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Expanding Immediate Postpartum Contraceptive Options: South Carolina's Medicaid Policy

Amy Mattison-Faye

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EXPANDING IMMEDIATE POSTPARTUM CONTRACEPTIVE OPTIONS:
SOUTH CAROLINA'S MEDICAID POLICY

by

Amy Mattison-Faye

Bachelor of Arts
Skidmore College, 1997

Master of Public Health
University of South Carolina, 2010

Submitted in Partial Fulfillment of the Requirements

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University of South Carolina

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Accepted by:

Heather M. Brandt, Major Professor

Emily Mann, Committee Member

Jihong Liu, Committee Member

Jennifer Duffy, Committee Member

Cheryl L. Addy, Vice Provost and Dean of the Graduate School

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DEDICATION

To all my friends, colleagues, and mentors who have inspired, buoyed, and aided me through this process. Words cannot express the gratitude and love for the unwavering support.

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I would like to thank my Mother and Father for always being there for me. Your constant support and loving harassment has made this all possible. Thank you for instilling in me the value to ask at the end of the day if I have done enough for others. Very special thanks goes out to my brother Jon for his endearing jokes giving levity to many a long day.

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ABSTRACT

Offering contraceptives is essential to allow women the opportunity to plan for pregnancy and help prevent mistimed or unintended pregnancy. Intrauterine devices and implants, also known as long-acting reversible contraceptives (LARC), are the most effective methods of contraception. South Carolina Medicaid in 2012 launched an innovative policy expanding contraceptive access and coverage for women delivering in hospitals to have the option to receive a LARC immediately postpartum. However, in order for this policy to be successful, it relies on the capacity of hospitals and providers to adopt and implement without assistance. Identifying the provisions necessary in order for successful policy dissemination, adoption, and implementation will support current and future policy work.

Aim one of this study was to determine the uptake of immediate postpartum insertion of LARC in South Carolina hospitals. To establish the change in uptake of LARC in hospital settings, a retrospective analysis was completed of Medicaid claims data for all live births pre (2010-2011) and post (2012-2014) policy implementation for up to 60 days after delivery. The cross-sectional study sample included 86,941 births pre-policy and 158,381 births post-policy. The analyses identified that immediate postpartum LARC users were more likely to be White/Caucasian, Black/African American and 15-29 years. Overall, postpartum contraception use was low and post-policy findings found a decrease percentage of women receiving contraception within 60 days postpartum.

The second aim of this study explored how health care providers implemented the immediate postpartum insertion of LARC policy. An electronic survey was distributed to labor and delivery hospitals and a purposive recruitment from survey participants provided in-depth interviews with providers and key hospital staff. The analyses identified a delay in the adoption of the LARC policy within hospital settings due to two main challenges: the coordinating of internal policy systems and clinical practice concerns. These challenges highlight the need for establishing a system to enhance policy adoption and training for hospital implementation.

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LIST OF ABBREVIATIONS

ABM	Andersen’s Behavioral Model of Health Services Use
ACA	Affordable Care Act
ACOG	American College of Obstetricians and Gynecologists
BOI.....	Birth Outcomes Initiative
DHEC.....	Department of Health and Environmental Control
ISF.....	Interactive Systems Framework
IUD	Intrauterine Device
LARC.....	Long-acting reversible contraceptive
MCO	Managed care Organizations
NSFG	National Survey of Family Growth
PRAMS.....	Pregnancy Risk Assessment Monitoring System
SC.....	South Carolina
SCDHHS.....	South Carolina Department of Health and Human Services

CHAPTER 1

INTRODUCTION

Over the past four decades, family planning efforts in the United States have focused on increasing birth spacing and increasing planned births. With expanded contraceptive technologies and innovative policies supporting increased access to contraceptive provision, the United States has experienced a decline in unintended pregnancy; from 54 per 1,000 women age 15-44 years to 45 per 1,000 (Curtis & Peipert, 2017; Finer & Zolna, 2016; Kavanaugh & Jerman, 2017). Regardless of declines, there remain over 40 million women in the United States at risk of an unintended pregnancy (Finer & Zolna, 2016). Women at risk high risk of an unintended pregnancy are sexually active, lacking contraceptives, and in need of public assistance for contraceptive services and supplies (Finer, Lindberg, & Desai, 2018). Thus, the importance of contraceptive education, access, and provision remains a critical public health concern (Finer & Zolna, 2016a; Kavanaugh & Jerman, 2017).

Traditionally, an unintended pregnancy or an unplanned pregnancy is one that is defined as either unwanted or mistimed- occurring two or more years prior to desired conception (Sedgh, Singh, & Hussain, 2014; Singh, Sedgh, & Hussain, 2010). However, pregnancies that are unintended are not always considered unwanted thus, this outdated definition remains for debate (Finer et al., 2018). Unintended pregnancies can result in a live birth, miscarriage, or an induced abortion. Disproportionately, the majority of

unintended pregnancies occur among adolescents and young women (Aztlan-James, McLemore, & Taylor, 2017; Boardman, Allsworth, Phipps, & Lapane, 2006; Rice, Turan, White, & Turan, 2017). The disparity of unintended pregnancy between age groups are commonly coupled with younger, unmarried, minority women, with lower socio-economic status, and lower educational attainment (Boden, Fergusson, & Horwood, 2015; Hall, Kusunoki, Gatny, & Barber, 2015; Holliday et al., 2017; Iseyemi, Zhao, McNicholas, & Peipert, 2017). Unintended pregnancies that are often coupled with complex health disparities are more likely to have negative consequences for the pregnancy, infant, child, and parental health (Abajobir, Alati, Kisely, & Najman, 2017; Gipson, Koenig, & Hindin, 2008; Kost & Lindberg, 2015). Common negative indicators observed across all age groups include low-birth weight, preterm delivery, maternal depression, antenatal care, breastfeeding, and child nutrition (Boden et al., 2015; Everett, McCabe, & Hughes, 2016). These negative health outcomes are associated with multiple risk factors related to unintended pregnancy. Factors include alcohol and tobacco use, lack of a primary care provider, inconsistently or never using contraceptives, a previous unintended pregnancy, drug use, and being uninsured (Finer & Zolna, 2011).

In 2000, the United States began establishing national prevention goals for a decade to improve the health of Americans. One such prevention goal is to encourage planned pregnancies and birth spacing. The Healthy People 2020 goals are to increase pregnancy spacing and to increase planned pregnancies by 10% (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, 2010). The 2020 goal for pregnancy intention is to have 56% of pregnancies planned versus the baseline of 51% in 2002 (U.S. Department of Health and Human Services, 2010). The

National goal for pregnancy spacing is to have only 29.8% of pregnancies conceived within 18 months or less of a prior birth versus the 2010 baseline of 33.1% (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, 2010). Despite the recent declines in unintended pregnancy, there remain millions of women in the United States in need of financial assistance for contraceptive services (J. J. Frost et al., 2016). With numerous barriers, such as cost and transportation in accessing contraceptives, sexually active women in need and lacking protection are at high risk of unintended pregnancy. Although an unintended pregnancy does not always equate to an unwanted pregnancy, there are grave implications in birth outcomes for pregnancies that are truly undesired at the time. Even though there is limited temporal data linking unintended pregnancy with adverse health outcomes for the mother and child, it is recognized that women who have an unintended pregnancy are more likely to delay prenatal care and continue with risk behaviors such as smoking or drinking (Cleland, Peipert, Westhoff, Spear, & Trussell, 2011a; Finer & Zolna, 2016). A planned pregnancy enables a woman the opportunity to alter existing unhealthy habits and establish routines and transition to those supportive of a healthy conception including but not limited to prenatal vitamins and testing for sexually transmitted infections.

In order to support and meet the growing number of women in need of contraception, many state Medicaid entities have advanced innovative strategies and policies to expand access. South Carolina was one of the first states to launch a policy covering immediate postpartum insertions of long-acting reversible contraceptives (LARC) within hospital settings. This study evaluated the adoption and implementation of South Carolina's Medicaid policy on covering costs associated with post-partum

LARC insertion. This study provides information regarding the uptake of LARC postpartum, overall postpartum contraceptive trends, and implementation barriers for hospitals and providers.

1.1 AIM 1: To determine the uptake of immediate postpartum insertion of LARC in South Carolina hospitals.

The first study aim was to determine the application of immediate postpartum insertion of LARC in South Carolina hospitals. Analysis of cross-sectional Medicaid claims data for all live births between 2010 through 2014 was used to compare pre-policy (2010- 2011) outpatient postpartum LARC insertions with post-policy (2012-2014) inpatient hospital insertions. The central query was to assess characteristics (e.g. age) of those who received LARC including comparison with provider and hospital characteristics. Medicaid data were requested through the South Carolina Revenue and Fiscal Affairs Office Health and Demographics Section. The findings of these data are coalesced in Manuscript 1 (See Chapter 4) and to be submitted to Studies in Family Planning.

1.2 AIM 2: To explore how health care providers implemented the immediate postpartum insertion of LARC policy.

The second study aim explored implementation of the immediate postpartum insertion of LARC policy by hospitals in particular from the perspectives of health care providers and staff. A survey of labor and delivery hospitals assessed initial policy awareness and use. The survey recruited participants for key informant interviews with health care providers and key hospital staff. This provided further insight on the challenges to policy implementation. Interviews captured health care providers' attitudes,

beliefs, and practice of immediate postpartum insertions, and key staff (e.g. billing) perspectives of how practices within the hospital systems influenced adoption and delivery of the policy. The results for aim 2 are included in Manuscript 2 for submission to Women's Health Issues.

For innovative policies to be successful there is a need to understand the extent to which structural influences positively and negatively affect adoption and implementation. Evaluating policy dissemination, adoption, implementation, and assessing barriers, is critical for improving current and future policy development. This study aims to understand the complexity of policy adoption through implementation promoting access to IUDs and implants immediately postpartum.

1.3 DISSERTATION OVERVIEW

Chapter 2 provides a synthesis of the literature of the epidemiology of unintended pregnancy, the health and behavioral consequences of an unintended pregnancy, prevention via contraceptives, barriers to accessing contraceptives, and public policy. In addition to the literature review, Chapter 3 provides a summary of the research design and methodology. Two manuscripts in Chapter 4 encompass the results of the study. Chapter 5 covers the strengths and limitations, conclusions, and implications of the study.

CHAPTER 2

BACKGROUND AND SIGNIFICANCE

Chapter 2 provides a synthesis of the literature of the public health problem of unintended pregnancy, the epidemiology of unintended pregnancy, the health effects of an unintended pregnancy, contraception and barriers to prevention, and public policy.

2.1 UNINTENDED PREGNANCY: A PUBLIC HEALTH PROBLEM AND OPPORTUNITY

For centuries, women have used preventive methods to control fertility and timing of pregnancy. The right to use or not use a contraceptive method and control over a woman's body remains a dire fight (Luna & Luker, 2013; Ross & Solinger, 2017). A history of forced sterilization and reproductive coercion, sadly continue to affect women's health and reproductive autonomy (Luna & Luker, 2013; Ross & Solinger, 2017). Though having a child may be wonderful for some, the timing of a child may not always be ideal or even in the reproductive life plan of an individual woman. A woman that is sexually active and not using a contraceptive method either due to choice or access barriers (i.e. cost, transportation), is at risk for an unplanned pregnancy. A pregnancy that is unplanned thus unintended, is categorized as either unwanted or mistimed- occurring two or more years prior to desired conception (Sedgh, Singh, & Hussain, 2014; Singh, Sedgh, & Hussain, 2010). The outcome of an unintended pregnancy is either a live birth, miscarriage, or an induced abortion (Sedgh, Singh, & Hussain, 2014; Singh, Sedgh, & Hussain, 2010; Stover & Winfrey, 2017). For many, the thoughts of having a child are

associated with mixed emotions; joy and excitement; anxiety and fear; and others indifference. Expanded contraceptive technologies and novel preventative policies have increased the options for and coverage of contraceptive methods ultimately reducing the rate of unintended pregnancy. Forethought and planning prior to conception is critical for the health of mother and child.

2.2 EPIDEMIOLOGY OF UNINTENDED PREGNANCY

In the United States there are more than 20 million women estimated needing financial assistance for contraceptive services and supplies (J. J. Frost et al., 2016). Frost and colleagues identified that the number of women in need has increased by 5%, predominantly due to vulnerable populations including Hispanic, low-income, and adolescent populations (J. J. Frost et al., 2016). Providing women with a full range of contraceptive options including highly reliable contraceptives is a crucial for prevention of unintended pregnancy.

As noted in the introduction, reducing unintended pregnancy in the United States is a primary family planning objective for the government as documented in Healthy People 2020. In this chapter, a synthesis of the literature provides an overview of the current trends in unintended pregnancy; the consequences of unintended pregnancy, best practices in reproductive health care and contraceptive provision, public policy, and study purposes are detailed.

Firstly, defining and measuring unintended pregnancy is complex. Women are often ambivalent to the news of an unintended pregnancy and as a pregnancy progresses, women may tend to view that pregnancy as more desirable (A. R. A. Aiken, Borrero, Callegari, & Dehlendorf, 2016; Finer, Lindberg, & Desai, 2018; Holt, Dehlendorf, &

Langer, 2017; Johnson-Mallard et al., 2017). The intentionality of pregnancy for years has been constructed on retrospective measures from the National Survey of Family Growth (NSFG). For over 40 years, the NSFG has measured pregnancy intent based on three categories: intended, mistimed, and unwanted (Kost & Lindberg, 2015). A mistimed pregnancy is one that has occurred two or more years prior than desired conception (Singh et al., 2010). Although readily used retrospective measures serve as a proxy and are innately flawed. It is not simply ease of collapsing categories of pregnancy intention into a binary. This method does not encompass the vast range of women's contraceptive knowledge, contraceptive use, and attitudes towards pregnancy. Inconsistency or lack thereof in birth control use is interrelated with misunderstandings of contraceptives and pregnancy (J. J. Frost, Lindberg, & Finer, 2012; Sutton & Walsh-Buhi, 2017). It is imperative to acknowledge these inherent definition and measurement concerns when examining the complexity of unintended pregnancy.

Over 100 years ago, Margaret Sanger encouraged women to take an active role in their fertility. However, over the century limitations in policy, awareness, education, and access remain as barriers for millions of women. An analysis of contraceptive trends in the United States from 2008 to 2014 found that 60% of women use some form of contraceptive method (Kavanaugh & Jerman, 2017). These data noted an increase in the use of LARC (6% to 14%), withdrawal (5% to 8%), and natural family planning (1% to 2%) and a decrease in the use of sterilization for men (10% to 6%) and women (27% to 22%) (Kavanaugh & Jerman, 2017). Studies further exploring how men and women gather information on contraceptives to make informed decisions on health choices have found that information from friends and family are primary resources (Burns, Grindlay,

& Dennis, 2015; J. J. Frost et al., 2012; Sutton & Walsh-Buhi, 2017). Word of mouth messaging frequently conveys misinformation that perpetuates through social media. These conflicting messages may increase the anxiety for women when selecting a form of contraception. For instance, Sutton and Walsh-Buhi (2017), found media stories often reflected rare side effects or side effects not possible with the contraceptive method. A nationwide study found concerns and fear over side effects of hormonal birth control and LARC pervasive among the majority of women (J. J. Frost et al., 2012). Another study among women using short acting birth control, such as the pill or patch, identified a frequent misunderstanding of the method effectiveness increasing the opportunity for potential misuse (D. L. Eisenberg et al., 2012). Understanding the dimensions of contraceptive use, awareness, and resources for trusted information can aid providers and public health professionals with how best to disseminate medically accurate information and counsel on the full range of methods.

2.2 HEALTH EFFECTS OF UNINTENDED PREGNANCY

Unintended pregnancy affects the lives of women, men, families, and children throughout the United States. National trends of unintended pregnancy from the NSFG emphasize disparities among younger women age 15 to 24 years (see table 2.1). Since 2011, South Carolina's Pregnancy Risk Assessment Monitoring System (PRAMS) has reported fluctuation in unintended pregnancy from 47.5% in 2011 to 53.8% in 2015 but these rates are consistently higher than the national average ("Pregnancy Risk Assessment Monitoring System Data (SCPRAMS)," 2015). This increase affects thousands of women and families every year in South Carolina. A review of the literature reveals the complexity of measuring unintended pregnancy with adverse health outcomes

taking into account the interplay of social and political influences. In recent years, researchers have explored the various ways in which pregnancy intent may influence

Table 2.1 US and SC Unintended Pregnancy

Age Groups	% of Pregnancies that were unintended	
	United States ¹	South Carolina ²
15-17 years	72%	66%
18-19 years	76%	86%
20-24 years	59%	61%
25-29 years	42%	39%
30-34 years	31%	36%
35 years +	34%	35%

1.Finer & Zolna, 2016

2.SC PRAMS,2015

health outcomes for infant, child, and parent (Finer et al., 2018; Foster et al., 2018; Gipson, Koenig, & Hindin, 2008; Johnson-Mallard et al., 2017). These include maternal behavior during pregnancy, birth outcomes, maternal postpartum behavior, infant and child health, and parental health and wellbeing (Abajobir, Alati, Kisely, & Najman, 2017; A. R. A. Aiken et al., 2016; Foster et al., 2018; Gipson et al., 2008; Johnson-Mallard et al., 2017). In recent years, studies have focused on timing of pregnancy to best capture the spectrum of pregnancy intent. It is fundamental to comprehend the various levels of intent as it can influence early initiation of prenatal care as well as ceasing deleterious health behaviors incompatible with pregnancy.

In clinical best practices, it is known that early initiation of prenatal vitamins and prenatal care is associated with improved birth outcomes for the infant(Buck Louis et al., 2016; Burgess, Henning, Norman, Manze, & Jones, 2018; Everett, McCabe, & Hughes, 2016; Gariepy, Duffy, & Xu, 2015; Picklesimer, Billings, Hale, Blackhurst, & Covington-Kolb, 2012). Women with an unintended pregnancy are more likely to engage in risky prenatal behaviors such as smoking, alcohol consumption, and drug use

(Abajobir et al., 2017; Barton, Redshaw, Quigley, & Carson, 2017; Everett et al., 2016; Finer & Zolna, 2011; Johnson, Burke, Wang, & Pennell, 2018). High risk behaviors are commonly coupled with lower education attainment, lower socioeconomic status, unmarried, and younger age (Aztlan-James, McLemore, & Taylor, 2017; Robertson & O'Brien, 2018). Women who engage in high risk behaviors, are at a greater risk of an unintended pregnancy (Hartnett, Lindley, & Walsemann, 2016). For example, a woman who is depressed may engage in hazardous drinking and unprotected sex, thus leading to an unintended pregnancy (Everett et al., 2016). Previous findings have demonstrated the interplay of disparities in unintended pregnancy that in turn can also lead to poor health outcomes for mother and child (Abajobir et al., 2017; Foster et al., 2018; Kost & Lindberg, 2015). These studies highlight the importance of providing access to provision to a full range of reproductive health services including education, prenatal care, contraceptive counseling, and contraceptives for marginalized populations.

2.3 CONTRACEPTION

In 2014, an estimated 17.5 million women aged 15-44 reported using some form of contraceptive method (Kavanaugh & Jerman, 2018). For over a decade, the American College of Obstetricians and Gynecology has supported LARC as an effective first line of defense for adolescents, nulliparous women, and nursing women desiring to prevent pregnancy (American College of Obstetricians and Gynecologist, 2017). In contrast to short-acting contraceptives such as the pill, the effectiveness of a LARC is not dependent on the individual user (see Table 2.2) (American College of Obstetricians and Gynecologist, 2017). LARC include the Copper-T intrauterine (IU) device, the Levonorgestrel intrauterine system, and the Etonogestrel subdermal implant. Studies have

demonstrated that the use of LARC can greatly reduce the rate of unintended pregnancies including repeat pregnancies with a short inter-pregnancy interval (Damle, Gohari, McEvoy, Desale, & Gomez-Lobo, 2015; Secura, Adams, Buckel, Zhao, & Peipert, 2014). Study by Tocce and colleagues (2012), only 2.6% of adolescent mothers that received an immediate postpartum insertion of a LARC became pregnant within 18 months versus 18.6% of the control group. Connolly and colleagues (2014) found with England's expansion of government funding for LARC, a significant reduction in teen births and abortions. The Contraceptive CHOICE Project's findings mirrors that of Tocce

Table 2.2 Percent of Unintended Pregnancy by Contraceptive Use¹

Method	Typical Use	Perfect Use
Pill	9%	0.3%
IUD	0.2-0.8%	0.2-0.6%
Implant	0.05%	0.05%

¹ACOG 2017

and Connolly with participants experiencing lower pregnancy, birth, and abortion rates compared with national rates (Secura, Adams, Buckel, Zhao, & Peipert, 2014).

Presenting sexually active adolescents and young adults with comprehensive information and the ability to access long-acting reversible contraceptives provides a highly reliable alternative to oral contraceptives.

2.4 BARRIERS TO CONTRACEPTION

Despite ACOG recommendations and previous research studies that have demonstrated the effectiveness of LARC, there remains a lag in the uptake of use within the United States (American College of Obstetricians and Gynecologist, 2017; Ricketts, Klingler, & Schwalberg, 2014). Barriers exist due to patient and provider misconceptions of LARC (Dehlendorf et al., 2017; Kavanaugh & Jerman, 2017; Kavanaugh, Jerman, &

Finer, 2015; Potter et al., 2016; Tyler et al., 2012; White, Hopkins, Potter, & Grossman, 2013). Patient barriers consist of lack of information, cost of the devices, access to health services, and concerns about the side effects of LARC (A. R. A. Aiken et al., 2016; Fox et al., 2018; Hall et al., 2016; White et al., 2013). Provider barriers include lack of training for implantation and contraceptive counseling, provider perceptions or beliefs, and health center concerns over liability (Benfield et al., 2018; Dehlendorf et al., 2017; Tyler et al., 2012).

Among women in the United States, 12% are uninsured, 21% have Medicaid coverage, 65% have private insurance, and 2% have military or veterans coverage (Gutmacher Institute, 2018). Even though a large proportion of women have some form of health insurance coverage, 38% report skipping or delaying care due to concerns about cost (Gunja, Collins, & Beutel, 2017). As contraceptive methods vary in cost, the burden of copay or out-of-pocket expenses for uninsured can be excessive when competing with financial demands of food, housing, and transportation. If a woman chooses either an IUD or implant, the device and services can cost up to \$1,000 or more— for many this is an impractical expense. In a retrospective review of medical charts, women that were interested in a LARC selected an alternative contraceptive method once out-of-pocket expenses exceeded \$50 (Pickle, Wu, & Burbank-Schmitt, 2014). In the CHOICE project, study participants were provided contraceptive counseling and any reversible contraceptive method of their selection at no cost; 75% of the study participants selected a LARC (Birgisson, Zhao, Secura, Madden, & Peipert, 2015; Madden et al., 2018; Prescott & Matthews, 2014).

Studies of women's perceptions and awareness of LARC methods found that the majority had no knowledge of contraceptive implants and over half had never heard of the IUD (Amico, Bennett, Karasz, & Gold, 2017; Biggs, Kaller, Harper, Freedman, & Mays, 2018; Burns, Grindlay, & Dennis, 2015; Hall et al., 2016; Teal & Romer, 2013). Of those that had heard of the IUD, almost three-quarters were unsure of their safety and over half were unaware of their efficacy (Hall et al., 2016; Kavanaugh, Jerman, Ethier, & Moskosky, 2013; White et al., 2013). These studies have also demonstrated that many misconceptions remain with the IUD. Many women report believing that IUDs are unsafe or an inappropriate method for adolescents. As one young woman shared, "I don't know if it's a biased observation of me because I just feel like putting something in your vagina is just weird. I felt like that would just affect children but then maybe under the skin wouldn't be as damaging maybe" (Kavanaugh et al., 2013). In a survey of South Carolina women ages 18-49 years (n=735), there was limited understanding of the safety of LARC; almost three-quarters of women believed the implant to be unsafe and 32% of the women surveyed felt the IUD was unsafe (Institute for Public Policy and Survey Research, 2016). Limited awareness and knowledge of contraceptives methods lead to misperceptions and myths that are perpetuated in social and familial networks.

Women have varying concerns when it comes to contraceptive methods. For some it is important to have a monthly menses for others the main concern is to avoid weight gain with any method. In a study by Dehlendorf and colleagues, women often noted concerns with side effects. Among those surveyed, 42% of the women were concerned with amenorrhea, 29% with irregular bleeding, and 28% with heavier menstruations (Dehlendorf, Kimport, Levy, & Steinauer, 2014). Providers have the opportunity to

explore a woman's concerns by providing comprehensive contraceptive counseling to all female patients wanting to delay pregnancy. Providers should work with every woman to identify the best method that fits her life including potential side effects that may adversely impact continuation of a method (Dehlendorf et al., 2017; Fox et al., 2018).

As noted earlier in the chapter, for years women have faced the reproductive coercion and forced sterilization. The most disconcerting findings in the literature are incidences of women feeling pressure from their provider to get a LARC (Amico et al., 2017; Dehlendorf et al., 2014; Gold, 2014; Holliday et al., 2017). As many colleagues aptly note, there is reasonable concern that vulnerable or high-risk populations are targets in the promotion of LARC thus undermining individual reproductive autonomy (Gomez, Fuentes, & Allina, 2014a; Holliday et al., 2017; Mann & Grzanka, 2018). This last barrier is crucial to consider when examining data for the uptake of LARC. It is essential to identify the processes in place for contraceptive counseling, making certain that adolescents and young women receive the resources to make an informed decision based on their individual needs and not driven by providers.

Although ACOG recommends LARC as the primary choice for women desiring to delay pregnancy, provider barriers including perceptions and beliefs have repeatedly been cited as obstacles to recommending LARC (Benfield et al., 2018; Dehlendorf et al., 2017; Luchowski et al., 2014; Ricketts, Klingler, & Schwalberg, 2014; Tyler et al., 2012; Whitaker, Endres, Mistretta, & Gilliam, 2014). In Kavanuagh and colleagues (2013) research, one provider shared:

I just wish they were a little bit more open minded and a little bit more patient with possible side effects. I mean you have these young women that will go and

chop off their hair and if they don't like it they'll think to themselves oh, it will grow back, but with birth control if like two days later they are having bleeding they call right away and they are like I want this taken out right now

This quote highlights multiple issues with patient-provider communication and the adequacy of thorough counseling provided prior to insertion.

Additional studies assessing provider training and perceptions of LARC found that approximately a third to a half of providers believed that LARC are not suitable for adolescents or nulliparous women (Greenberg, Makino, & Coles, 2013; Kavanaugh et al., 2013; Rubin, Davis, & McKee, 2013; Tyler et al., 2012). In addition to LARC being unsuitable, many providers decline offering contraceptives of any kind to young women. As Rubin and colleagues (2013) shared one provider's comment, "If [an adolescent is] really interested in doing oral contraceptives or other birth control, then we would refer them [out].... I don't prescribe birth control pills.... There are probably 2 doctors here that would feel comfortable prescribing oral contraceptives. There are no physicians of the 5 of us that do anything further". Among providers that indicate LARC being safe for use, over half reported "rarely" using LARC on their patients (Teal & Romer, 2013; Tyler et al., 2012). Exploring physician practices nationally have identified growth in physician acceptance of LARC but still a limited number of physician offering LARC options (Bornstein, Carter, Zapata, Gavin, & Moskosky, 2018; Philliber, Hirsch, Brindis, Turner, & Philliber, 2017; Pickle et al., 2014). Another study found that providers with training in women's health during or after residency were significantly more likely to provide LARC to their patients (Greenberg et al., 2013). Rubin and colleagues found a lack of current

information and training as barriers to physicians offering LARC to patients (Rubin et al., 2013).

[I] was trained at a time when we didn't use IUDs in adolescents or nulliparous women because we were concerned about PID [pelvic inflammatory disease] and infertility.... I learned the new evidence from [champion] and the reproductive health team. It was a jolt to my way of thinking. I was open to changing because it was a great new option.... So the barrier was knowledge.... I [asked] but what about infection? [Champion] said the evidence does not show an increased rate of infection with IUDs. ...I worked in an office with other people, [who were] using a lot of IUDs.... It was, for whatever reason, something I believed and then changed my practice...because I really believe in teenagers not getting pregnant and offering them what I can.

In 2012 and 2013, a survey and interviews (respectively) were conducted with South Carolina health care providers. These studies were a coordinated effort by Advocates for Youth, the American College of Gynecologists and Obstetricians, and the Association of Reproductive Health. The survey and interviews were designed to assess the availability and provision of IUDs and implants; attitudes and myths about these methods, and gaps in training and practice around the provision of these methods. Among South Carolina providers surveyed, only 44% offered IUDs and 35% offered implants in their practice (Davis, 2013). Additional key findings included limited provider training in IUD and implant placement, provider perceptions that devices were appropriate only for select age groups and for primiparous or multiparous women, and a lack of client awareness and demand for LARC off-putting provision (Davis, 2013). Regarding client

demand, one nurse practitioner stated, “It’s hard to encourage someone to try a method they have never even heard of.” Another clinician commented, “We are fully capable now of providing LARC methods. Our nurse practitioners are trained, we have figured out Medicaid, we have the products in stock. The problem is that clients don’t want them. They are not even willing to try them.”

The aforementioned studies demonstrate the numerous obstacles to women receiving contraceptives including LARC. Beyond expanding patient awareness and education, providers also need education on how to provide quality comprehensive counseling and training to offer the full range of contraceptive methods. Truly expanding options for women of reproductive age means offering education on all methods to allow for an informed decision without judgement or coercion. This will allow women the opportunity to decide when or if to have a child thus reducing unintended pregnancy.

2.5 ROLE OF PUBLIC POLICY

Disparities in health care and coverage are well documented in the literature (Doogan et al., 2018; Finer & Zolna, 2011; Hall, Richards, & Harris, 2017). Ensuring equitable access to healthcare and quality of care contributes to the overall health of a nation and consequently to its economic growth and development (Kieny et al., 2017). In the United States in 1965, Medicaid was established as a collaborative federal and state government financed health insurance program for low income individuals (Centers for Medicare & Medicaid Services, 2016). Presently, Medicaid covers over 70 million Americans (Centers for Medicare & Medicaid Services, 2016; Kaiser Family Foundation, 2017). In the 1980s, Medicaid expanded coverage for prenatal, delivery, and postpartum care (Sonfield & Gold, 2011). Currently, almost two-thirds of women of reproductive age

are on Medicaid and half of all pregnancies financed by Medicaid (Kaiser Family Foundation, 2017). Estimated government expenditures associated with unintended pregnancy are approximately \$12.5 billion annually (Sonfield & Gold, 2011; Sonfield & Kost, 2013; ACOG, 2017). Medicaid covers a diverse array of healthcare needs including family planning services for individuals earning up to 138% of the federal poverty level (FPL)(Kaiser Family Foundation, 2017). Expanding coverage for and access to publicly funded contraceptives has been associated with increased use of contraceptives including LARC, and has been found to reduce the number of unintended pregnancies and abortions (Birgisson et al., 2015; J. J. Frost, Sonfield, Zolna, & Finer, 2014; Goldthwaite, Duca, Johnson, Ostendorf, & Sheeder, 2015; Madden et al., 2018; Ricketts et al., 2014). In the past two decades, 23 states have expanded their family planning services(Kaiser Family Foundation, 2017). This expansion allows for greater coverage of women from 185% to 200% of the federal poverty level (Kaiser Family Foundation, 2017; Sonfield, Kost, Gold, & Finer, 2011; Walls, Gifford, Ranji, Salganicoff, & Gomez, 2016).

In South Carolina, there are over 900,000 women age 15-44 years and approximately half are projected to need subsidized contraceptive services (Finer et al., 2018; SCDHEC, 2017). In order to meet the expanding need of constituents, South Carolina in 2011 approved a State Plan Amendment (SPA) for family planning allowing men and women with family income at or below 185% federal poverty level to receive services and supplies (SCDHHS, 2011). Services include a “family planning yearly exam, birth control, permanent sterilization procedures (vasectomy and tubal ligation), lab tests and the first treatment for some Sexually Transmitted Infections” (SCDHHS, 2011). Through the State Plan Amendment, SCDHHS may authorize coverage of

services for any or all of the three calendar months prior while an application is pending. In 2012, South Carolina Medicaid was the first state to launch a policy offering LARC within the hospital setting immediately postpartum (South Carolina Department of Health and Human Services, 2013). This policy was put forth in order to reduce the number of new mothers that missed their 6-week postpartum visit and became pregnant sooner than intended after leaving the hospital without reliable contraceptives (A. Aiken, 2017; Damle, Gohari, McEvoy, Desale, & Gomez-Lobo, 2015; Han, Teal, Sheeder, & Tocce, 2014; Heberlein, Billings, Mattison-Faye, & Geise, 2017). This policy acknowledges social factors that interfere with postpartum follow-up and contraceptive adherence. Missing a 6-week visit during which postpartum contraceptives are discussed, is not a product of indifference or poor behavior but rather a product of the complex interplay between individual and social environment (Behforouz, Drain, & Rhatigan, 2014). South Carolina is joined now by over 40 other states with Medicaid policies offering coverage for immediate postpartum insertions of LARC (Wu, Moniz, & Ursu, 2018).

Since the launch of the policy in 2012, Medicaid Fee for Service, and all of South Carolina's Medicaid Managed Care Organizations (Absolute Total Care, BlueChoice Health Plan, First Choice by Select Health, Molina Healthcare/WellCare Health) have joined the policy to their health plans. The South Carolina Birth Outcomes Initiative (SCBOI), an endeavor of the South Carolina Department of Health and Human Services (SCDHHS) put forth this innovative policy to increase access to LARC versus delaying services until the traditional 6-week postpartum follow-up appointment (Heberlein, Billings, Mattison-Faye, & Geise, 2017). Prior to this, women who were Medicaid recipients did not have the option to have an IUD or implant placed prior to hospital

discharge for childbirth. The South Carolina Medicaid policy states that the cost for an IUD or implant is an add-on expense in addition to the global charges for labor and delivery billed under the diagnosis-related group (DRG) (South Carolina Department of Health and Human Services, 2013). Due to the limitations in discount drug pricing (340b), the cost of a device is greater inpatient versus outpatient. Medicaid also stipulates that physicians or medical residents who perform immediate postpartum insertions of IUD or implants are able to bill and are compensated for insertions based on the South Carolina Medicaid fee schedule (South Carolina Department of Health and Human Services, 2013).

South Carolina's Medicaid policy was disseminated via a Medicaid Bulletin and through the BOI annual and monthly meetings. Although dissemination alerted hospitals and providers to this new coverage, for innovative policies to be successful there is a need to understand the extent to which structural influences may affect adoption and implementation. Hospitals and providers face competing demands in daily practice. During the year or more post-policy announcement, it was realized that the addition of a new policy within practice requires forethought of integration at all levels including across departments that may be impacted such as billing thus, a clarification bulletin restated the policy and addressed billing issues not previously identified (South Carolina Department of Health and Human Services, 2013).

Although South Carolina identified and developed an innovative policy to meet the needs of women, like many innovative policies it lacked a comprehensive action plan for dissemination, adoption, and implementation. Since the launch of the initiative in 2012, 40 other states have developed similar policies. Each of these states have

encountered similar challenges in implementation of an immediate postpartum policy. In order for the policy to be successful, states need to support the work of hospitals and staff for implementation.

2.6 CONCEPTUAL FRAMEWORK

The conceptual framework presented in Figure 1 integrates the Interactive Systems Framework (ISF) and Andersen's Behavioral Model of Health Services Use (Andersen, 2008; Meyers, Durlak, & Wandersman, 2012; Wandersman & Florin, 2003). The ISF framework examines the various systems that influence policy dissemination, adoption, and implementation and Andersen's Behavioral Model (ABM) incorporates both individual and contextual determinants of health services use (Andersen, 2008; Wandersman & Florin, 2003). Both the ISF and ABM are used to explore delivery, support, and implementation of various health policies: substance abuse prevention, trauma-focused interventions, early detection of breast cancer, teen pregnancy prevention, and other public health and medical issues (Firesheets, Francis, Barnum, & Rolf, 2012; Taylor, Weist, & DeLoach, 2012; Rapkin et al, 2012; Duffy et al, 2012).

This conceptual framework assisted with identifying the intersectional relationship of individual providers (e.g., physicians, pharmacists, billing, and administrators) with organizations (e.g., hospital settings) to assess the impact of postpartum LARC insertion policy implementation. The conceptual framework recognizes multiple contextual levels that either hinder or support the implementation of innovations into practice and captures how information passes through innovation dissemination. The second tier – *individual level* – examines various levels of awareness, beliefs, attitudes, knowledge of providers, hospital staff and ultimately the intended

recipient the women themselves. It is within this level that we focus on the gaps for implementation. For example, what do hospital staff and providers identify as necessary (i.e., training regarding specific billing codes for reimbursement) to adopt and implement the policy. Lastly, the environmental context in which a policy evolves can either hinder or enhance based on the current milieu. For example, policies sometimes are successful when different issues converge recognizing mutual benefits for all involved thus resulting in efficacious mobilization of the policy. This conceptual framework aids in identifying the central components of the processes, infrastructure, and capacities needed for successful policy implementation.

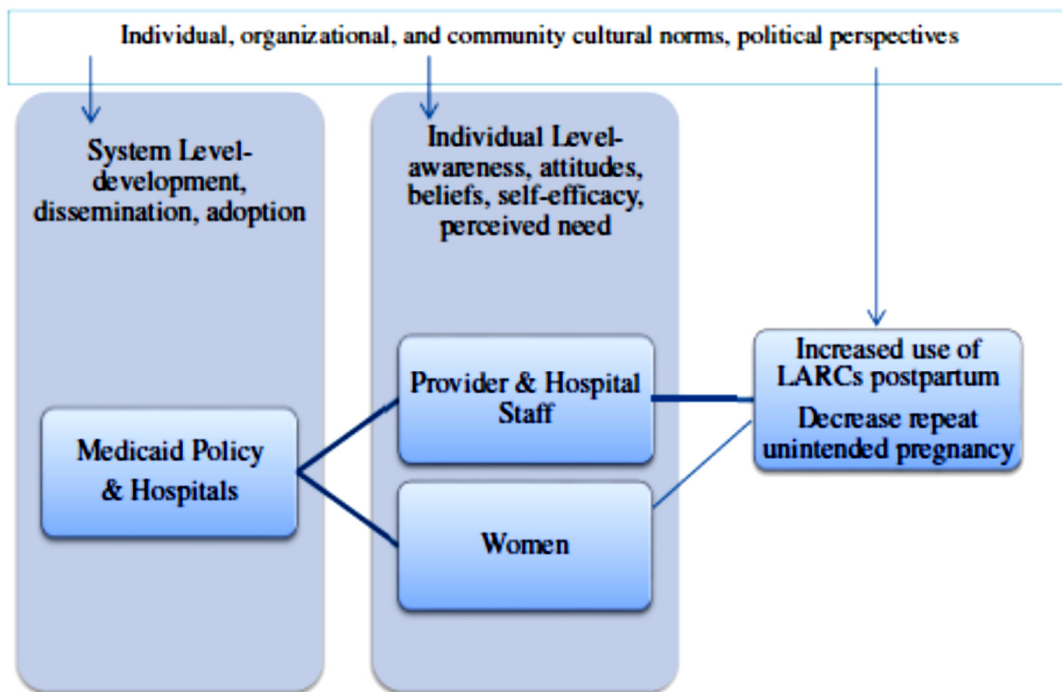


Figure 2.1 Conceptual Framework: Implementation of Immediate Postpartum LARC

2.7 DISSERTATION RESEARCH OVERVIEW

This dissertation builds on previous studies examining the importance of offering immediate postpartum contraceptives especially LARC. As the number of participating

states expand, there remain numerous questions regarding successful implementation. The study provides information on South Carolina's experience being the first state implementing within labor and delivery hospitals. Medicaid claims data examine LARC trends within the state pre and post-policy. The dissertation research provides in-depth qualitative information on key hospital staff and providers perspectives of postpartum LARC use, policy adoption and implementation, and barriers and capacities needed to for successful policy execution.

2.8 SIGNIFICANCE

The promotion of positive health behaviors is essential for improving the well-being of individuals within the United States. Policies can support system changes to address pervasive public health problems. In the United States, the Patient Protection and Affordable Care Act and the national goals set in *Healthy People 2020* are two significant forms of health promotion and prevention. Unintended pregnancy is a preventable public health problem. In order to prevent unintended pregnancy, South Carolina's advanced policy allows postpartum women selecting to delay having a repeat birth immediate access to highly reliable contraceptives. This innovative approach has sparked replication in states throughout the country. The dissertation research findings may provide guidance to other South Carolina hospitals interested in policy adoption with best practices for subsequent implementation.

CHAPTER 3

METHODOLOGY

3.1 STUDY DESIGN AND PURPOSE

This study used a mixed-method approach, including primary and secondary data, (1) to assess South Carolina's uptake of immediate postpartum insertion of LARC in hospitals and (2) to explore how health care providers implemented the immediate postpartum insertion of South Carolina's LARC policy.

3.2 BACKGROUND

To answer the first aim of the study, secondary data obtained from the South Carolina Office of Revenue and Fiscal Affairs provided Medicaid claims data for all live births prior to policy implementation (March 2010-2011) and post-implementation (2012-March 2015). For the second aim, a multiphase approach ascertained LARC policy implementation efforts and processes within hospitals. In the first phase, a brief survey distributed to contacts at 44 labor and delivery hospitals requested follow-up for interviews. Lastly, semi-structured interviews conducted with health care providers self-selected from the survey respondents. The University of South Carolina's Institutional Review Board approved this study and the South Carolina Revenue and Fiscal Affairs Office approved the use of Medicaid data for this study.

3.3 STUDY METHOD: AIM 1

Aim 1 was to determine the uptake of immediate postpartum insertion of LARC in South Carolina hospitals. The study database contains cross-sectional de-identified

Medicaid claims data for fee-for-service and all managed care organizations in South Carolina. Included are independent variables of patient characteristics including age, race, ethnicity, and date of delivery (Table 3.1 provides database elements). Data included the diagnosis and related device codes based on the 2012 and 2013 SCDHHS Medicaid bulletins for hospital billing standards for immediate postpartum insertion (see Table 3.2). This included the Healthcare Common Procedure Coding System (HCPCS) codes for the intrauterine copper contraceptive, levonogestrel intrauterine contraceptive, and contraceptive implant (J7300-J7307), ICD-9 Surgical Code (69.7, insertion of contraceptive device), and ICD-9 Diagnosis Codes (V25.01, prescription oral contraceptive- V25.9 contraceptive management). South Carolina Medicaid provides coverage of new mothers for 8 weeks post-delivery; thus, we requested documentation of inpatient and outpatient placement of a LARC or prescription for a contraceptive method during that time. We also requested documentation of the hospital level (for level of maternal care) and the postpartum care procedure code 59430 to determine the total number of women returning for a postpartum visit in addition to those also seeking contraceptives.

3.4 ANALYSIS

Claims data were assessed for completeness and quality to explore any inaccuracies in documentation. We identified discrepancies with the codes for insertion of devices and the actual number of devices placed by location (outpatient versus inpatient) for 4.8% of the inpatient device insertion claims. For example, a device insertion code may have been associated with an inpatient service but the device itself ended up being an outpatient claim. Due to this, we limited data to the billing code associated with the device and

therefore the actual number of inpatient insertions may be higher than reported. Statistical Package for the Social Sciences (SPSS) v24 (IBM, New York) was used to perform all analyses for this study. Univariate analyses on all variables were performed to determine if the data were normally distributed and to describe the sample. Descriptive statistics including frequencies, mean ranges, and standard deviations calculated for each variable to check for incompleteness and variance. Bivariate analyses conducted using Chi-square tests to determine if significant associations existed among dependent and independent variables.

Table 3.1 Demographic and hospital measures

Data Element	Definition
All 15-44 year olds enrolled in Medicaid	Enrolled and gave birth during 2010-2014
Date of birth of child	Date documented
Date of contraceptive provided	Date documented
Type of method provided postpartum	Pill, Depo Provera, ring, patch, condom, IUD, Nexplanon
Setting where method was provided	Outpatient, hospital, other
Removal of LARC	For women who received a LARC method, is there a code for having it removed
Date of removal of LARC	Date documented
Type of Medicaid	SPA/ family planning waiver, regular, managed care
Medical provider type who provided contraception	Ob/Gyn, nurse practitioner, other
Date of subsequent pregnancy diagnosis	Date documented
Race	Use standard definitions from Medicaid data
Ethnicity	Hispanic/ not Hispanic
Region	Upstate, Midlands, Pee Dee, Low Country
Tier of hospital	Level 1, level 2, level 2-E, level 3
Age of mother	Age at delivery of child
Marital status	Married, unmarried, separated, divorced, widow

Table 3.2 Contraceptive and surgical codes

Healthcare Common Procedure Coding System	Description
J7300	Intrauterine (IU) copper contraceptive
J7302	Levonorgestrel IU contraceptive,52mg
J7307	Etonogestrel(contraceptive)(implanon)
A4264	Permanent implantable contraceptive intra-tubal occlusion device (essure)
J7303	Contraceptive, hormone w/vaginal ring
J7304	Contraceptive supply, hormone patch
81025	Urine pregnancy test
84702	Gonadotropin chorionic (HCG) quantitative
84703	Gonadotropin chorionic (HCG) qualitative
85018	Blood count (HCG)
11976	Removal of implantable contraceptive
58300	Insertion of intrauterine device
58301	Removal of intrauterine device
59430	Postpartum care only (separate procedur
Diagnosis codes	Description
V25.01	Prescription – oral contraception
V25.02	Initiate contraception nec
V25.2	Sterilization
V25.40	Contraception surveillance, nos
V25.41	Contraception pill surveillance
V25.49	Contraception surveillance, necessary
V25.8	Contraceptive management, necessary
V25.9	Contraceptive management, nos
Surgical codes	Description
69.7	Insertion of contraceptive device
66.29	Other bilateral endoscopic destruction or occlusion of fallopian tubes.

Analyses of trends in the uptake of access to LARC immediately postpartum examined pre and post-policy device claims patterns. The first set of analyses focused on Medicaid claims for all postpartum contraceptives versus non-contraceptive users and second analyses for women who initiated LARC postpartum by year of placement. We also examined claims in relation to clinical setting (inpatient or outpatient setting) for delivery of a contraceptive method. For the two time points, pre- and post-implementation, we

tabulated the comparisons for analyses- LARC users versus non-LARC users. Further analysis using chi-square tests explored possible associations between categorical variables. We report p-values of less than or equal to .05 as considered significant.

3.5 LIMITATIONS AND STRENGTHS

Our study has several limitations. First, the issues in billing may cause a hospital to bill for a device in one quarter but due to the forced resubmission of claims may not be reimbursed until the following year. Thus, our data may not accurately reflect all devices placed postpartum. Second, our descriptive analysis is based on cross-sectional data and is restricted to eight-weeks postpartum. Temporal monitoring is needed to fully understand contraceptive use beyond the eight-week period. Thus, women may have received a contraceptive method postpartum, including a LARC, later in the postpartum period. Finally, the discrepancy between device claims and insertion numbers within the study sample highlight common errors in hospitals billing outside the diagnosis-related group. Education around billing may improve and limit mistakes in claims submission for devices.

Despite these limitations, this study indicates that when publicly funded IUDs and Implants are available immediately postpartum women do select these methods of contraception. The study also reveals that the development and dissemination of a policy is not enough for adoption and implementation. Therefore, successful implementation of the policy may be dependent on the individual-organizational collaborative relationships that existed within hospital settings when the policy went into effect. Contextualizing the environments in which implementation of health policies occur can aid in improving and sustaining health outcomes. As South Carolina strategically focuses on improving

postpartum work within hospitals, these data will help provide a baseline to monitor progress and the impact of capacity building efforts in implementing hospitals. Further monitoring results can inform work in other states that are facing similar implementation challenges on identifying resources that are necessary in order to improve policy adoption and implementation.

3.6 STUDY METHODS: AIM 2

The goal of Aim2 was to identify how hospitals and providers implement the immediate postpartum insertion of LARC policy. A multiphase approach was used to ascertain LARC policy implementation efforts and processes of hospitals to achieve Aim 2. Phase 1 was a brief survey to assess the implementation status of labor and delivery hospitals. Phase 2 included recruitment of providers from the survey to complete an semi-structure interview.

In Phase 1, an email containing an explanation of survey intent and a link (Survey Monkey) to the brief survey was sent to providers (physician or nurse) at the 44 labor and delivery hospitals in South Carolina. The contact list was obtained through a current initiative working with hospitals and South Carolina Department of Health and Human Services. The survey invitation that the ideal respondent would be a physician or nurse within labor and delivery. Due to the low number of responses, the survey remained open for 90 days. Based on previous research, incentives and reminder emails were sent to encourage a response rate greater than or equal to 50% of the hospitals (Hoddinott & Bass, 1986; Kasprzyk et al, 2001). A \$10.00 electronic Amazon incentive was given to those completing the survey.

Phase 2 included a purposive and snowball recruitment for interviews through the hospital survey. Interviews (n=12) include five physicians, one resident, three nurses, two billing staff and one pharmacy staff from four implementing hospitals and one hospital where implementation was unsuccessful. If a survey respondent was interested in an interview, an email invitation was sent to explain the intent of the interview, length, confidentiality, and requested the best contact number, preferred location, date, and time. Interviews were scheduled for optimal convenience of the interviewee and were done primarily telephonically. Interviews ranged from 30 minutes to an hour. Prior to beginning the interview, all participants were provided an overview of the study and further information on the procedures including confidentiality. This overview encompassed study goals and objectives with information on how to request results of the overall study. A \$25.00 electronic Amazon incentive was sent at the completion of each interview.

The development of questions and probes for data collection in Phases 1 and 2 was based on ISF were intended to capture and distill the elements and relationships involved in the dissemination and implementation process (Wandersman, Duffy, Flaspohler, Noonan, Lubell, Stillman et al., 2008). Interviews determined: 1) providers' experiences with initial adoption and implementation; 2) organizational support or barriers to policy implementation (upfront costs of devices, time constraints, religious association); 3) how barriers were overcome; 4) technical assistance needed for implementation; and 5) current system processes for policy implementation (i.e. from ordering to insertion) (see Appendix A for instrument).

The web-based survey included questions pertaining to 1) awareness of the Medicaid LARC policy; 2) implementation status; 3) barriers to implementation; 4) support for policy; and 5) willingness to participate in a follow-up interview or referral to an appropriate contact for further information (see Appendix A for instrument).

3.7 ANALYSIS

All interviews were transcribed verbatim and coded using NVivo qualitative data management software. Prior to coding, the first author read each transcript multiple times, then developed a coding scheme drawing on elements of grounded theory to organize and structure the data (Farnbach et al., 2017; Foley & Timonen, 2015). Memos and survey input supplemented thematic analysis of interview data. Codes initially reflect study aims and then open coding to allow identifying additional themes from the data. During the development of the coding scheme, continuous discussion with two of the authors provided opportunity to add any additional themes or resolve potential differences in interpretation. Once agreed upon, the first author applied the final coding scheme to all transcripts.

3.8 LIMITATIONS AND STRENGTHS

Our findings have several limitations. We studied a small, purposive sample of providers representing five labor and delivery hospitals serving South Carolina and our findings may not be generalizable to other groups or settings. In addition, the study did not assess the various nuances of site, gender, type of practice or training, duration of practice, or volume of eligible patients. In addition, some of the questions may have been socially desirable for the providers. Providers may have responded to questions regarding practice more in line with national standards versus their actual day-to-day technique.

The primary goal of this qualitative study was to understand adoption and implementation of the Medicaid policy. Our conceptual framework was used to guide the development and analysis of the study. Through acknowledging context, personal, and system level influences that may affect implementation, we were able to examine each potential influences for key stakeholders.

Despite the limitations, the interviews offer a wealth of information regarding provider and staff experiences. Interviewees were open to sharing barriers to LARC implementation including billing challenges and the need for training of providers. The details provided may be used to inform work with other hospitals in South Carolina and identify training needs that are potentially applicable to other states. The opportunity to hear from providers and key hospital staff are critical components in understanding how and if LARC are offered inpatient. This study identified several gaps highlighting the need for building the capacity of providers and hospital systems to increase immediate postpartum LARC policy implementation.

CHAPTER 4
MANUSCRIPTS

Manuscript 1

Immediate postpartum insertion of long-acting contraceptives: a review of South Carolina
Medicaid claims¹

¹ Mattison-Faye, A., Brandt, H.M., Liu, J., Duffy, J., & Mann, E. To be submitted to *Studies in Family Planning*.

Abstract

Background South Carolina was the first state to launch a policy to expand access to immediate postpartum insertions of long-acting reversible contraceptives (LARC) in hospital settings, yet there is limited information about the success of the LARC uptake in South Carolina.

Methods A retrospective analysis of Medicaid claims data for live births pre policy (2010-2011) and post policy implementation (2012-2014) assessed LARC use. The study sample included 86,941 births pre-policy and 158,381 births post-policy.

Results There was a small increase in the percent of women receiving a LARC method in the 8 weeks following delivery (0.9% prior to the pre-policy and 1.2% post). After policy implementation, White/Caucasian, Black/African American women age 15- 29 years were significantly more likely to receive an IUD or Implant immediately postpartum than women in other age groups.

Conclusions While South Carolina's Medicaid policy expands access, a limited number of women have selected this option. Additional efforts are necessary to support implementation including educating hospitals systems, providers, and women of inpatient options for those who choose to delay a subsequent pregnancy.

Background

Over the past decade, the unintended pregnancy rate in the United States decreased from 54 per 1,000 women among women aged 15-44 years in 2011 to 45 per 1,000 (Curtis & Peipert, 2017; Finer & Zolna, 2016; Kavanaugh & Jerman, 2017). Regardless of declines, there remains over 20 million women in the United States in need of contraceptive services (J. J. Frost, Frohwirth, & Zolna, 2016). Women who are

sexually active, lacking contraceptives, and in need of public assistance are at high risk of an unintended pregnancy (Finer et al., 2018). However, numerous barriers exist for women seeking contraceptives. Hindrances to contraceptive care can exceed beyond cost, transportation, and self-efficacy, and can involve state policy, health professional shortages, provider training, and provider bias (Batra & Bird, 2015; Eisenberg et al., 2012; Hall et al., 2016; Hamidi, Deimling, Lehman, Weisman, & Chuang, 2018a; Potter et al., 2016). Although an unintended pregnancy does not always equate to an unwanted pregnancy, there are often serious implications for birth outcomes (Finer et al., 2018). Women who have an unintended pregnancy are more likely than those with a planned pregnancy to delay prenatal care, continue with medications that may be contraindicated, neglect health problems that may impact pregnancy, or continue with risk behaviors such as smoking or drinking (Cleland, Peipert, Westhoff, Spear, & Trussell, 2011a; Finer & Zolna, 2016; Pazol et al., 2018). A planned pregnancy enables a woman the opportunity to alter existing unhealthy habits, cease potentially harmful medications, and establish routines supportive of a healthy conception including but not limited to prenatal vitamins and testing for sexually transmitted infections (Abajobir et al., 2017; Burgess et al., 2018; Sedgh et al., 2014; Singh et al., 2010). A planned pregnancy allows women the opportunity to prepare their health prior to conception.

In addition to potential negative health consequences, the financial implications associated with unintended pregnancies and subsequent births have been estimated to cost taxpayer billions annually (Cleland et al., 2011a; Laliberté et al., 2014; Madden et al., 2018). Disproportionately, the highest rates of unintended pregnancies occur most among older adolescents 18-19 years (71 per 1,000 women) and young women aged 20-

24 years (81 per 1,000 women) (Aztlan-James et al., 2017; Finer & Zolna, 2011, 2016; J. J. Frost, Lindberg, & Finer, 2012; Rice, Turan, White, & Turan, 2017).

Over half of unintended pregnancies that occur among older adolescents and young women are identified as a repeat pregnancy with a short inter-pregnancy interval occurring within less than two years (Appareddy, Pryor, & Bailey, 2017; Brunson, Roberts, Klein, Olsen, & Weir, 2017; Damle et al., 2015; Gemmill & Lindberg, 2013). Analyzing trends from the National Survey of Family Growth have estimated that approximately a third of pregnancies began less than 18 months from the previous birth and over half of those pregnancies were unintended (Cross-Barnet et al., 2018; Masinter, Dina, Kjerulff, & Feinglass, 2017; U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, 2010). Unintended pregnancy among older adolescents and young women can result in the disruption of economic and educational attainment causing instability and uncertainty (Gemmill & Lindberg, 2013; J. Stevens, Lutz, & Osuagwu, 2018). National prevention goals set forth in *Healthy People 2020* support the planning of pregnancies and stress the importance of healthy birth spacing. The 2020 goal for pregnancy intention is to have 56% of pregnancies planned versus the baseline of 51% in 2002 (U.S Department of Health and Human Services, 2010). The National goal for pregnancy spacing is to have only 29.8% of pregnancies conceived within 18 months or less of a prior birth versus the 2010 baseline of 33.1% (U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion, 2010).

As the number of women in need of contraceptives increases, it is essential to support and implement pragmatic and effective methods of prevention (J. J. Frost et al.,

2016). Providing men and women with education and access to a full range of contraceptives allows them to make an informed decision on when and if to conceive. For women who are already pregnant, having informed conversations with a provider during the prenatal period offers an opportunity to discuss intentionality of birth spacing (Bernard, Wan, Peipert, & Madden, 2018; Kaewkiattikun, 2017). For women who choose to delay a successive pregnancy, it is critical to provide them with contraceptive counseling on the range of methods including those available immediately postpartum to allow for an informed decision prior to delivery of a current pregnancy (Dehlendorf, Grumbach, Schmittziel, & Steinauer, 2016; Holt et al., 2017).

Since 2007, the American College of Obstetricians and Gynecologists has affirmed best practices to include the use of long-acting reversible contraceptives (LARC) as safe and effective method of prevention for women and adolescents wanting to delay pregnancy including in the immediate postpartum period (American College of Obstetricians and Gynecologist, 2012, 2016a, 2017; Hubacher, Spector, Monteith, Chen, & Hart, 2017; Wu et al., 2018). LARC, intrauterine devices (IUD) and contraceptive Implants, last from three to twelve years and are 99% reliable, thus removing human error that is associated with short acting reversible contraceptives such as the birth control pill (American College of Obstetricians and Gynecologist, 2017; Cleland et al., 2011a; Hubacher et al., 2017; Wu et al., 2018). Previous studies have demonstrated that use of a LARC can greatly reduce the rate of repeat unintended pregnancies (Brunson et al., 2017; Cohen, Sheeder, Arango, Teal, & Tocce, 2016; Damle et al., 2015; Han et al., 2014); however, predominant barriers to women receiving a LARC include the cost of the device and postpartum access to care (Cross-Barnet et al., 2018; Mestad et al., 2011).

In 41 states, Medicaid covers the costs of family planning including the hormonal IUD, copper IUD, and the Implant (Walls et al., 2016). There is evidence that offering a full range of methods including LARC can reduce abortion rates, adolescent pregnancy and unintended births (Birgisson et al., 2015; Cleland et al., 2011a; Madden et al., 2018; Ricketts et al., 2014). Almost two-thirds of women of reproductive age are on Medicaid and half of all pregnancies financed by Medicaid (Kaiser Family Foundation, 2017). Medicaid offers coverage for a diverse array of healthcare needs including reproductive health services. Qualifying individuals earning up to 138% of the federal poverty level can apply for coverage however, in the past two decades, many states have made amendments to allow for greater coverage of women from 185% to 200% of the federal poverty level (Laliberté et al., 2014; Vela et al., 2018). It is estimated that for every Medicaid dollar spent in preventative care for reproductive health services and contraceptives seven dollars is saved (J. Frost, Sonfield, Zolna, & Finer, 2014; Madden et al., 2018).

In South Carolina, Medicaid is the principle source of payment for 50% of births of which approximately 75% are reported as unintended (“Pregnancy Risk Assessment Monitoring System Data (SCPRAMS),” 2015; SCDHEC, 2017). National studies indicate 40% -50% of women with Medicaid coverage commonly miss their 6-week postpartum appointments and become pregnant sooner than intended (American College of Obstetricians and Gynecologist, 2016b; Han et al., 2014; Harney, Dude, & Haider, 2017; Wilkinson et al., 2018). In January 2012, the South Carolina Department of Health and Human Services (SCDHHS) announced Medicaid would reimburse for immediate inpatient insertion of an IUD and inpatient placement of an Implant in hospital settings.

South Carolina was the first state to put forth such a policy and is joined now by 40 other states. The impetus for this policy came from concerns of local providers whose postpartum patients commonly did not return for their 6-week postpartum appointments (American College of Obstetricians and Gynecologist, 2016b; Han et al., 2014). The policy was a joint effort of the South Carolina Birth Outcomes Initiative (SCBOI), over 150 community and health organizations, and an endeavor of the South Carolina Department of Health and Human Services (Heberlein et al., 2017). The goal of this policy was to increase access to highly reliable contraceptives for women choosing to delay a subsequent pregnancy. Until this policy change, highly effective postpartum contraceptive services were bundled with the hospital global charge and due to costs not offered until the postpartum follow-up visit; as a result, many women that wanted an IUD or Implant prior to leaving the hospital left without a preventative method. The South Carolina Postpartum LARC Medicaid policy states that the device cost is an “add-on” that it is covered in addition to the global charges for labor and delivery billed under the diagnosis-related group (SCDHHS, 2012). In addition, physicians or medical residents who perform immediate postpartum insertions of IUD or Implants can bill Medicaid separately and receive payment based on the South Carolina Medicaid fee schedule. All managed care organizations (MCOs) that contract with Medicaid in South Carolina have adopted the reimbursement policy. However, all MCOs require a 30-day pre-authorization for postpartum insertions. As of 2018, 40 other states join South Carolina in having Medicaid policies for immediate access to highly reliable contraceptives for postpartum adolescents and women (Walls et al., 2016). Despite the number of states with a postpartum LARC policy, many of these states still face numerous barriers with

implementation and have delayed uptake in LARC provision. In Iowa, post policy change 0.5% of deliveries had a LARC claim and in Louisiana, 1.3% of Medicaid births had a LARC claim (Okoroh et al., 2018). The objective of this study was to determine the uptake of LARC immediately postpartum within labor and delivery hospitals in South Carolina before and after the implementation of the Medicaid policy. We hypothesized that with the expanded coverage of costs for devices and services outside the diagnosis-related group would lead to an increase of the provision of these devices within hospital settings. Empirical evidence on the challenges with uptake of LARC associated with the policy expansion from South Carolina and other implementing states may be used to inform future guidance for policy dissemination, adoption, and implementation.

Data and Methods

Data Source

We obtained SCDHHS Medicaid claims data from the South Carolina Office of Revenue and Fiscal Affairs for all live births prior to policy implementation (2010-2011) and post-implementation (2012-2014). The database contains de-identified claims data for fee-for-service and all four managed care organizations in South Carolina. Patient characteristics included age, Non-Hispanic/ Hispanic White, Non-Hispanic/ Hispanic Black, Non-Hispanic/ Hispanic Other, date of delivery, and timing postpartum contraception (Table 1 provides database elements). Data included the diagnosis and related device codes based on the 2012 and 2013 SCDHHS Medicaid bulletins for hospital billing standards for immediate postpartum insertion. This included the Healthcare Common Procedure Coding System (HCPCS) codes for the intrauterine copper contraceptive, levonorgestrel intrauterine contraceptive, and contraceptive

Implant (J7300-J7307), ICD-9 Surgical Code (69.7, insertion of contraceptive device), and ICD-9 Diagnosis Codes (V25.01, prescription oral contraception- V25.9 contraceptive management). South Carolina Medicaid provides coverage of new mothers for 8 weeks post-delivery; thus, we requested documentation of inpatient and outpatient placement of a LARC or prescription for a contraceptive method during that time. We also requested documentation of the hospital level (for level of maternal care) and the postpartum care procedure code 59430 to determine the total number of women returning for a postpartum visit in addition to those also seeking contraceptives. The University of South Carolina's Institutional Review Board approved this study and the South Carolina Revenue and Fiscal Affairs Office approved the use of Medicaid data for this study.

Statistical analyses

First, we assessed claims data for completeness and quality to explore any inaccuracies in documentation. We examined claims in relation to clinical setting (inpatient or outpatient setting) for delivery of a LARC method. We identified discrepancies with the codes for insertion of devices and the actual number of devices placed by location (outpatient versus inpatient) for 4.8% of the inpatient device insertion claims. For example, a device insertion code may have been associated with an inpatient service but the device itself ended up being on an outpatient claim. Due to this, we limited the data analyzed to the billing associated with the devices and therefore the actual number of inpatient insertions may be higher than reported. Analyses of trends in the uptake of LARC immediately postpartum examined pre and post-policy device claims patterns. We first examined what percent of women received any postpartum LARC method. Second, we examined what percent of women initiated a LARC method

postpartum by year of placement. For the two time points, pre- and post-implementation, we tabulated the comparisons for analyses- LARC users versus non-LARC users. Further analysis using chi-square tests explored possible associations between categorical variables. We report p-values of less than or equal to .05 as considered significant. All analyses conducted using SPSS 24 (IBM, New York).

Results

The cross-sectional study sample included 245,322 women; aged 15-44 years with a live birth between 2010 and 2014. The majority of deliveries primary source of payment listed as a Medicaid MCO plan (61.8%) and occurred in a level 2 hospital (30.5%). The median age at delivery was 27 years with women predominantly being between the ages of 20-29 years (62.6%). The sample included White/Caucasian (47.9%), Black/African American (39.7%), Hispanic (9%), and Other (3.3%) (See Table 2 for characteristic of study sample).

Postpartum contraceptive use (any method) during the 4 years was 5.5% in the first eight weeks following a delivery. Pre-policy total postpartum contraceptive use was 4.2% of the births and post-policy postpartum contraceptive use was 6.0% of the births (See Table 3). Over 90% of contraceptives used postpartum were pills and the shot. Among contraceptive users, 22.3% initiated contraceptives within the first 7 days post-delivery and more than 60% after 4 weeks postpartum. Exploring if devices were placed during the 6-week postpartum visit found extremely low visit claims across the sample (13.5% pre-policy and 13% post-policy). Younger women (15-24 years) were more likely to have a 6-week follow-up visit $\chi^2(3, N=213,027) = 10303.95, p < .001$ however, there were no claims for devices associated with those visits.

In the pre-implementation data, there were 86,941 births for women 15-44 years and 0.9% LARC placed postpartum, all in outpatient settings. Post-implementation data contained 158,381 deliveries and 1.2% LARC postpartum claims (See Figure 1 for postpartum use). This was a significant increase in the number of postpartum devices with 756 pre-policy to 1,961 post-policy $\chi^2(1, N=242,605) = 69.63, p < .001$. Of the post-policy LARC device claims, 20.8% linked to an inpatient placement claim. Examining placement of inpatient LARC by hospital level identified 75% of LARC devices inserted occurred only at larger level 3 hospitals in the state in comparison to level 1 or 2 facilities. During the study period, White and Black women aged 15-29 years were more likely to receive an IUD or Implant in comparison with women 30 years and older $\chi^2(3, N=242,605) = 48.74, p < .001$. Examining continuation of LARC use after immediate postpartum placement found a nominal number of IUD and Implants removed (N=16) during the 8-week period.

Discussion

South Carolina was the first state in the Nation to undertake an innovative policy expanding contraceptive options immediately postpartum. Over the past six years, South Carolina has experienced how to implement a policy that is outside the traditional postpartum care routine and billing practices within hospital systems. Besides these challenges, South Carolina hospitals also lacked the resources necessary to support capacity building for implementation. Implementation science acknowledges that many factors can either inhibit or support innovative policies (Wandersman, Duffy, Flaspohler, Noonan, Lubell, & Stillman, et al, 2008). This study sample may reflect the challenges hospitals faced when expanding policy into practice. Post-policy, a limited number of

women received a LARC inpatient with the majority of LARC placed in outpatient settings. In spite of this, there was a demonstrable increase in LARC utilization post-policy. This small but positive trend is similar to LARC use in other states that have replicated South Carolina's Medicaid policy (Okoroh et al., 2018). Having states with similar lag in uptake of LARC indicate that having a policy is insufficient for supporting hospital adoption and implementation. The Medicaid claims data implies that there is a need for greater on-the-ground work to support policy adoption at the system level, training for staff and providers, and education for patients regarding their postpartum options.

This study is part of a larger inquiry of the adoption and implementation of the LARC policy in South Carolina hospitals. According to South Carolina's Department of Health and Human Services, of the state's 44 labor and delivery hospitals, 11 offer this service. This would attribute to the limited numbers observed for postpartum LARC placement. As previously noted, Medicaid reimbursement for a LARC is outside the traditional DRG system that hospitals use for billing. Input from implementing hospitals found that the system of coding for reimbursement outside the bundling system is challenging. The varying electronic health records per hospital system require the need for hospitals to have a good working relationship with their vendors to adapt billing methods. In some hospitals, this requires a manual push every 6 months for reimbursement of the devices thus causing lags and challenges for timely analysis of claims data. For example, Medicaid reimburses a hospital for the procedural fees but not for the device. This requires the billing staff to resubmit claims for unpaid devices and wait for payment until another quarter of the calendar year. This timely billing method is

not only burdensome but also costly for hospitals. Although this policy is of benefit for patients, these challenges are often too much of an investment both financially and with human resources for hospitals. Billing and reimbursement challenges add an additional layer of complexity to translation of policy to practice. In addition, affects interpretation of the claims data.

Our study has several limitations. First, the issues in billing may cause a hospital to bill for a device in one quarter but due to the forced resubmission of claims may not be reimbursed until the following year. Thus, our data may not accurately reflect all devices placed postpartum. Second, our descriptive analysis is based on cross-sectional data and is restricted to eight-weeks postpartum. Temporal monitoring is needed to fully understand contraceptive use beyond the eight-week period. Thus, women may have received a contraceptive method postpartum, including a LARC, later in the postpartum period. Finally, the discrepancy between device claims and insertion numbers within the study sample highlight common errors in hospitals billing outside the diagnosis-related group. Education around billing may improve and limit mistakes in claims submission for devices.

Despite these limitations, this study indicates that when publicly funded IUDs and Implants are available immediately postpartum women do select these methods of contraception. The study also reveals that the development and dissemination of a policy is not enough for adoption and implementation. Therefore, successful implementation of the policy may be dependent on the individual-organizational collaborative relationships that existed within hospital settings when the policy went into effect. Contextualizing the environments in which implementation of health policies occur can aid in improving and

sustaining health outcomes. As South Carolina strategically focuses on improving postpartum work within hospitals, these data will help provide a baseline to monitor progress and the impact of capacity building efforts in implementing hospitals. Further monitoring results can inform work in other states that are facing similar implementation challenges on identifying resources that are necessary in order to improve policy adoption and implementation.

Conclusion

Previous research indicates with removal of cost barriers for LARC there is a greater uptake in use (Birgisson et al., 2015; Cohen et al., 2016; Ricketts et al., 2014). The South Carolina policy provides women with Medicaid coverage the option of a LARC at no cost and the opportunity to receive it immediately postpartum in hospital settings versus waiting until the follow-up postpartum appointment. Public health experts have long advocated for focusing resources on prevention of unintended pregnancy. If effective, the benefits of policies to increase contraceptive coverage and access to all methods far outweigh the long-term impacts of an unintended pregnancy on family, community, and economy. Although data on LARC insertion in South Carolina are sparse, this study demonstrates the need for intensive work with hospitals for implementation. Further exploration in timing of postpartum counseling via chart abstraction to determine alignment would also allow the opportunity to identify the start and frequency of postpartum contraceptive counseling and any impact of selection of a contraceptive method in the postpartum period. With the number of states adopting immediate postpartum LARC policies continue to expand, it is critical to assess common challenges and identify core components for successful implementation.

Table 4.1 Data elements

Data Element	Definition
Date of live birth	Date documented
Date of contraceptive provided	Days post delivery
Type of method provided postpartum	Pill, shot, ring, patch, IUD, Implant
Setting where method was provided	Outpatient, hospital, other
Hospital level	Level 1,2,3
Removal of IUD or Implant	Documented removal
Type of Medicaid	Managed care, fee-for-service, emergency
Race	White, Black, Other
Ethnicity	Hispanic/ Non-Hispanic
Age of mother	Age at delivery of child

Table 4.2 Study Sample Pre and Post-policy

Study Sample N=245,322	Pre-policy 2010-2011	Post-policy 2012-2014	LARC Use 2010-2014
Age years, n (%)			
15-19 years	4505 (5%)	6133 (4%)	513 (5%)
20-24 years	26369 (30%)	43476 (27%)	1265 (2%)
25-29 years	29721 (34%)	53918 (34%)	623 (0.74%)
30-34 years	17868 (21%)	36659 (23%)	228 (0.42%)
>=35 years	8478 (10%)	18195 (11%)	88 (0.33%)
Total	86941(100%)	158381(100%)	2717 (100%)
Race, n (%)			
White/Caucasian	41246 (47%)	76274 (48%)	1187 (1%)
Black /African American	35921 (41%)	61558(39%)	1273 (1%)
Hispanic/Latina	7282 (8%)	14931 (9%)	157 (0.71%)
Other	2492 (3%)	5618 (4%)	100 (1%)
Hospital Level, n (%) ¹			
1	9792 (11%)	13778 (9%)	13 (0.06%)
2	26829 (31%)	48075 (30%)	3 (0%)
3	14409 (17%)	35913 (23%)	610 (1%)
Insurance, n (%)			
FFS	40431 (47%)	53288 (34%)	1353 (1%)
MCO	46507 (53%)	105093 (66%)	1364 (0.90%)
Postpartum 6-week claim	11743 (13.5%)	20552 (13%)	0 (0%)

¹39% of the study sample was missing the hospital level identifier

Table 4.3 Postpartum Contraceptive Use 2010-2014

Postpartum Contraceptive Use Inpatient and Outpatient	Pre-Policy (N=86,941)	Post-Policy (N=158,381)
Postpartum IUD, n (%)	402 (0.46%)	755(0.48%)
Postpartum Implant, n (%)	354 (0.41%)	1206 (0.76%)
Total LARC, n (%)	756 (0.87%)	1961 (1.24%)
Inpatient Placement, n (% of total LARC)	--	407 (20.75%)
Other Contraceptive Methods	3181 (3.79%)	7519 (4.74%)

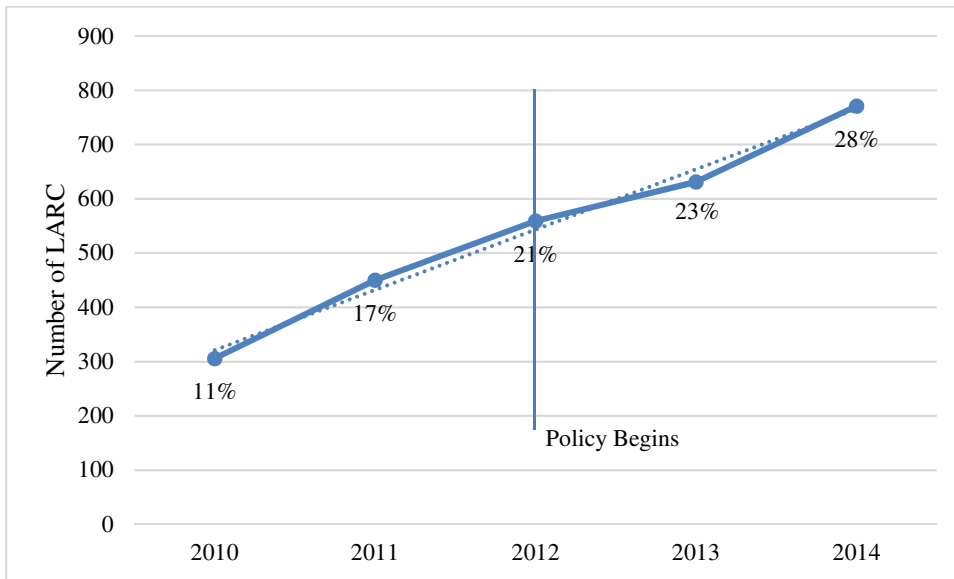


Figure 4.1 Number and Percentage of Total Postpartum LARC Use 2010-2014

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Medicaid Policy Adoption and Implementation of Immediate Postpartum Long-Acting
Reversible Contraceptives in South Carolina: Lessons Learned²

² Mattison-Faye, A., Brandt, H.M., Mann, E., Duffy, J., Lui, J. To be submitted to *Women's Health Issues*.

Abstract

Background Women have the right to choose when and if they become pregnant. This includes pregnant women that may want to delay a subsequent pregnancy. Intrauterine devices and implants, also known as long-acting reversible contraceptives (LARC), are the most effective methods of reversible contraception. South Carolina Medicaid in 2012 expanded coverage for women delivering in hospitals to have the option to select a LARC for insertion immediately postpartum.

Methods In-depth, semi-structured interviews were conducted with a purposive sample of 12 labor and delivery providers and staff. Grounded theory methodology assessed memos and interviews to gain understanding of successes and challenges of offering Medicaid recipients the option to receive immediate postpartum LARC.

Results The main issues identified that affect successful integration of the immediate postpartum LARC Medicaid policy in hospital settings include: 1) administrative challenges with billing and 2) providers' practices, including explicit preference for LARC that shaped approaches to contraceptive counseling and provider bias.

Conclusions Although South Carolina was the first state to cover immediate postpartum LARC insertion, there remain a number of barriers facing the implementing and the remaining non-implementing hospitals in the state. Translation of policy into practice requires reflective adaptations for various settings to maximize impact and reduce burden on providers and staff, thus it is essential to improve the synthesis of policy and practice of effective interventions.

Introduction

An unintended pregnancy is one that is unplanned and traditionally defined as either unwanted or mistimed – i.e., occurring two or more years prior to desired conception (Johnson-Mallard et al., 2017; Sedgh et al., 2014; Singh et al., 2010). However, not all unintended pregnancies are undesired, therefore this inadequate definition has been subject to ongoing debate (Finer et al., 2018; Morse, Ramesh, & Jackson, 2017). Unintended pregnancies can result in a live birth, a miscarriage, or an induced abortion (Finer & Zolna, 2011; Sedgh et al., 2014; Stover & Winfrey, 2017). The highest rates of unintended pregnancies occur among adolescents and young adult women, ages 20-24 (Aztlan-James et al., 2017; Boardman, Allsworth, Phipps, & Lapane, 2006; Rice et al., 2017). Unintended pregnancy is also more common among women who live near or below the poverty line, are Black or Latina, are unmarried, and have a high school diploma or less (Boden, Fergusson, & Horwood, 2015; Hall, Kusunoki, Gatny, & Barber, 2015; Holliday et al., 2017; Iseyemi, Zhao, McNicholas, & Peipert, 2017). While some scholarship shows an association between unplanned births and adverse maternal and infant health outcomes, the evidence is equivocal (Abajobir, Alati, Kisely, & Najman, 2017; Gipson, Koenig, & Hindin, 2008; Kost & Lindberg, 2015). Common negative health outcomes include low-birth weight, preterm delivery, maternal depression, antenatal care, breastfeeding, and child nutrition (Boden et al., 2015; Everett et al., 2016). Adverse birth outcomes are commonly associated with risk factors such as alcohol and tobacco use, lack of a primary care provider, lack of health insurance, a previous unintended pregnancy, drug use, and inconsistent or non-use of contraceptives (Barton et al., 2017; Finer & Zolna, 2011). The use of highly effective contraceptives

allows women the opportunity to prevent, plan, and space pregnancies; however, numerous factors shape whether or not women have access to the contraceptive methods of their choice and their willingness to use certain methods when they are available (Tepper, Curtis, Jatlaoui, & Whiteman, 2017; Thiel de Bocanegra, Maguire, & Darney, 2015; Tibaijuka et al., 2017).

For over a decade, the American College of Obstetricians and Gynecologists (ACOG) has established best practices for contraceptive provision. ACOG recommends that long acting reversible contraceptives (LARC) be considered as the primary contraceptive choice for women (American College of Obstetricians and Gynecologist, 2017). ACOG recommends LARC for adolescents and nulliparous women wanting to prevent or delay pregnancy (American College of Obstetricians and Gynecologist, 2017). LARC methods include intrauterine devices (IUD) and contraceptive implants and are over 99% effective from three to 12 years, depending on the method (American College of Obstetricians and Gynecologist, 2017; Cleland, Peipert, Westhoff, Spear, & Trussell, 2011b; Parks & Peipert, 2016). Previous studies have demonstrated that LARC use can greatly reduce the rate of repeat unintended pregnancies (Cross-Barnet et al., 2018; Han et al., 2014; Ricketts et al., 2014); however the main barriers to women choosing LARC include cost of the devices, access to care, lack of information, ambivalence about pregnancy, and personal preference (Cross-Barnet et al., 2018; Iseyemi et al., 2017; Mestad et al., 2011; Potter et al., 2016; Sutton & Walsh-Buhi, 2017).

The complexity of women's contraceptive knowledge, attitudes, and use, including inconsistent or lack of use, as well as their pregnancy intentions, are often related to misconceptions about contraceptives and pregnancy (J. J. Frost et al., 2012;

Hamidi, Deimling, Lehman, Weisman, & Chuang, 2018b; Sutton & Walsh-Buhi, 2017).

While it is beyond the scope of this article to discuss these issues at length, it is imperative for providers and the health care community to acknowledge potential ambivalence towards pregnancy among women, limitations in women's knowledge of their own reproductive health system, and contraceptive options when providing contraceptive care and counseling services (Galloway, Duffy, Dixon, & Fuller, 2017).

Although LARC are highly effective methods, LARC are not always the best methods or methods of choice for all women (Gomez, Fuentes, & Allina, 2014b; Mann & Grzanka, 2018). A woman may prefer to have her monthly menses, or have an aversion to having a foreign device in their body, and consider the potential side effects of irregular spotting or bleeding problematic (Hall, et al., 2016; Wu, Moniz, & Ursu, 2018). Offering women the opportunity to be fully informed to select a contraceptive method that is an appropriate fit for their life is essential for autonomy (Dehlendorf et al., 2016; Dehlendorf, Henderson, Vittinghoff, Steinauer, & Hessler, 2018). Thus, providing comprehensive contraceptive counseling throughout a woman's reproductive life cycle is vital (Fox et al., 2018). The ability to reproduce should be an individual choice of when and if to conceive.

In recent years the United States underwent an 18% reduction in unintended pregnancy; currently 45% of pregnancies are unintended (American College of Obstetricians and Gynecologist, 2017; Kavanaugh & Jerman, 2017). During the study time (2008-2014), the country expanded support for evidence-based comprehensive health education; expanded LARC options; several states expanded Medicaid eligibility criteria; and the federal government passed the Affordable Care Act (ACA). While these

changes may have influenced the decrease of unintended pregnancy in some states, there remain states with rates of unintended pregnancy that far exceed National levels. One such state is South Carolina with an unintended pregnancy rate over 53% (South Carolina Pregnancy Risk Assessment Monitoring System, 2015). Even with the benefits of the ACA, since 2010 South Carolina has experienced a 5% increase in the number of women seeking contraceptive provision and services (J. J. Frost et al., 2016). This expansion of need reflects an increase in the number of women of reproductive age who either classify as indigent or low income (J. J. Frost et al., 2016).

To meet demands of the increasing number of women in need of contraceptive services and decrease the number of unintended pregnancies, South Carolina Medicaid in 2012 was the first state to launch a policy offering LARC within the hospital setting immediately postpartum (South Carolina Department of Health and Human Services, 2013). Medicaid Fee for Service, and all of South Carolina's Medicaid Managed Care Organizations (Absolute Total Care, BlueChoice Health Plan, First Choice by Select Health, Molina Healthcare/WellCare Health) have joined the policy to their health plans. The South Carolina Birth Outcomes Initiative (SCBOI), an endeavor of the South Carolina Department of Health and Human Services (SCDHHS) put forth this innovative policy to increase access to LARC versus delaying services until the traditional 6-week postpartum follow-up appointment (Heberlein et al., 2017). Prior to this policy change, women who were Medicaid recipients did not have the option to have an IUD or implant placed prior to hospital discharge for childbirth. This was because both the cost of these methods and the insertion would be included in the global charges, so reimbursement would be the same regardless of whether or not the method was provided thus a costly

add-on for hospitals. The South Carolina Medicaid policy states that the cost for an IUD or implant is an add-on expense in addition to the global charges for labor and delivery billed under the diagnosis-related group (DRG) (South Carolina Department of Health and Human Services, 2013).

Recognizing that policies are often developed and launched without prior deliberation of the resources necessary to support building the capacity for implementation, this study explored the contextual barriers and requisites for implementation. Implementation science acknowledges that individual, organizational, and community factors have the ability to enhance or hinder innovative programs or policies (Wandersman, Duffy, Flaspohler, Noonan, Lubell, & Stillman, et al, 2008). Successful implementation of the policy may be dependent on existing individual-organizational collaborative relationships within hospital settings. Contextualizing the environments in which implementation of health policies occur can aid in improving and sustaining health outcomes. This study not only examines a policy to overcome social barriers for women in need of postpartum contraceptives, but also highlights the interplay providers and hospital settings have on the success of a policy within labor and delivery hospitals in South Carolina.

Methods

The findings presented here derive from a larger mixed methods study conducted in 2015-2016. Each year, there are approximately 57,000 live births in South Carolina, with the majority of births occurring among women age 20-34 years (SCDHEC, 2017). For every 10,000 women of reproductive age in South Carolina, there are two obstetrician/gynecologists. Additionally, there are 11 counties do not have any

Obstetrician/Gynecologists providers (Rayburn & American Congress of Obstetricians and Gynecologists, 2017). From the launch of the Medicaid policy in 2012 to 2015, the South Carolina Pregnancy Reporting Assessment Monitoring System (SCPRAMS) has reported an overall decrease in the number of women using contraception postpartum – from 82.9% to 78.7% (South Carolina Pregnancy Risk Assessment Monitoring System, 2015). In addition, during the data collection period, the number of labor and delivery hospitals in the state decreased from 46 to 44 and since 2016 continues to decline.

Participants

During fall 2015, a purposive sample of key contacts associated with labor and delivery hospitals in South Carolina were sent an email invitation a link to participate in a brief survey. The email invitation included a description of the study and requested completion by health care providers (advance practice registered nurse, physician, resident, and or fellow) working in labor and delivery or those with admitting privileges. The seven-item survey included questions pertaining to awareness of the Medicaid postpartum policy, current hospital postpartum LARC use, support or challenges for postpartum insertion, and willingness of the participant to do a follow-up interview. Survey participants (n=24) represented 20 of the labor and delivery hospitals in the state. Ten of the survey respondents indicated they would be willing to participate in an interview and provided their contact information. Interviews brought participation from four implementing hospitals (referred to hereafter as hospitals A-D) and one non-implementing hospital (hospital E). Interviews (n=12) include five physicians, one resident, three nurses, two billing staff and one pharmacy staff. Interview participants referred the billing staff and pharmacy.

Procedure

The first author conducted all semi-structured interviews that lasted in length from 30 minutes to 1 hour. All interviews were audio recorded with permission of the participant. The interview guide included open-ended questions exploring participants' experience with initial adoption and implementation; organizational support or barriers to policy implementation (i.e. upfront costs of devices, time constraints, religious association); how barriers were overcome; and current system processes for policy implementation (i.e. from ordering to insertion). Questions pertaining to provider experience specifically related to prenatal and postpartum contraceptive counseling (i.e. start of counseling, how often, and documentation) and any support necessary for policy adoption and implementation were also included. At the conclusion of the interviews, the researcher requested the information of any additional key staff to interview regarding certain aspects of hospital challenges. Participants received a \$25 e-gift card to thank them for their time. The Institutional Review Board of [blinded] approved this study. Respondents willing to participate in interviews received e-mail invitations with a copy of the study description, overview of confidentiality, and request to schedule a call for the interview.

Coding and Data Analysis

Interview audio files were transcribed verbatim and entered into NVivo v.11.0 qualitative data management software. Prior to coding, the first author read each transcript multiple times, then developed a coding scheme drawing on elements of grounded theory to organize and structure the data (Farnbach et al., 2017; Foley & Timonen, 2015). Codes initially reflected study aims and then open coding to allow identifying additional themes from the data. During the development of the coding

scheme, continuous discussions with the second author provided opportunity to add any additional themes or resolve potential differences in interpretation. Once codes were agreed upon, the first author applied the master codebook to all transcripts and when necessary recoded.

Results

Results from interviews exposed two primary themes as influencing adoption and implementation of the Medicaid policy: 1) system level challenges- including billing and reimbursement from Medicaid 2) impact of provider preference or bias for contraceptive provision. Throughout the interviews, there was a palpable tension between hospital system administration and providers regarding implementation. The struggle between inpatient placement of devices and the high cost of sustaining the efforts (device and placement reimbursement) within hospitals placed physician champions and hospital administrators at odds. It is apparent that as the number of hospitals closures across the state and country increase, administrators must closely monitor and balance revenue with patient needs.

System level challenges

Interview participants were asked about what barriers were encountered in the implementation of the policy and how these barriers were overcome. Participants often noted the primary challenge of billing and reimbursement for the devices. A provider at Hospital A acknowledged the importance of documenting success of the policy with hospital revenue and personally worked with the billing staff to identify challenges during implementation. As the coordinating billing staff member recalled:

The physician champion kept asking, “Are we getting paid for it?” And at that point we started investigating. We realized in September or October of 2012 that we had starting providing them [LARC] but that the billing requirements were so unique that we weren’t able to bill these. We had to go back through 6 to 7 months of claims and manually do adjustments and force claims out of the system in order to bill these and even at that point Medicaid doesn’t pay us for them...until we send Medicaid a list for them to validate at which point they send payment.

In order to continue providing immediate postpartum LARC uninterrupted in Hospital A, the physician champion went directly to hospital executives for their support. As recalled in the interview, “I talked to the hospital Chief Operating Officer (COO) to make sure that it was understood why I thought it was important so that from the very top there would be buy-in.” Much to the chagrin of the billing staff, the work continues in Hospital A where the billing process remains a laborious manual push every 6 months to Medicaid. The staff member did mention they are working with their IT department and electronic health system vendor to identify ways to automatize the process however, this would require a financial investment on the part of the hospital for adaptation.

This daunting billing process was equally a challenge and concern for Hospitals B, C, and D. Another billing staff member at Hospital B stated, “You have to follow-up with [Medicaid] weekly to make sure they’ll pay you...it takes about 60 days to receive payment...this [process] is unmanageable.” Another participant highlighted the crux of the billing challenge with policy implementation, “Medicaid puts out these bulletins saying they’re going to pay for things but they don’t work through the claims processing side of how mechanically it will work.” Without a streamlined process of payment

hospitals are less inclined to begin to offer these services and for those, already offering services, there is discussion of when it may end. “It is very hard to align the clinical to the finance side...you have to ask if it’s even worth it.”

During the interviews, it became apparent that after word of the billing challenges began to spread throughout the state, other interested hospital systems would try to establish billing procedures on the front end prior to allowing providers to offer immediate postpartum LARC. Hospital E discussed their attempts of working with Medicaid to implement which never came to fruition.

Many people have been involved in the process of trying to coordinate the implementation of this policy. We started really trying to implement LARC after many emails, conversations, etc. with other facilities and several people from Medicaid. We gave up... [The] primary deciding factor was the reimbursement definitely. We are not going to spend that much to buy a product that we can’t get reimbursed for or that is going to cause that much trouble for the billing department to try to get reimbursed for.

The provider continued to share that the final deciding factor from a hospital administrative perspective “was cost.” The bureaucratic system had determined, “It is much less expensive to do it in an outpatient setting than inpatient.” In other words, the financial risk was too great for the hospital to attempt to implement.

Among successfully implementing hospitals interviewed there are common traits. All hospitals are part of larger hospital systems, have greater staff capacity to support the burdensome billing requirements, and potentially have greater financial flexibility in the time awaiting reimbursement. All successful hospitals also had the flexibility to develop

diverse implementation teams. Cohesive teams can help the implementation process to monitor and adapt to meet the needs of all interested parties – both clinical and financial.

As one provider noted:

It took several months to get it right...the steps we took- we put together a team we thought of interested parties including head of nursing, residents, women's services, postpartum chief resident, administrative leads, pharmacy director, and billing director in the initial group.

The system challenges highlight competing priorities between providers offering expanding contraceptive options and the hospitals systems balancing quality care with escalating costs.

Provider Practices: Personal Preference and Bias

Like all human beings, providers are rarely able to disconnect their personal beliefs from their daily role in clinical practice. These views evolve from clinical experience, years in practice, and at times, bias that reflects the influence dominant ideologies and their explanations for unequal social relations. Interviews with providers illuminate the cross-section of personal influence within clinical practice. Although ACOG and the United States Medical Eligibility Criteria for Contraceptive Use (MEC) support the use of LARC in the immediate postpartum period, providers interviewed had varying perspectives on use immediately postpartum. Provider training and interpretation of clinical evidence vis-à-vis their own beliefs can influence whether or not a provider will be willing to offer immediate postpartum LARC to patients who are Medicaid recipients.

In the interviews, it became very apparent that not all physicians have experience and confidence with LARC insertions, especially the IUD. Lack of LARC insertion training and concern about expulsion are two significant barriers to policy implementation. Postpartum IUD expulsions are well documented; however, reports vary on timing and placement (vaginal or caesarian) and rates of expulsion (Blumenthal, Lerma, Bhamrah, & Singh, 2018; Chen et al., 2010; Jatlaoui, Marcus, Jamieson, Goedken, & Cwiak, 2014; Jatlaoui et al., 2018; Whitaker & Chen, 2018). Previous studies have identified that expulsion can range from 10% or less when the IUD is placed within 10 minutes of placental delivery to almost 30% expulsion if the IUD is placed after 10 minutes. The expulsion rate declines to almost 2% four weeks postpartum (Blumenthal et al., 2018; Chen et al., 2010; Jatlaoui et al., 2014, 2018; Whitaker & Chen, 2018). As a provider in Hospital B shared, “Despite evidence, providers will not do an IUD because they are afraid of expulsion.” Hospital A provider commented that expulsion concerns are related to cost of the device and concern of placement “the high risk patients we will never see again – they won’t attend their six-week appointment and you know with a \$700 device and a potential 21% expulsion I think ugh.” Provider from Hospital B further disclosed that within their system, only two providers were comfortable offering the IUD immediately postpartum. Hospital A provider openly discussed their comfort level and the need for additional education:

I don’t have a lot of personal experience with immediate postpartum or post placental IUD...if we got someone in here that had more experience or that could say ‘here is how I do it in my practice and here is how I do it when I have a C-

section and here is how I do it after a vaginal delivery and here are the kind of problems I have encountered' - the nuts and bolts.

Across all hospitals in the study, the implant was the primary LARC device utilized due to the ease and flexibility in timing of insertion versus the IUD. Although the IUD consistently was identified as the less desirable LARC device amongst providers, there was a willingness to receive expand training opportunities:

I think we are underutilizing it [IUD] I think we need a rah-rah lecture at a resident lecture or ground rounds. I think that even though the expulsion rates are way lower than the continuation rates I think it kinda scares people off. My personal private patients come to their 6 week check-ups...but those high risk patients are the ones we never see again and I think we're missing opportunities and I am not 100% sure how to increase that.

This provider also shared that if they believed a patient to be unlikely to return for postpartum care they would either not offer a postpartum IUD or would refuse to place one prior to discharge. The provider stated, "I am not doing it in patients who I don't think will follow-up well, I'm just not." Other providers echoed their willingness to place an IUD in patients perceived to be more responsible to return for their six-week postpartum visit. Another provider summed up the behavior of colleagues restricting provision of immediate postpartum contraceptives to: "You know arrogance. We [doctors] always know what's best." Unlike previous studies that have identified concerns of potential coercion with the use of LARC among low social economic status (SES) women, the providers interviewed expressed the inverse – a tendency to not offer or deny immediate postpartum IUD placement to the patient population based on their

perceptions of patient irresponsibility; such provider bias reflects negative stereotypes about women who are economically marginalized in the United States (Gold et al., 2015; Gomez et al., 2014b; Holliday et al., 2017).

Provider Practice: Lactation Consultants

It is well documented that exclusive breastfeeding provides an array of benefits for mothers and infants (Bennett & Mannel, 2018). While the rate at which a woman's fecundity returns is dependent upon an array of factors, lactation is a key determinant in delaying ovulation during the postpartum period (Lopez et al., 2015). Lactation amenorrhea method (LAM) is 98% effective in preventing pregnancy only when exclusive to near exclusive breastfeeding of a child 6 months or younger (Bennett & Mannel, 2018; Lopez et al., 2015). Despite recommendations of exclusive to near exclusive breastfeeding and sexual abstinence prior to the six-week postpartum visit, many women discontinue exclusive breastfeeding prior to this visit (Bennett & Mannel, 2018; Sridhar & Salcedo, 2017). Women that discontinue exclusive breastfeeding and are not using contraception are therefore at an increased risk of getting pregnant. Due to concerns with milk production, many lactation consultants recommend their patients abstain from hormonal LARC use immediately postpartum (Bennett & Mannel, 2018; Sridhar & Salcedo, 2017).

In recent years, there has been an expanse of studies examining the association between lactation and LARC use (Díaz, 2002; Holton, Antell, Medaglio, Wu, & Wilson, 2018; Levi, Findley, Avila, & Bryant, 2017; Stuebe, Bryant, Lewis, & Muddana, 2016). Nevertheless, the concerns of LARC in the immediate postpartum period also point to the fact that such LARC use is off-label. In other words, placement of the device is contrary

to the designated instructions provided by the manufacturer that indicates that use of a device may take place 4-weeks postpartum. It is conjectured that after delivery of the placenta, progesterone withdrawal initiates lactogenesis and that the progestin found in hormonal implants and IUD could delay the onset of milk production (Lopez et al., 2015). Despite the dearth of long-term data on risks, observational studies of progestin-only contraceptives suggest that these methods have no effect on the initiation and continuation of breastfeeding, or on infant growth and development (Bassol et al., 2002; Holton et al., 2018; Krashin, Tang, Mody, & Lopez, 2015; Lopez et al., 2015).

All providers interviewed noted the critical role lactation consultants serve in postpartum inpatient facilities. Lactation consultants have the unique opportunity to spend quality time with a patient and engage in conversations beyond breastfeeding. Interviewees mentioned that many women seek the insight of lactation consultants regarding postpartum contraceptive options. Providers in hospitals A, B, and C voiced lactation specialists' concerns about the potential interaction between hormonal LARC methods and breastmilk production and breastfeeding. Providers discussed the need to continuously monitor and share empirically relevant information to demonstrate the safety of LARC use for breastfeeding moms in order to garner the support of lactation consultants. A provider at Hospital X said, “[We] provided them with the evidence...reference to demonstrate that LARC were safe for breastfeeding mothers.” Another provider highlighted the need to involve lactation consultants on their team to support an open dialogue and gather the necessary data to counsel on breastfeeding and LARC use with patients. One hospital celebrated how expanded conversations between providers and lactation consultants resulted in the establishment of obstetric navigators.

This collaborative effort not only increases opportunities for inpatient and outpatient contraceptive care but also offers support for continuation of breastfeeding.

Provider Practice: Contraceptive Counseling

ACOG recommends postpartum contraception counseling occur during prenatal and postpartum care (Zapata et al., 2015). Prenatal counseling sessions should include a thorough discussion of a woman's general lifestyle, future reproductive aspirations, and preferences of the various methods available postpartum (Dehlendorf et al., 2016; Dehlendorf, Krajewski, et al., 2014; Fox et al., 2018; Kaewkiattikun, 2017). Prenatal contraceptive counseling provides an opportunity for women to discuss their long-term goals and identify if a postpartum method is an appropriate fit (Heberlein et al., 2017). For those who are unlikely to return to a healthcare facility for postpartum care, this affords them the chance to discuss inpatient immediate postpartum contraceptive options, if desired. All providers interviewed recognized the importance of early counseling as one provider expressed, "contraceptive counseling at postpartum [in the hospital] is not an ideal setting. It needs to happen early on." When asked to elaborate on how they provide counseling, another provider shared their approach: "I start at the very first visit asking patients about their reproductive life plan (goals for having or not having children). I ask, 'So, have you thought about birth control after you have this baby?'" Several of the providers mentioned that their patients often had an idea of the method they would like to use postpartum. If a patient is unsure of a method, providers would first recommend the IUD and implant: "I'll say let me tell you about two forms of contraception that you could start to use while you are still in the hospital immediately after you have your baby." This methodology of recommending the most effective

method is consistent with best practices and evidence in the literature from other successful state LARC initiatives (American College of Obstetricians and Gynecologist, 2017; Chacko et al., 2016; Kaewkiattikun, 2017; Ricketts et al., 2014; Romero, Middleton, Mueller, Avellino, & Hallum-Montes, 2015). Providers interviewed discussed ensuring women have all the information needed to make a knowledgeable decision: “Educate the patient on any side effects, make sure everyone has a clear understanding before moving forward.” Providers cited inconsistency in contraceptive counseling as a significant issue when it came time for placement in the hospital. One provider shared their experience in immediate postpartum contraceptive counseling:

Sometimes I’ll encounter patients that I personally have not counseled and won’t know what they were and were not told. I have my own spiel [sic] that I give before I consent someone and with the implant a big problem for our clients has been people coming back a few months and wanting them out because the changes in the bleeding patterns. So that’s a part of my counseling that I always mention and I don’t know if my colleagues do and that occasionally will come up and they [patient] will be like no one told me that.

Participants collectively noted that inconsistency in counseling approaches among providers limits a woman’s ability to gather the full range of information of a method including the side effects. In the literature, variation in contraceptive counseling can influence a woman’s autonomy to an informed decision and in turn push the providers’ agenda (Benfield et al., 2018; Littlejohn & Kimport, 2017; L. M. Stevens, 2018).

Discussion

Interviews conducted across the state to gather information on implementation of the immediate postpartum insertion of LARC policy by hospitals in particular from the perspectives of health care providers and staff. A survey of labor and delivery hospitals assessed initial policy awareness and use. Findings from the interviews provided further insight about the challenges to policy implementation. Interviews captured health care providers' preferences in use and practice of immediate postpartum IUD insertions, and key staff (e.g. billing) shared how practices within the hospital systems influenced adoption and delivery of the policy.

For innovative policies to be successful there is a need to understand the extent to which structural influences positively and negatively affect adoption and implementation. Hospitals and providers face competing demands in daily practice. The addition of a new policy requires forethought of integration at all levels including across departments that may be impacted, key staff involved, and patient interaction. Similarly, prior research indicated the need to have inclusive teams to support implementation (Heberlein et al., 2017). In an electronic survey distributed to hospital labor and delivery staff, only half of respondents were aware of the Medicaid policy. From the survey results and interview feedback, it was apparent that dissemination of the policy was limited to electronic bulletins and through word of mouth among provider champions of the policy. Among those interviewed, the majority practiced at an implementing hospital and one at a hospital that had been unable to implement the policy over a three-year period. The study revealed a delay in the adoption of the LARC policy within hospital settings due to two main challenges: systems challenges and provider practice. Evaluating this policy

through the lens of hospital systems emphasizes the complexity of implementation. Additional limitations identified challenges with discount drug pricing (340b). The cost of a device is greater inpatient versus outpatient thus; many hospitals prefer to offer insertions in their outpatient settings. Medicaid also stipulates that physicians or medical residents who perform immediate postpartum insertions of IUD or implants are able to bill and are compensated for insertions based on the South Carolina Medicaid fee schedule; however, this is a lower reimbursement rate than outpatient. These financial challenges have affected many hospitals making the decision not to adopt the policy due to the upfront costs that can range from \$650-\$950 per device.

South Carolina is not alone in facing implementation barriers for an immediate postpartum LARC Medicaid policy. In Louisiana and Iowa, similar policy changes has had limited access to and uptake of LARC and as the authors note ‘policy change was not enough’ (Okoroh et al., 2018). This study, like others focused on different states, identifies the steps and resources (e.g., training and technical support) necessary for a successful efforts for implementing quality postpartum contraceptive care provision (A. Aiken, 2017; Dallabrida, 2016; Heberlein et al., 2017; Okoroh et al., 2018; Romero et al., 2015). Findings highlight provider knowledge, attitudes, beliefs and the contextual interplay with the hospital setting and the impact of successful implementation of the policy. These findings can help guide future policy development, dissemination, and support policy adoption. Recognizing the needs and assets of the individual providers, staff, and hospital system can improve implementation.

Although this study provides insight into provider and hospital practices, our findings have several limitations. The study was a small purposive sample of providers

and staff representing five labor and delivery hospitals serving South Carolina. Due to limited response to requests for interviews, the majority of providers and staff represented urban systems and may not be generalizable to smaller, rural hospitals. In addition, the study did not assess the various nuances of those interviewed including gender, training with LARC, duration of practice, or volume of eligible patients. Many of the questions providers answered were socially desirable and interviewees may have downplayed some of their responses in order to reflect best practices.

In conclusion, hospital teams that are representative of all key departments and leadership are critical in the success of implementation. Comprehensive and informed teams that meet regularly can address internal challenges when systematizing a new initiative. Barriers to LARC access include perceptions of providers and their lack of training (Dehlendorf, Krajewski, et al., 2014; Kavanaugh et al., 2015). With any new pharmacological drug or device or new use of that method, there is the need for provider education and training. Providers interviewed recognized the safety and health benefits of LARC for women wanting to delay a subsequent pregnancy but acknowledge that not all providers felt comfortable with the use immediately postpartum. Acknowledging and addressing the concerns of providers, hospital administrations, lactation specialists, pharmacists, and other key staff may assist in supporting the adoption of this policy at additional hospitals in South Carolina and in other states. Future studies could further explore the impact of interventions focusing on building the capacity of providers and hospital systems to increase immediate postpartum LARC policy implementation.

CHAPTER 5

CONCLUSIONS AND IMPLICATIONS

The focus of this dissertation was to identify the level of adoption and implementation of the South Carolina Medicaid Immediate Postpartum LARC Policy. To accomplish this, we explored two specific aims: Aim 1) to determine the uptake of LARC in labor and delivery hospitals; and Aim 2) assessed how hospitals and providers implemented postpartum insertion within hospitals. This chapter further provides a summary of study limitations, implications for future practice, future research directions, and conclusions.

5.1. SUMMARY OF FINDINGS FOR AIM 1

Previous research indicates that when the barriers of cost are removed for a LARC there is a greater uptake in use (Ricketts et al, 2014; Tocce et al, 2012). This policy provides women on Medicaid with LARC at no cost and the opportunity to receive a LARC immediately postpartum in hospital settings versus delaying until the follow-up postpartum appointment. As noted previously, to identify change in uptake of LARC in hospital settings, a retrospective analysis was completed of Medicaid claims data for all live births pre (2010-2011) and post (2012-2014) policy implementation for up to 8 weeks post-delivery. The cross-sectional study sample included 245,322 women; aged 15-44 years with a live birth between 2010 and 2014. The analyses identified that

immediate postpartum LARC users were more likely to be White and Black women aged 15-29 years. Postpartum contraceptive use of any method during the first eight weeks following a delivery was limited. Pre-policy total postpartum contraceptive use was 4.2% of the births and post-policy postpartum contraceptive use was 6.0% of the births. Over 90% of contraceptives used postpartum were pills and the shot. Among contraceptive users, 22.3% initiated contraceptives within the first 7 days post-delivery and more than 60% after 4 weeks postpartum. Exploring if devices were placed during the 6-week postpartum visit found extremely low visit claims across the sample (13.5% pre-policy and 13% post-policy).

South Carolina was the first state in the Nation to undertake an innovative policy expanding contraceptive options immediately postpartum. Over the past six years, South Carolina has experienced numerous challenges with implementing a policy that is outside the traditional postpartum care routine and billing practices within hospital systems. This study sample may reflect the individual and contextual influences as identified in our conceptual framework that affect expanding policy into practice. This study found that post-policy a limited number of women received a LARC inpatient with the majority of LARC placed in outpatient settings. In spite of this, there was a demonstrable increase in LARC utilization both inpatient and outpatient post-policy. This small but positive trend is similar to use in other states that have replicated South Carolina's Medicaid policy or immediate postpartum LARC (Okoroh et al., 2018). Many of these states have experiences similar lags in the uptake of LARC. This may indicate that simply having a policy is insufficient for the potential need in support for hospital adoption and implementation. The Medicaid claims data implies that although there is interest,

adoption was limited to larger capacity hospitals in urban areas. There is a need for greater on-the-ground work to support policy adoption at the system level, training for staff and providers, and education for patients regarding their postpartum options.

5.2. SUMMARY OF FINDINGS FOR AIM 2

As reflected in our conceptual model, individual, organizational, and community factors have the ability to enhance or hinder innovations (Wandersman, Duffy, Flaspohler, Noonan, Lubell, & Stillman, et al, 2008). Therefore, successful implementation of the policy may be dependent on the individual-organizational collaborative relationships that existed within hospital settings when the policy went into effect. Contextualizing the environments in which implementation of health policies occur can aid in improving and sustaining health outcomes. The study not only examines a policy to overcome social barriers for women in need of postpartum contraceptives, but also highlights the interplay providers and hospital settings have on the success of a policy.

Interviews conducted across the state to gather information on implementation of the immediate postpartum insertion of LARC policy by hospitals in particular from the perspectives of health care providers and staff. A survey of labor and delivery hospitals assessed initial policy awareness and use. Findings from the interviews provided further insight about the challenges to policy implementation. Interviews captured health care providers' preferences in use and practice of immediate postpartum IUD insertions, and key staff (e.g. billing) shared how practices within the hospital systems influenced adoption and delivery of the policy. (Heberlein et al., 2017).

The electronic survey distributed to hospital labor and delivery staff, found that only half of respondents were aware of the Medicaid policy. Based on survey and interview results, it was apparent that dissemination of the policy was limited to electronic bulletins and through word of mouth among provider champions of the policy. Among those interviewed, the majority practiced at an implementing hospital and one at a hospital that had been unable to implement the policy over a three-year period. The study revealed a delay in the adoption of the LARC policy within hospital settings due to two main challenges: systems challenges and provider practice. Evaluating this policy through the lens of hospital systems emphasizes the complexity of implementation. Findings highlight provider knowledge, attitudes, beliefs and the contextual interplay with the hospital setting and the impact of successful implementation of the policy. These findings can help guide future policy development, dissemination, and support policy adoption. Recognizing to identify the needs and assets of the individual providers, staff, and hospital system can improve implementation.

5.3 SUMMARY OF MAIN FINDINGS

South Carolina is not alone in facing implementation barriers for an immediate postpartum LARC Medicaid policy. In Louisiana and Iowa, similar policy changes have had limited access to and uptake of LARC and as the authors note ‘policy change was not enough’ (Okoroh et al., 2018). This study identifies the steps and resources (e.g., training and technical support) necessary for a successful efforts for implementing quality postpartum contraceptive care provision. Previous research indicates with removal of cost barriers for LARC there is a greater uptake in use (Birgisson et al., 2015; Cohen et al., 2016; Ricketts et al., 2014). The South Carolina policy provides women with Medicaid

coverage the option of a LARC at no cost and the opportunity to receive it immediately postpartum in hospital settings versus waiting until the follow-up postpartum appointment. Public health experts have long advocated for focusing resources on prevention of unintended pregnancy. If effective, the benefits of policies to increase contraceptive coverage and access to all methods far outweigh the long-term impacts of an unintended pregnancy on family, community, and economy. Although data on LARC insertion in South Carolina are sparse, this study demonstrates the need for intensive work with hospitals for implementation. While the need for publicly available contraceptives increases, it is essential to understand methods for improvement of policies that expand contraceptives access in order to reduce errors of implementation. Additionally, further exploration in timing of postpartum counseling via chart abstraction to determine alignment would also allow the opportunity to identify the start and frequency of postpartum contraceptive counseling and any impact of selection of a contraceptive method in the postpartum period. With the number of states adopting immediate postpartum LARC policies continue to expand, it is critical to assess common challenges and identify core components for successful implementation.

In the past two years, there have been strategic efforts to improve the adoption and implementation of the postpartum LARC policy. Training for providers on LARC placement, billing and coding for staff, and advanced funding for LARC have been strategically implemented to support hospital efforts. However, hospital administrators and leadership continue to express their concern with the potential impact of the LARC revenue gap on the overall system and the reality to sustain offering postpartum LARC once this initiative is over. Two hospitals have led efforts with the South Carolina

Department of Health and Human Services (SCDHHS) to correct reimbursement issues. The SC Birth Outcomes Initiative Director presented on a live webinar in September 2017 and addressed relevant questions from stakeholders. However, based on our findings the future of the LARC policy being sustained remains unclear.

5.4 STRENGTHS AND LIMITATIONS

Readers should interpret study findings within the context of the following key limitations. In examining Medicaid claims data for a new billing system outside the traditional DRG, forces hospital billing departments to submit hard copy (paper) claims. With transference of any information for one system to another, there is the potential for human error. This study identified discrepancies between the codes associated with billing including the diagnosis related group, healthcare common procedure codes, and the surgical codes. This may also indicate that some of the contraceptives that met our criterion may not be included in the sample. Second, the study sample includes claims up to 8 weeks postpartum and does not include potential claims for a contraceptive method beyond that period. Thus, women may have received a contraceptive method postpartum, including a LARC, later in the postpartum period. Despite these limitations, this study offers one way to evaluate the uptake of this innovative policy.

The qualitative portion of this study included a small, purposive sample of providers representing five labor and delivery hospitals serving South Carolina. The findings may not be generalizable to other groups or settings within the region or country. In addition, the study did not assess various nuances of provider sex, duration within practice, and volume of Medicaid eligible patients. Our goal with this qualitative study

was to understand the processes with adoption of the Medicaid policy within hospital systems and the contextual experience with implementation.

5.5 IMPLICATIONS FOR PRACTICE

Study findings provide important information for current and future policy implementation. Lessons learned from hospital staff highlighted areas for other state and hospitals to focus when early stages of policy implementation. Reflecting on what steps should be in place prior to implementation, it has become apparent that prior to dissemination of a policy, assessment of needs and assets within the hospitals or implementing systems, should be conducted to identify capacity gaps for training, staffing, and technology systems (i.e., billing or coding). It is critical to note that policy implementation is not a one size fits all process. Each system has a unique organizational environment and culture that requires procedures distinctive to the setting. In order for systems to sustain a policy, it requires ongoing collaboration with key hospital staff to ensure that implementation of the IPP LARC policy aligns with and complements other hospital initiatives. Thus, identifying community or state agencies that have the ability to serve as a resource for technical support and to convene strategic learning workgroups may enhance the implementation process.

This study found hospital administrators and health care providers were actively interested in providing immediate postpartum contraceptives, particularly the implant. However, many were hesitant to invest in the IUD immediately postpartum as they cited expulsion rates as a concern. Smaller hospitals (i.e. those that are not perinatal region leads) also were interested but faced the challenge of exorbitant start-up costs related to stocking IUDs and implants that need to be available to women before hospital discharge.

Without seed funds for devices plus related insertion and hospital stocking costs, representatives from smaller hospitals indicated that they could not afford to wait for Medicaid reimbursement while also keeping the services sustainable. Thus, other states may need to invest funds to support initial implementation to alleviate the cost-gap until reimbursement processes are in place. This study also identified the need for capacity building for hospitals throughout the state to provide them with varying levels of support (especially technical assistance) to overcome perceived barriers, especially related to coding, billing, and reimbursement. In 2017, South Carolina collaborated with ACOG to begin intensive training tailored to implementing labor and delivery hospitals. Due to this strategic support, there has been an expansion of implementing sites. Finally, there is a need for positive and consistent messaging among providers offering contraceptive care. Counseling needs to remain consistent throughout a woman's pregnancy as well as during and after labor and delivery. It is critical that messaging remain consistent about the importance of breastfeeding, healthy birth spacing, and provide women with a full range of contraceptive options.

5.6 FUTURE RESEARCH DIRECTIONS

For this innovative policy to be successful in all 40 states there is a need to address the structural influences that affect adoption and implementation. Future research should examine the efforts underway with hospitals in South Carolina to get a better understanding of the level of resources needed for policy adoption through implementation to offering LARC immediately postpartum. In addition, exploring the content, quality, and timing of postpartum contraceptive counseling to assess any impact of selection of a contraceptive method in the postpartum period.

5.7 CONCLUSION

Throughout the country, South Carolina receives notoriety as a leader in immediate postpartum IUD and implant services, including Medicaid reimbursement. Although the uptake of IUDs and the implant postpartum has increased from launch of the policy in 2012 to present, the translation of policy to practice has struggled to overcome challenges in statewide adoption. This study identified barriers with policy dissemination and lack of support for implementation throughout the preliminary years. The study further explored the challenges in Medicaid billing and reimbursement that remain a barrier for expansion of hospital adoption especially in rural communities. Positive public health policies are commonly developed and disseminated devoid of the financial or technical support necessary for successful implementation. South Carolina's policy remains due to the support of state and local agency champions continuing to advocate and collaborate to improve technical support for hospital implementation. Sharing their learned experiences and techniques to overcome challenges with implementation has spurred increase in hospital adoption. It is important that other states trying to implement health policies recognize the critical need for support (financial and technical) to implement and observe positive health impacts at the state or county level.

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APPENDIX A

SURVEY AND INTERVIEW TOOLS

Dear {INSERT PARTICIPANT NAME},

My name is Amy Faye, and I am a doctoral candidate at the University of South Carolina. As part of my dissertation research, I am studying potential challenges and successes in regards to implementation of a South Carolina Medicaid policy regarding long-acting reversible contraceptives (LARCs) in hospital settings. I am asking hospital providers and key staff relevant in the implementation of this policy to answer five brief questions regarding potential barriers to policy implementation and suggestions for eliminating barriers.

Your participation is voluntary. If you do not feel comfortable answering a question, you can skip it. You might not benefit directly from participating, but you may potentially assist in providing essential input for other hospitals or states interested in implementing a similar policy.

Participation is confidential. The results of this study may be published or presented at a professional meeting, but, again, your identity will not be revealed.

Taking part in this survey is your decision. You may quit being in the survey at any time or decide not to answer any question you are not comfortable answering.

To participate by completing the survey, please go to {INSERT SURVEY LINK}.

I will be happy to answer any questions you have about the survey. You may contact me at 803-553-5636 or mattisoa@email.sc.edu if you have study related questions or problems. If you have questions about your rights as a research participant, you may contact the Office of Research Compliance at the University of South Carolina at 803-777-7095.

Thank you for your consideration.

With regards,

Amy Faye, MPH

mattisoa@email.sc.edu

Committee Chair: Dr. Heather Brandt

Electronic Survey

1. In South Carolina, does Medicaid reimburse (device and insertion) for immediate postpartum insertion of IUDs/Implants in hospital settings?	Yes No (*If no- skip to question 6 for further information/toolkit) Don't know
2. Does your hospital currently provide immediate postpartum insertions of either IUDs or Implants in the hospital?	Yes, but only IUDs Yes, but only Implants Yes, both IUDs/Implants In process but not implementing No Don't know
3. Have there been any barriers to implementing immediate postpartum insertion of IUDs/Implants in the hospital setting? (<i>Check all that apply</i>)	Lactation concerns Expulsion concerns of IUDs Billing Pharmacy- ordering devices Internal policies need to be established prior to implementation Other (open response option) None Don't know
4. Is there support among the clinical staff for immediate postpartum insertions of IUDs?	Yes No Don't know If no, why not (open response option)
5. Is there support among the clinical staff for immediate postpartum insertions of Implants?	Yes No If no, why not (open response option) Don't know
*6. Would you like to receive more information about the South Carolina Medicaid reimbursement policy including a copy of a toolkit for hospitals interested in implementing immediate postpartum insertion?	Provide email
7. Would you be willing to participate in a follow-up interview to describe your experiences with this policy or refer an appropriate contact for further information? The interview will take no more than 30 minutes (\$25.00 gift card for your time)	Yes No If yes, email (primary and alternative) contact information

Overview of Research Letter for Interviewees

Dear {INSERT PARTICIPANT NAME},

My name is Amy Faye, and I am a doctoral candidate at the University of South Carolina. As part of my dissertation research, I am studying potential challenges and successes in regards to implementation of a South Carolina Medicaid policy regarding long-acting reversible contraceptives (LARCs) in hospital settings. South Carolina is one of just 10 states in the country with Medicaid policies for reimbursing health care providers for LARC insertions in the immediate postpartum period – a critical innovation for expanding women’s access to these highly effective methods of pregnancy prevention and extending birth intervals. State policy makers and health care providers across the country are interested in establishing LARC postpartum services are eager to learn from colleagues in South Carolina.

I am asking hospital providers and key staff relevant in the implementation of this policy questions regarding potential barriers to policy implementation and suggestions for eliminating barriers. If you do not feel comfortable answering a question, you can skip it. You might not benefit directly from participating, but you may potentially assist in providing essential input for other hospitals or states interested in implementing this policy.

Participation is confidential. The results of this study may be published or presented at a professional meeting, but, again, your identity will not be revealed.

Taking part in this interview is your decision. You may end the interview at any time or decide not to answer any question you are not comfortable answering.

I will be happy to answer any questions you have about the interview. You may contact me at 803-553-5636 or mattisoa@email.sc.edu if you have study related questions or problems. If you have questions about your rights as a research participant, you may contact the Office of Research Compliance at the University of South Carolina at 803-777-7095.

Thank you in advance for taking the time to share your experiences and expertise!

Question Guide for Physicians and Nurses

Introduction

South Carolina is one of just fourteen states in the country with Medicaid policies reimbursing health care providers for LARC insertions in the immediate postpartum period – a critical innovation for expanding women’s access to these highly effective methods of pregnancy prevention.

State policy makers and health care providers across the country interested in establishing LARC postpartum services are eager to learn from colleagues in South Carolina. Your experiences with implementing or attempting to implement postpartum LARC services may help to improve and inform the Medicaid policy.

Thank you in advance for taking the time to share your experiences and expertise! South Carolina is a leader in implementing Medicaid policy to provide postpartum LARC services, and this toolkit will highlight the valuable work you have already accomplished and provide an important resource to other health care providers.

Do you have any questions before we begin?

Do I have your permission to record this interview?

{Turn on audio recorder.}

First I would like to ask you some questions about your role at the hospital.

- 1) What is your role at the hospital?
 - a. How long have you been in this position?

Now I am going to ask you some questions about the use of IUDs and Implants in your hospital.

2) Can you tell me about your hospital's policy on inserting LARCs immediately postpartum?

a. **If implementing**, can you tell me about the process involved in implementing this policy?

i. Probes: who was involved; Steps taken to set up in hospital; how long did this process take – from when you first decided to implement, to offering the service to women with all policies in place? (*skip to Q1c.*)

b. If **not currently**...

i. Who has been involved in the process of trying to coordinate implementing this policy?

1. How long (days, months?) did it take for the hospital to realize that this was something that they would be unable to implement?

2. What was the primary deciding factor/barrier?

a. What Steps were taken to overcome this barrier?

i. Who attempted to assist in this process?

1. Probe: medical director, Medicaid staff, pharmacy director, billing director?

b. What if any additional barriers were encountered?

i. Who attempted to assist in this process?

1. Probe: medical director, Medicaid staff, pharmacy director, billing director?
- ii. What do you think would need to happen in order for the hospital to offer postpartum LARC insertions to eligible patients?
 1. Probe: technical assistance with billing systems or support from other implementing hospital to talk with key staff or revision of billing methods from Medicaid? (*end of survey*)
- c. If **currently** in the process of establishing hospital policy and support for implementation...
 - i. How long has this process taken to date?
 - ii. What has been the process thus far for establishing the policy?
 1. Probe: Approval of hospital, billing, and pharmacy directors?
 2. Probe: Development of process for ordering LARCs?
 - iii. What support needs have you identified to assist in this process?
 1. Probe: assistance with billing or support from other implementing hospital to talk with key staff?
- 3) Are both IUDs and Implants offered?
 - a. If IUDs not offered, why not?
 - i. Are there plans to expand to include IUDs?
 - b. If IUDs offered, what is the estimated observed expulsion rate?

- 4) What barriers have been encountered in implementing this policy?
 - a. Probes: For example, concerns with local perspectives (i.e., not socially supported); political opposition; hospital policy challenges; billing issues with reimbursement for LARCs
- 5) How were these barriers overcome?
 - a. What are some suggestions for other hospitals presented with similar barriers?
- 6) Can you describe any technical assistance that was needed for implementation?
 - a. Probe: Additional training, billing assistance, pharmacy for ordering etc.
 - b. Are all key staff are trained in the necessary skills to implement the policy?
 - i. Probe: Up to date on training for insertions
- 7) Who were the key people you needed to involve in the development of the hospital policy?
- 8) What are any current issues with implementation?
 - a. If so, what is the
- 9) Can you describe the current system processes for policy implementation (i.e. from ordering to insertion)?
 - a. Is there a written policy in-place regarding implementation that is routinely communicated to all key health staff?
 - b. What is the process to keep LARCs routinely ordered and readily available on the labor and delivery ward?

- c. Are health staff are assigned roles for log of devices and identifying correct patient with correct device?

10) Can you describe a recent example of patient counseling and the informed consent process?

- a. What counseling happens during prenatal care? When does it take place?
How many times throughout prenatal care? Who provides the counseling?
What materials do you have to assist/support counseling?
- b. What counseling happens on the labor and delivery floor? When? By whom? Materials used?
- c. How does this get documented in charts?
- d. What training do providers receive regarding counseling?
- e. Do providers use any written materials/decision aids during the counseling process?
If yes, could we see them? (may we have a copy or take photos of them)
- f. What about consent? When does that take place? Who needs to sign?
Have you experienced someone declining a LARC? If so, Why do you think that happened?

11) Is there anything you would like to add related to the implementation of this policy?

Thank you so much for taking the time to talk with me today!

Billing Staff

Introduction

South Carolina is one of just fourteen states in the country with Medicaid policies reimbursing health care providers for LARC insertions in the immediate postpartum period – a critical innovation for expanding women’s access to these highly effective methods of pregnancy prevention.

State policy makers and health care providers across the country interested in establishing LARC postpartum services are eager to learn from colleagues in South Carolina. Your experiences with implementing or attempting to implement postpartum LARC services may help to improve and inform the Medicaid policy.

Thank you in advance for taking the time to share your experiences and expertise! South Carolina is a leader in implementing Medicaid policy to provide postpartum LARC services, and this toolkit will highlight the valuable work you have already accomplished and provide an important resource to other health care providers.

Do you have any questions before we begin?

Do I have your permission to record this interview?

{Turn on audio recorder.}

First I would like to ask you some questions about your role at the hospital.

- 1) What is your role at the hospital?
 - a. How long have you been in this position?

Now I am going to ask you some questions about the billing and billing procedures of IUDs and Implants in your hospital.

- 1) When did the hospital begin billing for LARC insertions?

- a) What were any initial challenges with this process?
 - i) Who did you have to contact for assistance?
 - (1) Probe: CMS staff
 - (2) Can you describe how the challenges were resolved? How long did it take to resolve challenges?
 - ii) What would have aided in starting this process?
 - b) Were the correct DRG, ICD, and HCPS codes for LARC insertions easily identified?
- 2) Can you describe the current billing and reimbursement process for IUD/Implants?
- a) Is the billing system equipped to submit a separate line item for the IUD/Implant?
 - b) If not, please explain the billing and reimbursement process?
 - i) Is manual/force resubmission needed for the devices?
- 3) Approximately how long does it take from submission of claims to reimbursement?
- 4) Are there any current challenges?
- a) Probe: Additional coding issues? Rejected claims?
 - b) Who do you contact for assistance?
 - (1) Probe: CMS staff
 - ii) How were the challenges resolved?
 - iii) How long did it take to resolve challenges?
- 5) What is the process for submitting these claims?
- 6) What is the process for handling rejected claims?
- a) Are these processes written and readily available for staff?
 - b) Would you be willing to share these with us?

- c) Approximately how long does it take from submission of claims to reimbursement?
- 7) What recommendations would you give other hospital billing staff starting this process?
- 8) What challenges still exist?
- 9) Is there anything you would like to add related to the implementation of this policy?

Thank you so much for taking the time to talk with me today!