

Variables Code Book

Variable	Range	Numeric Label	Frequency	Missing Values
_rfpap33				
	(0,1)	0=No	254	
		1=Yes	647	
				966/1867
Survey_yr	(0,1)	0=2014	1189	
		1=2016	678	
				0/1867
H_care	(1,5)	1=Private	488	
		2=Medicare	529	
		3=Medicaid	406	
		4=Other	104	
		5=None	60	
				(280/1867)
Age	(1,6)	1=18-24	152	
		2=25-34	240	
		3=35-44	251	
		4=45-54	293	
		5=55-64	335	
		5=65+	596	
				(0/1867)
Race	(1,4)	1=White	1353	
		2=Black	304	
		3=Hispanic	81	
		4=Other	129	
				(0/1867)
Ed	(1,4)	1=Not grad HS	295	
		2=HS grad	844	
		3=Some college	470	
		4=College grad	252	
				(6/1867)
Emp_yn	(0,1)	0=Not employed	1332	
		1= Employed	528	
				(7/1867)
Married	(1,4)	1=Married	400	
		2=Divorced/Separated	527	
		3=Widowed	389	
		4=Single	541	
				(10/1867)
Doc_care	(0,2)	0=None	227	
		1=One PCP	1509	
		2= Two or more PCP	125	
				(6/1867)

Checkup	(1,4)	1= Last year	1454	
		2= Last 2 years	179	
		3=Last 5 years	105	
		4= Over 5 years	115	
				(14/1867)
Visit	(1,6)	1=Once	227	
		2= Twice	243	
		3= 3 times	202	
		4= 4 times	194	
		5 = 6 times	217	
		6= More than 6 times	469	(315/1867)
Poverty	(0,1)	0=No	8289	(25/10,156)
		1=Yes	1842	
Answer	(0,1)	0=No	966	
		1=Yes	901	
				(0/1867)

Note. Codebook for dependent variable (_rfpap33), 10 Independent variables, variables to derive population sample (poverty and totper) derived from BRFSS variables. Refer to Appendix D for crosswalk of BRFSS variables to policy study variables. Centers for Disease Control and Prevention, 2015, 2017b).

Appendix D

Crosswalk BRFFS Variable to Study Variable

BRFSS Variable	Range	Numeric Label	Study Variable	Range	Numeric Label
_rfpap33	(0,1)	0=No 1=Yes	_rfpap33	(0,1)	0=No 1=Yes
Hthcvr1	(1,99)	1=Employ plan 2=Family's plan 3=Medicare 4=Medicaid 5=TRICARE 6=Tribal Health 7= Other 8= None 77=Don't know/Not sure 99=Refused	H_care	(1,5)	1=Private 2=Medicare 3=Medicaid 4=Other 5=None
_age_g	(1-6)	1=18-24 2=25-34 3=35-44 4=45-54 5=55-64 5=65+	Age	(1,6)	1=18-24 2=25-34 3=35-44 4=45-54 5=55-64 5=65+
_racegr3	(1,9)	1=White 2=Black 3=Other 4=Multi 5=Hispanic 9=Don't know	Race	(1,4)	1=White 2=Black 3=Hispanic 4=Other
_egucag	(1,9)	1=Did not grad HS 2=HS Grad 3=SomeCollege 4= College Grad 9= DK/Miss	Ed	(1,4)	1=Not grad HS 2=HS grad 3=Some college 4=College grad
Employ1	(1,9)	1= Employed 2=Self-employ 3= Out of work >1year 4= Out of work <1 year 5= Homemaker 6= Student 7=Retired	Emp_yn	(0,1)	0=No 1=Yes

		8=Unable to work 9=Refused			
Marital	(1,9)	1=Married 2=Divorce 3=Widowed 4=Separated 5=Never Married 6=Member of an unmarried couple 9= Refused	Married	(1,4)	1=Married 2=Divorced/Separated 3=Widowed 4=Single
Persdoc2	(1,9)	1= One 2= > 1 3= No 7= Don't know 9= Refused	Doc_care	(0,2)	0=None 1=One PCP 2= Two or more PCP
Checkup1	(1,9)	1=Last year 2= Last 2 years 3= Last 5 years 4= Over 5 years 7= Don't know 9= Refused	Checkup	(1,4)	1= Last year 2= Last 2 years 3=Last 5 years 4= Over 5 years
Drvisit	(1,99)	Mean / SD 17.95/28.52	Visit	(1,6)	1=Once 2= Twice 3= 3 times 4= 4 times 5 = 6 times 6= More than 6 times

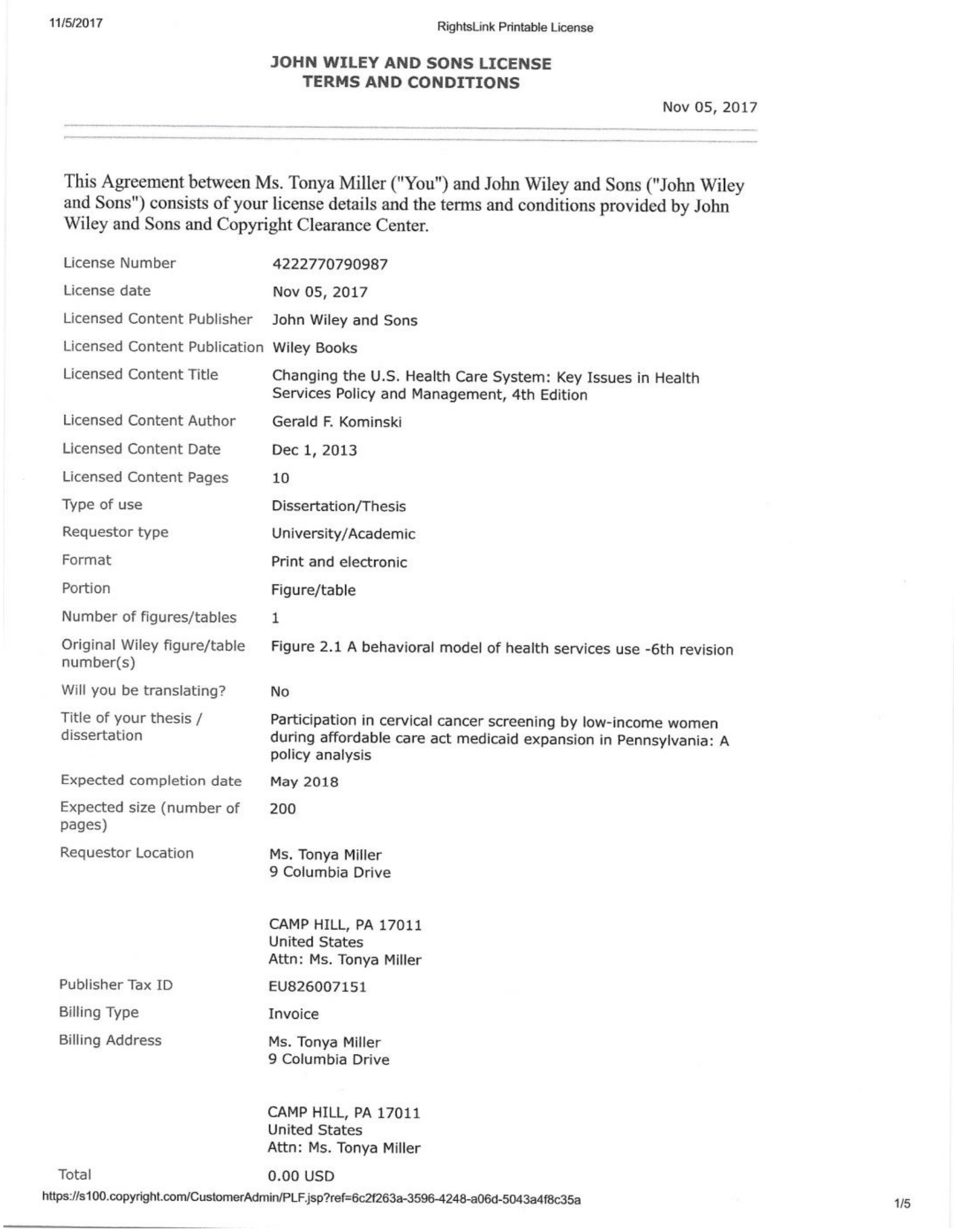
Variable*	Range	Numeric Label or Mean/SD	Study Variable	Range	Numeric Label or Mean/SD
HHADULTS		2.87/7.57	Totpers**		2.71/1.83
CHILDERN		56.33/41.49			
NUMADULT	(1,99)	1= 1 2=2 3=3 4=4 5=5 6-99= ≥6			
Income2	(1,99)	1=Less than 10k	Inc_md**	(5000,75000)	5000
		2=Less than15K			12500
		3=Less than 20k			17500
		4=Less than 25k			22500

5=Less than 35k			30000
6=Less than 50k			42500
7=Less than 75k			62500
8=More than75k			75000
77=Don’t know	Poverty***	(0,1)	No=8289
99=Refused			Yes=1842

Note: Crosswalk codebook BRFSS to study variables. * variables for purpose of calculating poverty; ** totper = HHADULT+NUMADULT+CHILDREN; Poverty is a function of inc_md and totper (example: poverty =1 if inc_md <15704 & totper=1 &survey_yr=0). Centers for Disease Control and Prevention 2015, 2017b; Hawaii Health Data Warehouse, n.d.)

Appendix E

Permission to Reprint Behavioral Model of Health Services Use 6th Edition



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