Beyond Policy Innovation: Analyzing Access to Long-Acting Reversible Contraception

By

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Abstract

Purpose: Access to highly-effective birth control methods, including long-acting reversible contraception (LARC), is essential to advance the health and well-being of women and their families, and is a critical key to address persistent rates of unintended pregnancy in the U.S. However, considerable barriers to LARC access exist and policy innovation is necessary to drive progress and improve maternal health outcomes. The purpose of this applied research project is to categorize and describe the innovative policies and practices states have implemented to improve access to LARC and the outcomes of this innovation.

Methods: This research involves content analysis of a standardized selection of Medicaid State Plans, family planning policy manuals, LARC toolkits and guidelines, and other applicable state documents that provide information on access to LARC and contraception. The research sample was chosen using stratified random sampling of 25 states (n=25) based on their expansion of Medicaid. This study analyzed state LARC policies in the categories of LARC billing and payment, operations, training, and outreach.

Findings: This study found that within the research sample, complete evidence of LARC training policy innovation was represented by 24% of states, complete evidence of billing and payment innovation was found in 16% of states, complete evidence of outreach innovation was found in 12% of states, and none of the states in the research sample showed complete evidence of LARC operational innovation. States must fully operationalize their innovative LARC policies to yield measurable results and moreover, LARC funding innovation and Medicaid expansion are other key factors that have tremendous potential to increase access to LARC and improve maternal health outcomes.

Chapter 1: Introduction

Access to effective contraception grants women the right to well-being and agency over their lives. In a recent Supreme Court dissenting opinion, Justice Ruth Bader Ginsburg argued that "ready access to contraceptives … both safeguards women's health and enables women to chart their own life's course" (*Little Sisters of the Poor v. Pennsylvania*, 2020, p. 60). A significant and increasing body of global research, including studies by the American College of Obstetricians and Gynecologists (ACOG) and the World Health Organization (WHO), suggests that long-acting reversible contraception (LARC) is the most effective and cost-effective method of birth control on the market. The Centers for Disease Control (CDC) and the Office of Population Affairs (OPA) both recommend LARC, including intrauterine devices (IUDs) and hormonal implants, as the first-line contraception of choice as they have a success rate over 99 percent and remain effectual for up to ten years (Wachino, 2016). Although LARC is highly-effective and a superior method of birth control, uptake of LARC in the U.S. lags considerably behind the rest of the developed world. Moreover, rates of unintended pregnancy in the U.S. remain problematic at roughly 50 percent (Johansen et al., 2019). There appears to be a disconnect between the desire to prevent pregnancy and access to effective and durable contraception in the U.S. and states must innovate to increase access to LARC and improve maternal health outcomes.

Figure 1.1 LARC Infographic
(source: Kaiser Permanente, 2018)

Unintended pregnancies cause alarming health and economic consequences and disproportionately affect teens, racial and ethnic minorities, and women with lower levels of income and education (CDC, 2015). Unplanned pregnancies increase risk for poor maternal and infant outcomes and cost an estimated $21 billion annually in direct medical costs (CDC, 2015). Regardless of intention, over 50 percent of all births in the U.S. are paid for with public funding through Medicaid and rapid repeat pregnancies often occur when women do not initiate contraception shortly after delivery (Sandoe, 2018). Not only are unintended pregnancies exceedingly costly, they frequently result in severe maternal morbidity, mortality, and even infant mortality. Maternal and infant mortality rates, particularly among minority women, are significantly above average compared to the rest of the developed world and can be directly attributed to unintended pregnancy, poor birth spacing, and lack of adequate prenatal care (Johansen et al., 2019). In addition to health benefits of birth control options, effective contraception helps women "stay in school, advance their careers, avoid abortions, get out of poverty, reduce gender wage gaps, and control population growth" (Beaton, 2017, p. 4). There are obvious social and economic advantages as well when women have agency over their reproductive health.

Figure 1.2 Unintended Pregnancy (source: American Society for Reproductive Medicine, 2019)

Reliable access to effective contraception, especially highly-effective LARC, can greatly reduce rates of unintended pregnancy and maternal and infant death. Research by the New England Journal of Medicine suggests the efficacy of LARC is twenty times more effective in preventing unintentional pregnancy than other forms of birth control, is superior regardless of the age of the women, and has fewer contraindications meaning nearly all women are eligible for the device of their choice (Winner et al., 2012). Yet substantial barriers and challenges exist to increasing utilization of LARC in the U.S. and these barriers are "inconsistent with current clinical guidelines" (White et al, 2019, p. 6). Although barriers include financial challenges, operational constraints, lack of knowledge, and limited outreach, the overwhelmingly greatest challenge is the cost of the device. In the U.S., the cost of a LARC device ranges between $600 and $1300, not including the cost of the insertion procedure (Mui, 2018). This is a uniquely American challenge as a copper IUD in France costs $52 while the same device costs $1043 in the U.S. (Mui, 2018). While the device cost in the U.S. appears to be the root cause of the access issue, a public administrative perspective uncovers other areas that can be addressed to increase the uptake of LARC in the U.S. and beyond. These areas will be discussed in the literature review and in the conceptual framework.

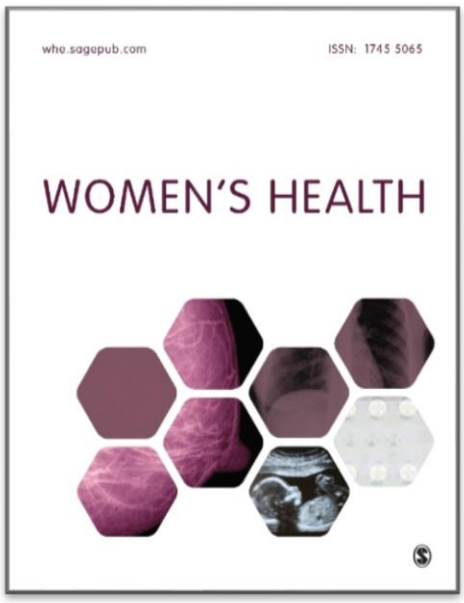


Figure 1.3 Women's Health Journal (source: Women's Health Journal, 2019)

Research Purpose

Based on preliminary research and review of the literature, there are many gaps in this area of health policy research. Scholarly research suggests access issues to LARC are a well-documented problem. Eisenberg et al. (2013) report that "extrapolated findings from published research on all reproductive-aged women" reveal that a multitude of major barriers to obtaining LARC exist in the United States (p. S60). However, papers documenting evidence-based and politically feasible solutions appear to be lacking. New contributions to the literature would include a comprehensive analysis of effective state innovation, as well as policy recommendations that could inform future initiatives to solve the LARC access problem.

Figure 1.4 Research Purpose

Therefore, the purpose of this descriptive research is to categorize and describe the innovative policies and practices states have implemented to improve access to LARC and the outcomes of this innovation. The objective is also to turn the content analysis of contraception policy, rule, law, and family planning benefits for each category into potential policy recommendations on how states can effectively improve access to LARC. This research paper will discuss a comprehensive literature review of existing scholarly research, present a conceptual framework and operationalization plan, explain the research methodology, report and analyze the research findings, and conclude with potential limitations and contributions of this LARC research project.

Chapter 2: Literature Review

Chapter Purpose

The purpose of this chapter is to present existing scholarly and peer-reviewed research and literature and discuss its limitations in providing effective politically feasible solutions to the problem of LARC access. Existing research examined includes the topics of LARC efficacy and the prevalence of unintended pregnancy, LARC trends in the U.S., barriers to LARC utilization, attempted innovation to overcome the barriers to LARC, and concludes with an overview of the conceptual framework to this research study. The conceptual framework contains the descriptive categories that represent potential LARC innovation, which includes LARC billing and payments, LARC operations, LARC training, and LARC outreach. The literature pertaining to these categories is reviewed in the subsequent sections.

LARC Efficacy and Unintended Pregnancy

Upon review of existing peer-reviewed LARC literature, several principles are evident. There is near consensus that LARC is the most highly effective method of contraception available and apart from permanent sterilization, is the superior first-choice birth control option to prevent unintended pregnancy (Winner et al., 2012). A nonrandomized four-year longitudinal study reported by the *New England Journal of Medicine* revealed that nearly half of all unintended pregnancies are a result of contraceptive failure, and "increasing access and availability of LARC could significantly reduce the number of unintended pregnancies in the U.S." (Winner et al., 2012, p. 1999). This is important because unintended pregnancies are tremendously expensive and frequently lead to poor maternal and infant outcomes including death. Of particular concern is the current maternal mortality rate in Texas where black mothers die twice as often as white mothers (Johansen et al., 2019). Furthermore, doctors argue that up to

80 percent of these maternal deaths are preventable, yet with the highest uninsured rate in the country and 55 percent of women covered by Medicaid, Texas has exceedingly difficult challenges to overcome (Johansen et al., 2019).

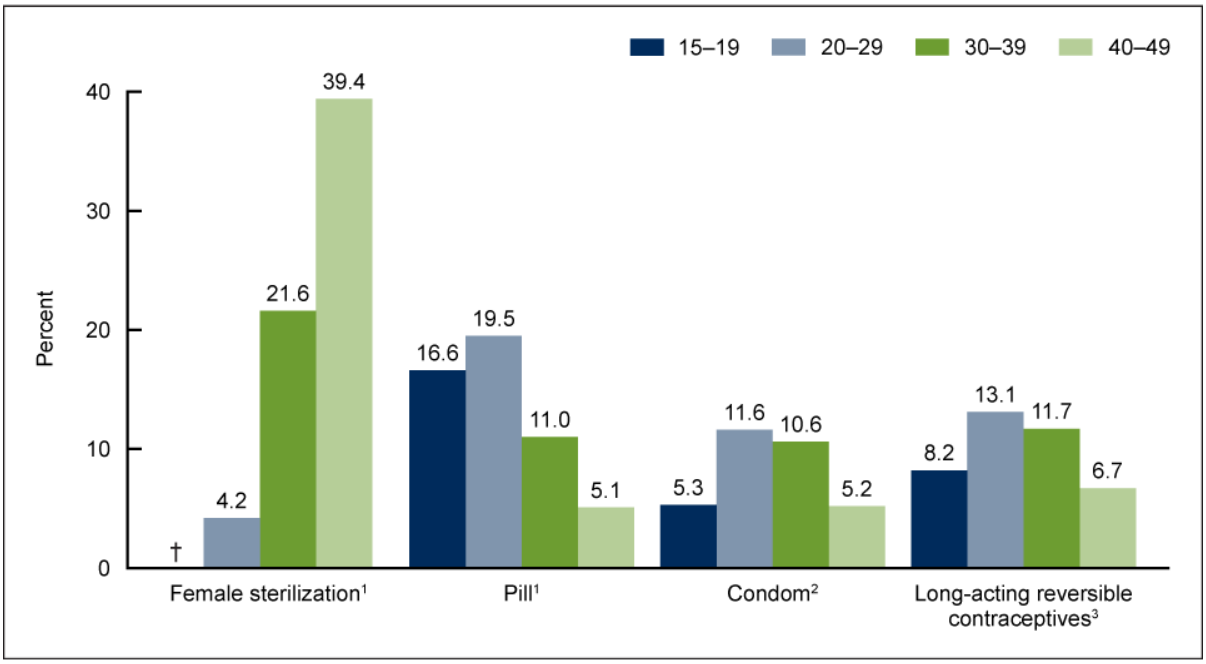
Beyond Texas, the burden of unintended pregnancies impacts all states in the U.S. and is estimated to cost upwards of $4.6 billion annually with 53 percent associated with "imperfect contraceptive adherence" (Trussel et al., 2013, p. 154). This study explains that if just 10 percent of women aged 20-29 switched from oral contraception to LARC, total unintended pregnancy costs would be reduced by $288 million each year (Trussel et al., 2013). When this is calculated as return on investment, it is estimated that for every dollar spent on any contraception the state saves over five dollars on costs associated with unintended pregnancy and infant care; LARC saves over seven dollars for every one dollar spent on the device further strengthening their cost-effectiveness (Sandoe, 2018).

LARC Trends in the U.S.

Since there is a considerable difference in the effectiveness and efficiency of various methods of contraception, it is important to understand the current utilization trends in the U.S. and beyond. The chart below (Figure 2.1) shows these trends by age group and by birth control method. The NCHS (2017) data reveals that LARC use for teens is less than half at 8.2 percent compared to the pill at 16.6 percent. Young women ages 20-29 are the highest users of LARC at 13.1 percent but still falls short of the pill at 19.5 percent. Women 30 and over are the only cohort where LARC use surpasses that of the pill, yet those 40 and over overwhelmingly favor permanent sterilization (NCHS, 2017). It is significant to note that although LARC use falls below utilization of the birth control pill, LARC use is greater than condom use in every age group. However, when the data for the pill is combined with condom use, LARC falls well

below in comparison which is concerning since all research indicates LARC is the most effective method for women of all ages.

Figure 2.1 LARC Utilization Trends in the U.S.



† No cases of female sterilization were found among those aged 15–19.
[1]Significant linear trend.
[2]Percentages for age groups 20–29 and 30–39 are significantly different from that for 15–19. Percentages for age groups 20–29 and 30–39 are significantly different from that for 40–49.
[3]Percentages for age groups 15–19 and 40–49 are significantly different from that for 20–29. Percentage for age group 30–39 is significantly different from that for 40–49.
NOTES: Women currently using more than one method are classified according to the most effective method they are using. Long-acting reversible contraceptives include contraceptive implants and intrauterine devices. Access data table for Figure 3 at: https://www.cdc.gov/nchs/data/databriefs/db327_tables-508.pdf#3.
SOURCE: NCHS, National Survey of Family Growth, 2015–2017.

Barriers to LARC Utilization

In addition to existing research on the efficacy, importance, and utilization of LARC, there is an abundance of literature on the barriers and challenges to increasing LARC use. While many barriers exist, the research concurs that cost of the device in the U.S. is the overwhelming culprit. A study by The University of Texas at Austin argues that barriers to LARC include "insufficient stock of available devices, inadequate reimbursement for devices, and denied insurance claims," the root cause of all these obstacles is the exorbitant cost per device in the U.S. (White et al., 2019, p. 4). With device costs that are 25 times higher than the same unit in

Europe, Australia, and Canada, LARC options in the U.S. are limited. Moreover, the FDA regulates all IUDs, hormonal and copper, as drugs rather than devices. This leads to a long and expensive approval process that includes requisite clinical trials that can cost up to $15 million (Beaton, 2017). The U.S. is left with only 5 total LARC choices that are one-size-fits-all as compared to over 22 variations in size, shape, and preference in Europe (Beaton, 2017). Consequently, IUD and LARC use in Europe is three times higher than the U.S., and this lack of American choice and market competition leaves options limited and exceptionally expensive.

LARC Billing and Payment

The "high up-front cost of LARC methods is one of the most important barriers to use," which means billing and payment innovation is imperative to overcome this barrier (Eisenberg, 2013, p. S59). Therefore, the first descriptive category of potential LARC innovation that was found in the research is LARC billing and payment. The three subcategories include LARC reimbursement rates, LARC acquisition costs, and unbundled LARC payments for immediate postpartum use.

1.1 Reimbursement Rates

Research explains that several states have issued guidelines for the reimbursement of LARC, "but there is no uniform coverage for it" (Strasser et al., 2016, p. 51). The application of these guidelines and LARC best practices was implemented in Illinois as reported by the Council of State Governments. The Illinois Family Planning Action Plan increased provider rates, allowed providers to bill separately for the LARC device and the insertion, allowed hospitals to provide immediate postpartum LARC with unbundled billing, and worked directly with one LARC manufacturer to launch a no upfront cost pilot (Miller, 2016). Illinois did not report data

and outcomes of the pilot, but it is anticipated that the fiscal impact of these policies and practices to be significant.

1.2 Acquisition Costs

Federal policy and the Affordable Care Act (ACA) require coverage of all FDA-approved contraceptives, including LARC; however, state mechanisms such as cost sharing and opt out provisions create loopholes that often shift LARC acquisition costs from plans to patients (Batra & Bird, 2015). States such as California and Colorado have implemented innovative up-front LARC cost policies that consist of low or no-cost LARC for low-income women and those at high risk of unintended pregnancy (Rickets et al., 2014). From 2008 to 2015, LARCs were inserted in more than 36,000 women in Colorado with no acquisition costs and the teen birth rate plummeted by 50 percent (CDPH, 2017). With an estimated cost savings of $69.6 million for averted births, the Colorado initiative has been an incredibly successful model, though not easy to duplicate as it depended on private funding from an anonymous donor (CDPH, 2017).

1.3 Unbundled Payments

ACOG recommends immediate postpartum LARC initiation as a clinical best practice to prevent repeat unintended pregnancy, yet the practice of bundling pregnancy costs often leaves patients without this option (ACOG, 2017). One survey of Medicaid patients revealed that "only about one-half of postpartum women who request an IUD actually obtain one after delivery" (Batra & Bird, 2015, p. 613). A Medicaid policy change in South Carolina to unbundle postpartum LARC payments has shown to increase postpartum LARC utilization in both teens and adults and decrease the frequency of repeat unintended pregnancy (Steenland, 2018). Other states such as Maryland, West Virginia, and Texas have also implemented innovative unbundled payment policies for immediate postpartum LARC.

LARC Operations

Health and Human Services OPA recommends a "client-centered approach" to contraception that includes the established evidence-based best practices of same-day insertion and immediate postpartum use to all women who choose LARC (Strasser, 2016, p. 25). This requires an adequate supply and inventory of LARC and therefore, the second descriptive category of potential LARC innovation that was found in the research is LARC operations. The three subcategories for operations include same-day LARC insertion, immediate postpartum use, and LARC supply and inventory.

2.1 Same-day Insertion

The problem with LARC under-utilization in the U.S. can be directly tied to existing public policies that maintain the status quo. ACOG recommends LARC practices that include same-day insertion, immediate postpartum insertion, and offered to all women under age 21 (Castleberry et al., 2019). Yet the research discloses that state policies have generally not aligned with these and other clinical best practices. Furthermore, states that have implemented policies to address the best practice of same-day insertion often see a gap between policy and practice due to the lack of an adequate LARC supply and inventory.

2.2 Immediate Postpartum Use

Clinical guidance issued by ACOG, CDC, and WHO concur that offering immediate postpartum LARC, after delivery or abortion, is an evidence-based best practice that greatly diminishes rates of repeat unintended pregnancy, including rapid repeat pregnancies (Strasser, 2016). However, it is also important to balance the benefits of immediate postpartum LARC use without exhibiting coercive LARC practices. Mann et al. (2019) conducted a qualitative research study to analyze patient perceptions to immediate postpartum LARC use and those surveyed

offer a glimpse into the side of the patient when dealing with LARC innovation. South Carolina launched a pilot to increase the utilization of postpartum LARC and while it increased LARC use in this subset of women, "some women felt pressured to choose immediate postpartum LARC," and suggested it would be more helpful if providers started contraceptive counseling early in prenatal care and discuss it at multiple visits to make a more informed decision (Mann et al., 2019, p. 168). Targeted LARC education and outreach to both providers and patients could also help to mitigate the concerns of coercive LARC practices.

2.3 Supply and Inventory

Providing same-day LARC insertion and immediate postpartum LARC requires an ample supply and inventory of LARC devices to fully implement and because of the exorbitant cost of devices, the best practice often falls short. Qualitative research "demonstrates that one of the most common reasons that women who desire LARC do not receive one is the requirement to return for an additional visit for placement" and this "prevents women from accessing their preferred contraceptive method, possibly increasing their risk of unintended pregnancy" (Castleberry et al., 2019, p. 15). Innovative LARC payment policy initiatives, such as what was implemented in California and Colorado, are imperative to mitigate the overwhelming burden of the high acquisition cost of LARC devices. The return on investment proves it is well worth it.

LARC Training

Although federal Medicaid policy encourages LARC and offers guidance on billing, payment, and operations, "state policies frequently fail to address key aspects of care, including counseling, follow-up care, and removal, resulting in highly variable state-level practices" (Vela et al., 2018, p. 137). Therefore, the third descriptive category of potential LARC innovation that was found in the research is LARC training. The three subcategories for training include LARC

clinical guidelines, LARC provider education, and LARC efficacy awareness.

3.1 Clinical Guidelines

ACOG, CDC, WHO, and the American Academy of Pediatrics (AAP) agree that LARC provides the highest level of effectiveness of any reversible method of contraception, are considered the first-line contraception for adolescents, and all offer evidence-based clinical guidelines and resources on LARC best practices (Strasser, 2016). Their guidelines recommend three main best practice areas – LARC counseling, LARC encouragement, and LARC insertion best practices, including same-day insertion, for all appropriate candidates. ACOG also offers a comprehensive LARC webpage that offers guidelines on same-day insertion, immediate postpartum use, administrative and infrastructure support, LARC insertion and removal trainings, patient materials, fact sheets, and clinical challenges (ACOG, 2020).

3.2 Provider Education

Provider education is critical to ensure practitioners offer "patient-centered LARC education in their preferred language, method-specific counseling, and to build trust between patient and provider" (Texas LARC Toolkit, 2018, p. 17). ACOG advocates for public policy that "aligns LARC practice with published evidence to improve access for all women," and suggests "continuing education for physicians, patient education and outreach, and advocacy to improve insurance coverage and reimbursement" (Castleberry et al., 2019, p. 123). Further studies connect the impact of prohibitive state regulation to lack of LARC understanding and access. Academic research argues state policies can impede LARC use, impact insurance coverage, regulate which providers can initiate LARC methods, and impact LARC eligibility in special populations (Batra & Bird, 2015). Providers who are educated and well-informed can

more easily navigate the complex system of barriers to drive progress and improve access and use of LARC.

3.3 Efficacy Awareness

It is important to understand there are provider, patient, and cultural barriers when it comes to LARC knowledge, particularly for adolescent LARC use and efficacy (Coles & Shubkin, 2018). It is typically well-known that LARC is highly-effective at preventing pregnancy with a failure rate of less than one percent, yet research trends explain that immediate postpartum LARC for adolescents is still under-utilized, with two notable exceptions – academic/teaching hospitals and providers who work at both the state and facility level (Okoroh et al., 2018). This suggests that beyond efficacy awareness, "recruiting, training, engaging, and supporting provider champions, as facilitators, with influence at state and facility levels, is an important component of a multipart strategy for increasing successful implementation of state-level Medicaid reform policies" for LARC (Okoroh et al., 2018, p. 590).

LARC Outreach

Finally, in order to share evidence-based practices and innovative policy approaches regarding LARC billing, operations, and training, targeted outreach is necessary to inform providers, patients, and payers. Consequently, the fourth descriptive category of potential LARC innovation that was found in the research is LARC outreach. The three subcategories for outreach include LARC outreach to providers, LARC outreach to patients, and LARC outreach to insurance/payer.

4.1 Outreach to Providers

A randomized trial involving family planning clinics in the U.S. with an emphasis on provider outreach and patient-centered counseling revealed the clinics who received the outreach and training had higher LARC initiation compared to the clinics that did not receive the training. The outreach included "educational training for clinic staff, hands-on IUD insertion practicum for clinicians, counseling role-playing for health educators, and billing technical assistance for clinic managers" (Strasser, 2016, p. 38). Furthermore, "researchers found that the pregnancy incidence among participants was significantly reduced by nearly half among participants attending family planning visits," which suggests provider outreach can drive significant outcomes (CDC, 2018, p. 4). However, LARC outreach must always come from a patient-centered approach that emphasizes contraceptive choice.

4.2 Outreach to Patients

A multistate qualitative study by the Association of State and Territorial Health Officials (ASTHO) analyzed state-identified strategies to increase uptake of LARC in 13 states and provided outreach policy initiatives that have potential to improve access to LARC (Kroelinger et al., 2018). Outreach strategies identified in this study include disseminating patient-friendly resources on LARC, distributing resources on the safety and efficacy of all contraceptive methods, developing comprehensive LARC toolkits, promoting public education campaigns on LARC, implementing social media initiatives, and sharing success stories on immediate postpartum LARC (Kroelinger et al., 2018). Moreover, Strasser (2016) argues that second to cost, the next greatest barrier to LARC uptake is the lack of "women's knowledge of LARC method safety and acceptability, and their expectations about side effects and placements" (p.

29). Side effects are generally mild and temporary, but "many women did not anticipate them, potentially due to inadequate counseling from providers" (Strasser, 2016, p. 12).

4.3 Outreach to Insurance/Payer

In addition to outreach to providers and patients, outreach to insurance/payer is equally critical to increase awareness of the efficacy and cost-effectiveness of LARC. A CDC evidence summary on initiatives to prevent unintended pregnancy explains that providers need to be reimbursed for complete LARC services that include "screening for pregnancy intention; tiered contraception counseling; insertion, removal, replacement, or reinsertion of long-acting reversible contraceptives or other contraceptive devices, and follow-up" (CDC, 2015, p. 1). Furthermore, without full funding and reimbursement for LARC, same-day insertion, and other contraception options, "rates of unintended pregnancies and abortions in the United States could be nearly 50% higher than current levels" which are already exceedingly high (CDC, 2015, p. 2).

LARC Innovation to Overcome Barriers

Literature on the LARC policy problem is plentiful; however, there is a growing body of research that explores potential innovation and solutions to overcome these issues. A study by the Center for Medicaid and CHIP Services (CMCS) examined family planning and LARC policy in several states and organized the findings into five categories of best practices. These broad categories include timely patient-centered contraceptive coverage, raised payment rates, unbundled payments for device and insertion, supply management, and removal of administrative burdens (Wachino, 2016). Another best practice study by the Jacob's Institute of Women's Health revealed similar results. Their top five factors to improve access to LARC include controlling the cost of the device, increasing patient education, training more providers, and removing insurance and managed plan administrative burdens (Strasser et al., 2016).

Conceptual Framework Overview

Based on the literature review of LARC policy, practice, and innovation, the conceptual framework for this paper is descriptive categories (Shields & Rangarajan, 2013) that were compiled from categorical themes and trends noted in the existing research. Four main descriptive categories have been developed (Table 2.2) with three sub-categories for each. The four broad groupings include the LARC policies and best practices of billing and payment, operations, training, and outreach. The literature reviewed suggests these categories that will be studied through content analysis of state policies are the main indicators of promising LARC innovation that lead to increased utilization and improved maternal health outcomes. Analyzing the categorical dimensions of state policy and practice will help to bridge the gap between academic theory and practice in the field to examine and organize the connection between innovation and outcomes.

Table 2.2 Conceptual Framework

Title: *Beyond Policy Innovation: Analyzing Access to Long-Acting Reversible Contraception* **Purpose:** The purpose of this research is to describe the innovative policies and practices states have implemented to improve access to long-active reversible contraception (LARC) and the outcomes of this innovation.	
Descriptive Category	**Supporting Literature**
1. LARC Billing and Payment	
1.1 Reimbursement Rates	ACOG (2017); Batra & Bird (2015); Beaton (2017); Castleberry et al. (2019); Guyer et al. (2017); Kroelinger et al. (2018); McKinney (2017); Miller (2016); Strasser et al. (2016); Wachino (2016)
1.2 Acquisition Costs	Beaton (2017); Miller (2016); Sandoe (2018); Strasser et al. (2016); Wachino (2016); White et al. (2019)

1.3 Unbundled Payments	ACOG (2017); Castleberry et al. (2019); McKinney (2017); Miller (2016); Steener (2018); Strasser et al. (2016); Wachino (2016)
2. LARC Operations	
2.1 Same-day Insertion	ACOG (2017); Batra & Bird (2015); Castleberry et al. (2019); Strasser et al. (2016); Trussell et al. (2013); Wachino 2016); White et al. (2019)
2.2 Immediate Postpartum Use	ACOG (2017); Castleberry et al. (2019); Mann et al. (2019; McKinney (2017); Miller (2016); Wachino (2016)
2.3 Supply and Inventory	Batra & Bird (2015); McKinney (2017); Miller (2016); Strasser et al. (2016); Wachino (2016); White et al. (2019)
3. LARC Training	
3.1 Clinical Guidelines	ACOG (2017); Kroelinger et al. (2018); McKinney (2017); Strasser et al. (2016); Sundstrom et al. (2016); White et al. (2019)
3.2 Financial Education	Kroelinger et al. (2018); McKinney (2017); Miller (2016); Sundstrom et al. (2016); White et al. (2019)
3.3 Efficacy Awareness	Castleberry et al. (2019); McKinney (2017); Okoroh et al. (2018); Strasser et al. (2016); Sundstrom et al. (2016); Vela et al. (2018)
4. LARC Outreach	
4.1 Outreach to Providers	Beaton (2017); Castleberry et al. (2019); Coles & Shubukin (2018); Kroelinger et al. (2018); McKinney (2017); Miller (2016); Okoroh et al. (2018); Sandoe (2018); Strasser et al. (2016); Sundstrom et al. (2016); Vela et al. (2018)
4.2 Outreach to Patients	Beaton (2017); Castleberry et al. (2019); Coles & Shubukin (2018); Kroelinger et al. (2018); Mann et al. (2019); Sandoe (2018); Strasser et al. (2016); Sundstrom et al. (2016); Vela et al. (2018)

4.3 Outreach to Insurance/Payer	ACOG (2017); Batra & Bird (2015); Castleberry et al. (2019); McKinney (2017); Miller (2016); Sandoe (2018); Strasser et al. (2016)

Chapter Summary

This chapter provided a comprehensive literature review that discussed LARC efficacy, trends, barriers, and innovation. Researchers agree that LARC is a critical component to decrease the prevalence of unintended pregnancy and improve maternal health outcomes, and their findings concur that LARC policy and practice need significant improvements and innovation to increase LARC utilization. The conceptual framework describes four distinct categories that have resulted in increased LARC access and use. These categories of innovation include LARC billing and payment, operations, training, and outreach and will be examined in depth in subsequent chapters.

Chapter 3: Research Methodology

Chapter Purpose

The purpose of this chapter is to explain the research methodology used to gather data on various innovative policies and practices states have implemented to improve access to LARC and the outcomes of the innovation. This descriptive research purpose requires categorization, "which is a basic function in science and practice," and categories of LARC innovation are analyzed, sorted, and coded to make sense of the situation (Shields & Rangarajan, 2013, p. 9). This chapter includes information on the research sources, research participants, research operationalization, content analysis as the method of data collection, strengths and weaknesses of the methodology, research procedure, description of data sources, and methodology summary. This chapter also concludes with the operationalization table of the research methods.

Research Sources

This research involves document analysis of a selection of Medicaid State Plans, family planning policy manuals, LARC toolkits and guidelines, and other applicable state documents available online that provide information on access to LARC and contraception. All documents analyzed are official public state records and are found on each state's respective website. Some states organize their family planning and contraception programs in their department of health and some in state health and human services agencies. However, all states provide the public with some type of women's health and family planning program for those living under the

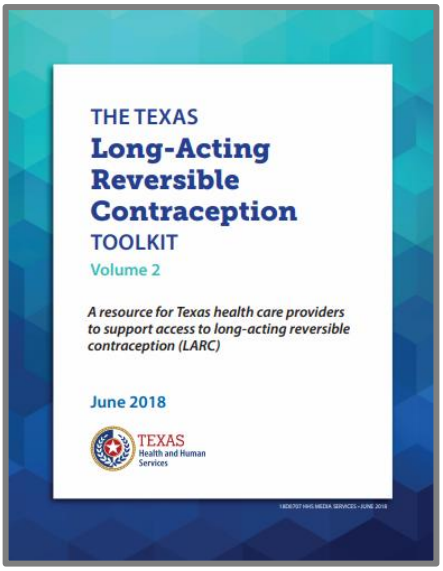


Figure 3.1 Texas LARC Toolkit (source: hhs.texas.gov)

federal poverty line, and all maintain information on services and benefits, including LARC and contraception, on their state websites.

Research Participants

The sampling technique used to identify the states included in the research sample was stratified random sampling. Although Texas was chosen as a purposive state and one focus of the comparative analysis, the other states were randomly chosen based on three stratified groups. A review of the literature indicated that one main variable that determines the level of funding, innovation, pilot programs, and alternative approaches to healthcare models is whether states have elected to expand Medicaid. According to the National Academy for State Health Policy (2019) three results have occurred. First, 28 states have fully expanded Medicaid, 14 states have not expanded Medicaid, and 9 states have expanded Medicaid but with an alternative to traditional expansion (NASHP, 2019). To obtain a highly representative sample of states from each group, half of each cohort was selected using a random number generator. Therefore, the sample includes 14 states with expansion, 7 states without, and 4 states with alternative expansion for a total of 25 stratified sampled states.

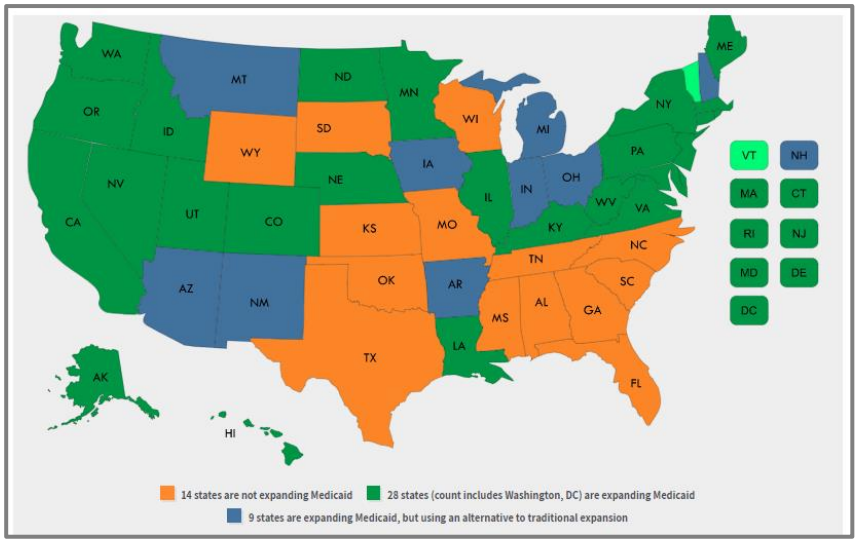


Figure 3.2 States with Expanded Medicaid (source: NASHP.org)

Following this sampling methodology, the states included in the research sample are as follows. The 14 states with Medicaid expansion include Louisiana, Colorado, Illinois, New York, California,

Minnesota, Oregon, Kentucky, Virginia, Utah, Pennsylvania, Massachusetts, Maryland, and West Virginia. The 7 states without Medicaid expansion include Texas, Florida, South Carolina, Wisconsin, Georgia, Wyoming, and Tennessee. The four states with alternative expansion of Medicaid include Ohio, New Mexico, Arizona, and Michigan. It is important to note that generally speaking, states that have expanded Medicaid tend to have liberal state governments and states that have not expanded Medicaid tend to have conservative state governments.

Operationalization

The methodology for this proposed research project is content analysis. Using a coding operation, the content of each sampled state's Medicaid State Plan, family planning policy manual, and LARC guidelines were reviewed for predetermined keywords and variables that measure each of the categories in the conceptual framework. The federal Centers for Medicare and Medicaid Services (CMS) requires each state to have and maintain a current Medicaid State Plan and although "states have significant flexibility under Medicaid regarding the provision of contraception and LARC," they are required to report these provisions in the state plans and state plan amendments (CMS, 2019, p. 3). Furthermore, under the Affordable Care Act (ACA) of 2010, states are obligated to cover contraceptive methods, including LARC with some exceptions, and to maintain policies regarding these benefits and exclusions (CMS, 2019).

Therefore, there are Medicaid state plans and family planning policy manuals for each state in the U.S. to code and review for the purposes of this research project. Some states also have LARC-specific toolkits and supplemental guidelines. Another set of documents to be coded are CMS State Plan Amendments (SPA). Each time a state alters a Medicaid state plan policy, they are required to submit an SPA to CMS and issue an official SPA bulletin. One more set of documents is Medicaid family planning waiver approvals that some states have on file. If

sampled states have such bulletins or approval documents that were issued regarding contraception and LARC, those documents will also be coded and reviewed.

The coding operation involved analysis of each of the descriptive categories to identify keywords as evidence of LARC policy, practice, and innovation in each sampled state document (Table 3.1). Keywords such as innovation, initiative, pilot, and best practices were explored in all documents, but specific categorical keywords in the context of LARC were looked for based on the descriptive category. First, the following keywords were searched for the LARC billing and payment categories: reimbursement, rates, payments, funding, rates hearing, claim, stock, supply, low-cost, no cost, bulk purchase, sliding scale, bundled, separate payment, device, insertion, claims, and billing. Second, the following keywords were searched for the LARC operations categories: timely, insertion, best practice, guidelines, same-day, unused, immediate, postpartum, unbundled, repeat pregnancy, rapid repeat, pregnancy, supply, inventory, stock, acquisition, device, and rationing.

Third, the following keywords were searched for the LARC training categories: clinical, guidelines, best practice, ACOG, recommended, evidence, education, insertion, training, options, counseling, efficacy, effectiveness, superior, first choice, highly-effective, and pregnancy. Finally, the following keywords were searched for the LARC outreach categories: communication, informed consent, efficacy, cost-effective, unintended pregnancy, preferred, methods, highly-effective, side effects, options, choice, pregnancy, payer, third party, Medicaid, denied claims, manufacturers, and same-day. The operationalization table (Table 3.2) organizes and connects the complete set of keywords that were used as variables to measure each of the descriptive categories.

The documents and content analyzed had either all, some, few, or none of the predetermined innovation keywords per category. Therefore, there were 18 possible total innovation keywords of the coding operation per category. If 15 or more categorical keywords were identified in the document, it was classified as "complete evidence" for that category. If 10 to 14 of the categorical keywords were identified in the document, it was classified as "sufficient evidence." If 5 to 9 of the categorical keywords were identified in the document, it was classified as "limited evidence." Finally, if four or less of the categorical keywords were identified, that category was classified as "no evidence." Some keywords were omitted if it was determined that the keywords were not applicable to LARC policy in the documents.

Content Analysis

Krippendorff (2019) defines content analysis as "a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use" (p. 24). It is important to note that content analysis is a systematic examination method that "follows the standards of the scientific method," includes objectivity, design, and validity, and is "one of the most important but complex research methodologies in the social sciences" (Neuendorf, 2017, p. 17). Furthermore, Johnson (2014) suggests content analysis works best when "the research question is about making sense of communication" and in this case the communication is state plan documents and policy handbooks regarding LARC access and utilization (p. 95). The key to effective content analysis is a well-designed coding rubric that is applied consistently with diligent objectivity and keen attention to detail. Yet like with all research methods, there are strengths and weaknesses to this chosen methodology in terms of producing valid and reliable data.

Strengths of Methodology

Babbie (2017) refers to content analysis as an "unobtrusive research method" that is flexible in its "study of recorded human communication" (p. 333). Content analysis is ideal for independent study and does not require human subject protections or approval by an Institutional Review Board (IRB). It is economical in terms of both time and money and as long as the researcher has access to the internet, nearly any document, publication, and other applicable content can be easily found online (Babbie, 2017). Content analysis is also forgiving and unlike field research and surveys, it "has the advantage of allowing the correction of errors" (Babbie, 2017, p. 343). Content analysis capability has increased in popularity and expediency due to the "rapid advancement in computer-aided text analysis (CATA) software" (Neuendorf, 2017, p. 3). Coding content can be achieved quickly, accurately, reliably, and automatically by performing keyword searches using widely-available computer software and search engines. Moreover, document analysis is efficient, available, stable, exact, and provides broad coverage as a qualitative research method (Bowen, 2009).

Weaknesses of Methodology

Content analysis also comes with some inevitable limitations and disadvantages. One weakness is its limitation to "the examination of recorded communication" which omits other communication such as oral or informal that may not be documented in the public record (Babbie, 2017, p. 344). Another disadvantage involves the difference between policy and practice in the healthcare setting. This research project studies the policies that govern LARC access by state. Yet without surveying actual providers and patients, the practices may not always align with the policies analyzed. Anecdotal evidence suggests LARC devices are not consistently offered to women regardless of the state policy in place. However, myths and

misconceptions also exist regarding content analysis as a valid, academic, and scientific research method. Content analysis is not inherently simplistic and can be as modest or complex as the researcher designs it to be. It should be held to "the same academic standards of methodological rigor as they do other social science methods" (Neuendorf, 2017, p. 5). Furthermore, if executed with precision and objectivity, the potential flaws of this method can be mitigated.

Research Procedure

The first step to initiate this research project was to identify the states in the research sample. Using the defined stratified random sampling technique, the states were organized alphabetically into three cohorts and given a number. A random number generator (random.org) chose the states by number per cohort which resulted in a stratified sample of 25 states. Next, each state's family planning program website was identified and bookmarked. Within each state website, the search continued for LARC-specific content including Medicaid State Plans, family planning policy manuals and handbooks, and any other relevant state LARC policy documents. The documents gathered per state were then carefully coded using a standardized coding rubric (Table 3.1). Using a keyword search function, each document was examined and coded to identify the keywords as they pertain to LARC for each of the four categories of innovation.

Each of the terms was searched for and the frequency of each word was indicated on the coding rubric. There are three levels of analysis for each state document based on keyword frequency – by category, by subcategory, and by term. Based on the frequency, each of these levels of analysis will be recorded and graded as either complete, sufficient, limited, or no evidence. This data will be summarized and graphed in chapter 4 to reveal the comprehensive picture of LARC innovation by each state in the three cohorts. The data will then be compared

against approximate LARC utilization and unintended pregnancy rates by state to determine if there is a correlation between LARC innovation and maternal health outcomes in the U.S.

Table 3.1 Coding Rubric

State:	
Website URL:	
Medicaid Policy: Expansion | Non-expansion | Alternative Expansion	
Frequency of Keywords Per Category (Complete, Sufficient, Limited, No Evidence)	**Frequency**
1. LARC Billing and Payment	
Reimbursement Rates: reimbursement, rates, payments, funding, rates hearing, claims	
Acquisition Costs: stock, supply, low-cost, no cost, bulk purchase, sliding scale	
Unbundled Payments: bundled, separate, device, insertion, claims, billing	
2. LARC Operations	
Same-day Insertion: timely, insertion, best practice, guidelines, same-day, unused	
Immediate Postpartum Use: immediate, postpartum, unbundled, repeat pregnancy, rapid repeat, pregnancy	
Supply and Inventory: supply, inventory, stock, acquisition, device, rationing	
3. LARC Training	
Clinical Guidelines: clinical, guidelines, best practice, ACOG, recommended, evidence	
Provider Education: education, insertion, training, guidance, options, counseling	
Efficacy Awareness: efficacy, effectiveness, superior, first choice, highly-effective, pregnancy	
4. LARC Outreach	
Outreach to Providers: communication, informed consent, efficacy, cost-effective, unintended pregnancy, preferred	
Outreach to Patients: methods, highly effective, side effects, options, choice, pregnancy	
Outreach to Insurance/Payer: payer, third party, Medicaid, denied claims, manufacturers, same-day	

Description of Data Sources

The documents gathered to code and analyze are Medicaid state plans, policy and procedure manuals, state family planning program policy handbooks, and LARC toolkits for each state in the sample. Only official state websites were used to ensure the documents analyzed are verified primary sources. All sampled states offer some type of online policy and procedure manual that references family planning and LARC services, operations, and billing. However, only some states provide additional supplemental information regarding LARC policies and initiatives, including LARC training, education and outreach. See Table 3.2 for a complete list of states and the specific documents coded and analyzed for this research.

Table 3.2 States in Research Sample and their LARC Documents and Content

Medicaid Expansion	State Documents Coded and Analyzed
California	• California Family Planning, Access, Care, and Treatment (Family PACT) Program Standards, 2019 • California Medicaid State Plan Amendment, 2019
Colorado	• Colorado Family Planning Program Administrative Manual • Department of Public Health Family Planning LARC Initiative, 2017
Illinois	• Illinois Family Planning Action Plan, 2014 • Department of Healthcare and Family Services Policy and Procedures for Medical Services, 2016
Kentucky	• Kentucky Department for Medicaid Services Family Planning Services Manual, 2019
Louisiana	• Louisiana Take Charge Plus Family Planning Services Provider Manual, 2014 • Reproductive Health Program LARC in Louisiana, 2019
Maryland	• Maryland OB/GYN/Family Planning Provider Services and Billing Manual, 2012 • The Maryland Immediate Postpartum LARC Toolkit, 2020
Massachusetts	• MassHealth Family Planning Agency Manual, 2014 • MassHealth LARC Billing Instructions, 2018
Minnesota	• Minnesota Family Planning Provider Manual, 2017 • Minnesota Medicaid State Plan Amendment, 2017
New York	• New York State Medicaid Family Planning Services Manual, 2019 • New York Medicaid State Plan Amendment, 2018

Oregon	• Oregon Reproductive Health Program Manual, 2019 • Oregon Section 1115 Family Planning Waiver, 2016
Pennsylvania	• Pennsylvania Department of Human Services Family Planning Services Bulletin, 2015 • Pennsylvania Medicaid State Plan Amendment, 2015
Utah	• Utah Medicaid Provider Physician Services Manual, 2019
Virginia	• Virginia Physician/Practitioner Manual, 2020 • Virginia Postpartum LARC Toolkit, 2017
West Virginia	• West Virginia Family Planning Program Policy Manual, 2019 • West Virginia Postpartum LARC Toolkit, 2017
No Expansion	**State Documents Coded and Analyzed**
Florida	• Florida Immediate Postpartum LARC Health Plan Update, 2017 • Florida Section 1115 Family Planning Waiver, 2019
Georgia	• Georgia's Title X Family Planning Services Manual, 2006 • Georgia Section 1115 Family Planning Waiver, 2019
South Carolina	• South Carolina Postpartum LARC Toolkit
Tennessee	• Tennessee Family Planning Program • Tennessee Long-Acting Birth Control Information Act, 2018
Texas	• Texas Family Planning Program Policy Manual, 2019 • The Texas LARC Toolkit, Volume 2, 2018
Wisconsin	• Wisconsin Family Planning Only Services Program, 2020 • Wisconsin Division of Reproductive and Population Health Access to IUDs and Contraceptive Implants, 2019
Wyoming	• Wyoming Family Planning Resources, 2020 • Wyoming Section 1115 Family Planning Waiver, 2020
Alternative Expansion	**State Documents Coded and Analyzed**
Arizona	• Arizona Family Planning Policy Manual, 2018 • Arizona Family Planning and LARC Provider Update, 2018
Michigan	• Michigan Title X Family Planning Program Standards and Guidelines Manual, 2018 • Michigan Family Planning Program Requirements, 2016
New Mexico	• New Mexico Family Planning Program Guidelines, 2019 • New Mexico LARC Provider Update, 2019
Ohio	• Ohio Title X Reproductive Health and Wellness Program Clinical Services and Protocols, 2020 • Ohio Client-Centered Contraceptive Care Change Package, 2017

Table 3.3 Operationalization Table

Title: *Beyond Policy Innovation: Analyzing Access to Long-Acting Reversible Contraception*

Purpose: The purpose of this research is to describe the innovative policies and practices states have implemented to improve access to long-active reversible contraception (LARC) and the outcomes of this innovation.

Content Analysis Methodology: There are 18 total possible keywords per category. If 15 or more categorical keywords are identified in the document pertaining to LARC, it will be classified as "complete evidence" for that category. If 10-14 of the categorical keywords are identified in the document, it will be classified as "sufficient evidence." If 5-9 of the categorical keywords are identified in the document, it will be classified as "limited evidence." Finally, if 4 or less of the categorical keywords are identified, that category will be classified as "no evidence."

Category	**Keywords/Variable that Measure Category**
1. LARC Billing and Payment	
1.1 Reimbursement Rates	Reimbursement, rates, payments, funding, rates hearing, claims
1.2 Acquisition Costs	Stock, supply, low-cost, no-cost, bulk purchase, sliding scale
1.3 Unbundled Payments	Bundled, separate, device, insertion, claims, billing
2. LARC Operations	
2.1 Same-day Insertion	Timely, insertion, best practice, guidelines, same-day, unused
2.2 Immediate Postpartum Use	Immediate, postpartum, unbundled, repeat pregnancy, rapid repeat, pregnancy
2.3 Supply and Inventory	Supply, inventory, stock, acquisition, device, rationing

3. LARC Training	
3.1 Clinical Guidelines	Clinical, guidelines, best practice, ACOG, recommended, evidence
3.2 Provider Education	Education, insertion, training, guidance, options, counseling
3.3 Efficacy Awareness	Efficacy, effectiveness, superior, first choice, highly-effective, pregnancy
4. LARC Outreach	
4.1 Outreach to Providers	Communication, informed consent, efficacy, cost-effective, unintended pregnancy, preferred
4.2 Outreach to Patients	Methods, highly-effective, side effects, options, choice, pregnancy
4.3 Outreach to Insurance/Payer	Payer, third-party, Medicaid, denied claims, manufacturers, same-day insertion

Chapter Summary

This chapter discussed information on the research sources, research participants, research operationalization, content analysis as the method of data collection, strengths and weaknesses of the methodology, research procedure, description of data sources, and methodology summary. The content analysis methodology was chosen to gather, code, and analyze data on various innovative policies and practices states have implemented to improve access to LARC, and this analysis serves to validate and confirm this methodology as reliable and scientific. This chapter also includes the keyword coding rubric, a complete list of states in the research sample with their LARC documents and content, and concludes with the operationalization table of the descriptive analysis research methodology.

Chapter 4: Research Results

Chapter Purpose

The purpose of this chapter is to present the results and findings of the content analysis of LARC innovation policies of the 25-state research sample. Each section of this chapter presents the findings related to each descriptive category and the results of the coding operation. In each of the four categories, a total of 18 keywords were coded for LARC policy innovation. Therefore, if 15 or more keywords are identified in the appropriate LARC context, the result is complete evidence for LARC innovation in that category. If 10 to 14 keywords are identified, the result is sufficient evidence. The result is limited evidence if 5 to 9 keywords are identified, and anything less than 5 keywords is considered no evidence. These results are explained, graphed, and analyzed in this chapter.

Results

4.1 LARC Billing and Payment

The first category coded was LARC billing and payment and included the subcategories of reimbursement rates, acquisition costs, and unbundled payments. Of all 25 states, four (16%) showed complete evidence of LARC billing and payment policy innovation – Oregon, West Virginia, Michigan, and Ohio. Fourteen states (56%) had sufficient evidence, seven states (28%) had limited evidence, and none were found to have no evidence of LARC billing and payment innovation keywords. The subcategory of reimbursement rates had the most identified keywords, and acquisition costs had the least identified keywords per subcategory in the research sample. The four states with complete evidence had a balanced representation with roughly the same frequency of keywords of all three subcategories. See tables 4.1(a) and 4.1(b) for corresponding data on LARC billing and payment.

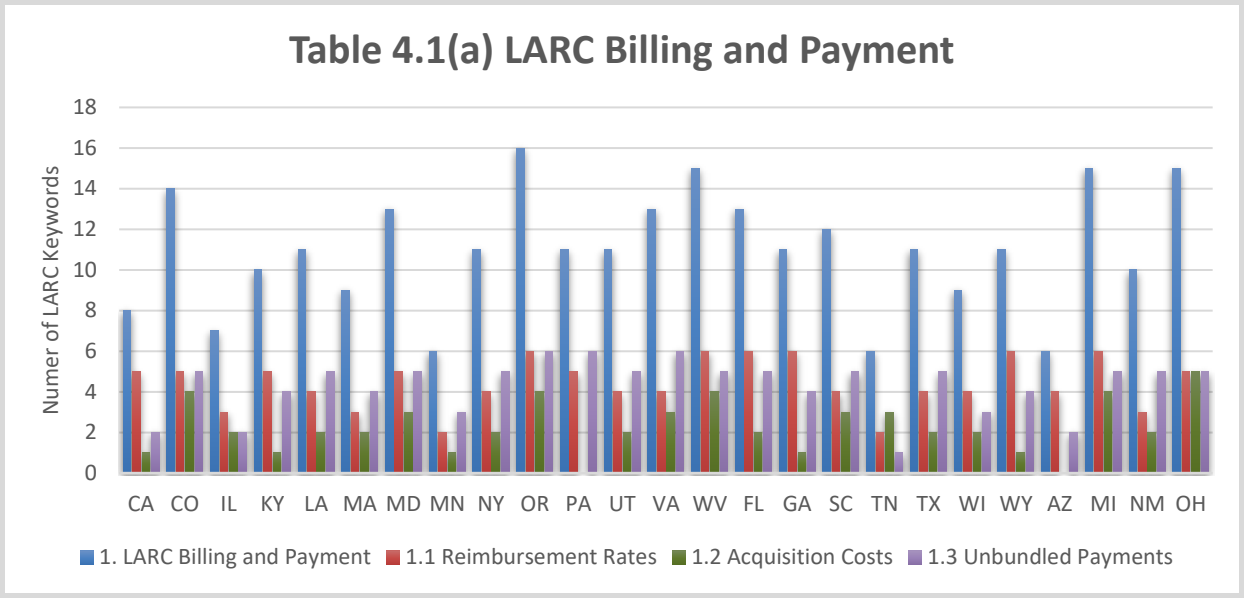


Table 4.1(b) LARC Billing and Payment Results

Nature of Evidence	States	Frequency	Percentage
Complete Evidence	OH, WV, MI, OR	4	16%
Sufficient Evidence	MD, CO, TX, VA, SC, NM, NY, FL, PA, WY, GA, KY, LA, UT	14	56%
Limited Evidence	CA, IL, WI, AZ, TN, MA, MN	7	28%
No Evidence	None	0	0%

4.2 LARC Operations

The second category coded was LARC operations and included the subcategories of same-day insertion, immediate postpartum use, and supply and inventory. Overall, this was the lowest scoring category across the research sample and no states showed complete evidence of LARC operational policy innovation. Ten states (40%) had sufficient evidence, twelve (48%) had limited evidence, and three states (12%) were found to have no evidence of LARC

operational innovation keywords. All three subcategories were comparable in their representation of identified keywords in the research sample. The states with sufficient evidence had a balanced representation with roughly the same evidence of keywords across all three subcategories. See tables 4.2(a) and 4.2(b) for corresponding data on LARC operations.

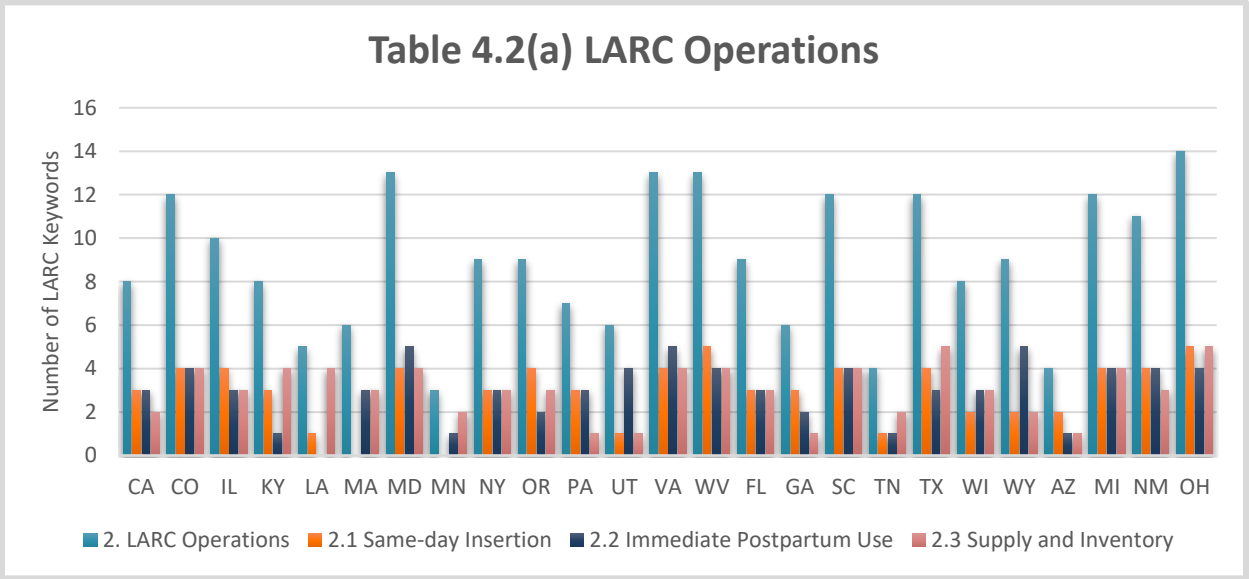


Table 4.2(b) LARC Operations

Nature of Evidence	States	Frequency	Percentage
Complete Evidence	None	0	0%
Sufficient Evidence	OH, MD, WV, CO, TX, MI, VA, SC, NM, IL	10	40%
Limited Evidence	OR, NY, FL, PA, WY, CA, GA, KY, LA, WI, MA, UT	12	48%
No Evidence	AZ, TN, MN	3	12%

4.3 LARC Training

The third category coded was LARC training and included the subcategories of clinical guidelines, provider education, and efficacy awareness. Of all 25 states, six (24%) had the result of complete evidence of LARC training policy innovation – Colorado, Maryland, Virginia, South Carolina, Michigan, and Ohio. Ten states (40%) had sufficient evidence, eight (32%) had limited evidence, and one state (4%) was found to have no evidence of LARC training innovation keywords. The subcategory of provider education had the most identified keywords and efficacy awareness had the least identified keywords per subcategory in the research sample. This is also true of the six states with complete evidence with higher evidence rates of provider education and lower evidence rates of efficacy awareness. See tables 4.3(a) and 4.3(b) for corresponding data on LARC training.

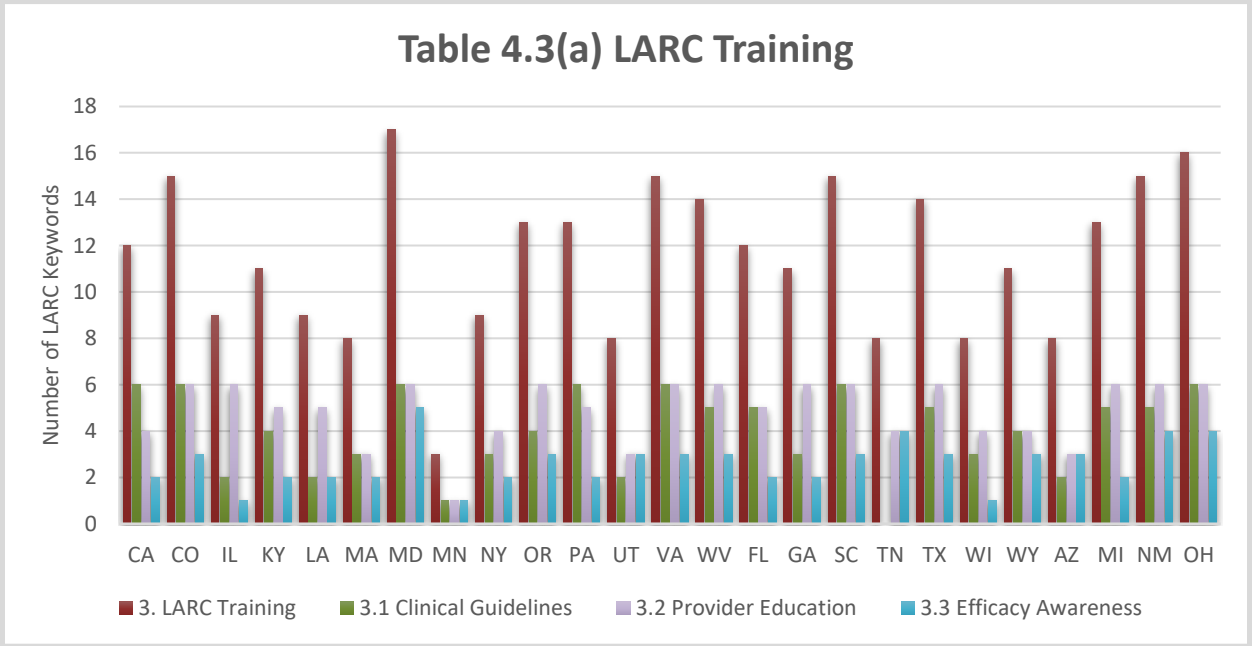


Table 4.3(b) LARC Training

Nature of Evidence	States	Frequency	Percentage
Complete Evidence	OH, MD, CO, VA, SC, NM	6	24%
Sufficient Evidence	WV, TX, MI, OR, FL, PA, WY, CA, GA, KY	10	40%
Limited Evidence	NY, IL, LA, WI, MA, UT, AZ, TN	8	32%
No Evidence	MN	1	4%

4.4 LARC Outreach

The fourth category coded was LARC outreach and included the subcategories of outreach to providers, outreach to patients, and outreach to insurance/payer. Of all 25 states, three (12%) had the result of complete evidence of LARC outreach policy innovation – Maryland, Texas, and Ohio. Eight states (32%) had sufficient evidence, thirteen (52%) had limited evidence, and one state (4%) was found to have no evidence of LARC outreach innovation keywords. The subcategory of outreach to patients had the most identified keywords and outreach to providers and insurance/payer were both under-represented in the research sample. The three states with complete evidence had a balanced representation with roughly the same frequency of keywords across all three subcategories. See tables 4.4(a) and 4.4(b) for corresponding data on LARC outreach.

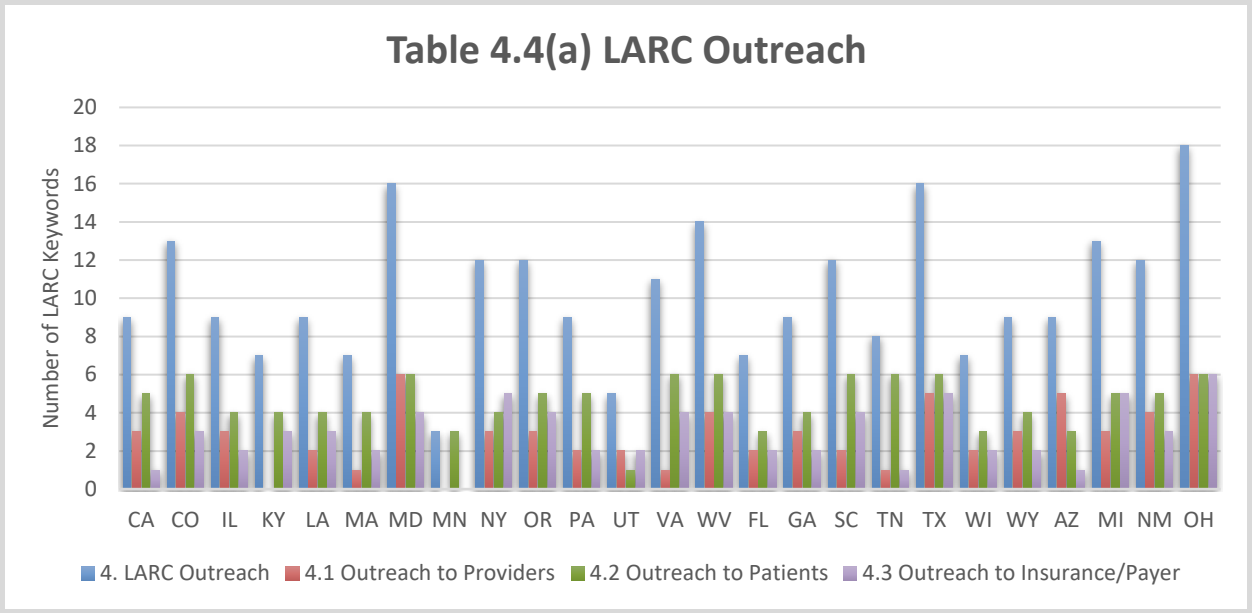


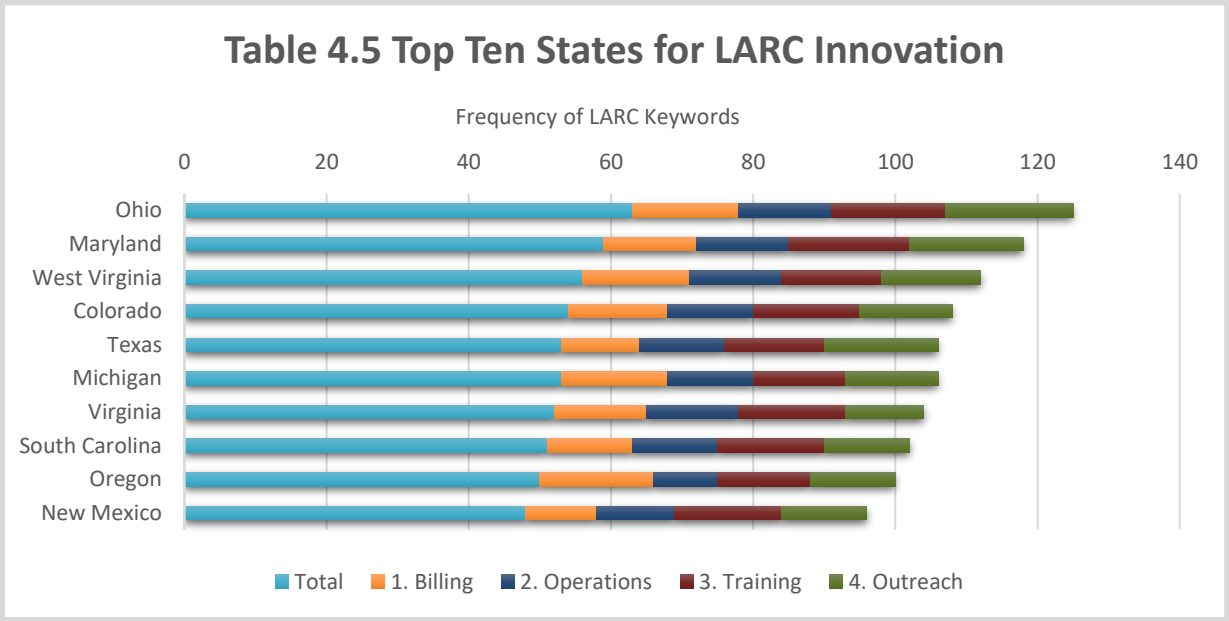
Table 4.4(b) LARC Outreach

Nature of Evidence	States	Frequency	Percentage
Complete Evidence	OH, MD, TX	3	12%
Sufficient Evidence	WV, CO, MI, VA, SC, OR, NM, NY	8	32%
Limited Evidence	FL, PA, WY, CA, GA, KY, IL, LA, WI, MA, UT, AZ, TN	13	52%
No Evidence	MN	1	4%

Analysis of Results

Collectively, Ohio is the only state to show complete evidence in three out of four LARC policy innovation categories. Maryland showed complete evidence in two out of four categories and the states of Michigan, Oregon, West Virginia, Colorado, Virginia, Texas, South Carolina, and New Mexico all showed complete evidence in one of the four categories. This is significant

as all these states landed in the overall top ten list of LARC policy innovation with the addition of New Mexico (Table 4.5). Of the states in the top ten list, five states expanded Medicaid, two states did not, and three expanded in an alternative manner. Of the top ten states, six have developed and published state sanctioned LARC toolkits which hold abundant innovative policies consistent with the keywords coded in this research project. One striking similarity that all top ten states share is that they each have balanced scores for all four LARC categories – billing and payment, operations, training, and outreach. Furthermore, they all have higher than average scores for LARC training and outreach. However, LARC billing and payment scored the highest overall and no states showed complete evidence in the category of LARC operations.



Key Research Findings

There are several key findings that emerged from the data pertaining to LARC utilization and unintended pregnancy, including teen pregnancy. The states of Colorado, Oregon, and Massachusetts have experienced success in LARC utilization and positive health outcomes. Colorado ranked fourth in this study for LARC policy innovation and their LARC utilization rate

is the highest in the U.S. at 25.8% (Table 4.6). Furthermore, Colorado has a well-known model LARC program that other states seek to replicate as they have achieved a 50 percent reduction in teen births and abortions and have averted nearly $70 million in public costs for unintended pregnancies (Colorado Dept. of Health, 2017). Colorado is a Medicaid expansion state and while they do not have a current CMS family planning waiver or state plan amendment, they do have a published LARC toolkit. They have also received ample LARC-specific funding from private donations.

Table 4.6 Top Ten States Comparison

Top Ten States	Medicaid Expansion	CMS Family Planning Waiver or SPA	State LARC Toolkit	*LARC Use Rate, 2013 (ages 15-19)	*Teen Pregnancy Rate, 2013
Ohio	Alternative	No	No	5.2%	39-43%
Maryland	Yes	Yes	Yes	8.3%	39-43%
West Virginia	Yes	No	Yes	2.0%	49-62%
Colorado	Yes	No	Yes	25.8%	34-38%
Texas	No	Yes	Yes	9.1%	49-62%
Michigan	Alternative	No	No	3.3%	39-43%
Virginia	Yes	Yes	Yes	7.3%	34-38%
South Carolina	No	Yes	Yes	6.5%	44-48%
Oregon	Yes	Yes	No	11%	34-38%
New Mexico	Alternative	Yes	No	7.4%	49-62%

(*Sources: CDC and Guttmacher Institute)

Similar to Colorado, Oregon also landed among the top ten states for LARC policy innovation and has also seen positive health outcomes. Oregon is also a Medicaid expansion state and does have a current CMS family planning waiver. Their LARC utilization is above the national average at 11% and they have a far lower than average teen pregnancy rate (Table 4.6).

Oregon has made immediate postpartum LARC a legislative and policy priority and requires Medicaid to cover LARC regardless of citizenship, which is a departure from many other states (Oregon Perinatal Collaborative, 2019). On the other hand, Massachusetts is also a Medicaid expansion state with no family planning waiver or state plan amendment, and while they landed in the bottom ten states for LARC policy innovation, they have experienced higher than average LARC use rates and lower than average teen pregnancy rates (Table 4.7). This is consistent with overall LARC trends in the Northeast, regardless of the lack of evidence of policy innovation in their state documents.

Table 4.7 Bottom Ten States Comparison

Bottom Ten States	Medicaid Expansion	CMS Family Planning Waiver or SPA	State LARC Toolkit	*LARC Use Rate, 2013 (ages 15-19)	*Teen Pregnancy Rate, 2013
California	Yes	Yes	No	9.0%	44-48%
Georgia	No	Yes	No	4.1%	44-48%
Kentucky	Yes	No	No	2.6%	49-62%
Illinois	Yes	No	No	7.7%	39-43%
Louisiana	Yes	Yes	No	3.7%	49-62%
Wisconsin	No	Yes	No	5.6%	22-33%
Massachusetts	Yes	No	No	9.0%	22-33%
Utah	Yes	No	No	3.5%	22-33%
Arizona	Alternative	No	No	5.8%	44-48%
Tennessee	No	No	No	5.8%	49-62%

(*Sources: CDC and Guttmacher Institute)

Discussion of Results and Key Findings

It is significant that none of the states in the research sample showed complete evidence in the category of LARC operations. This could suggest that innovative LARC policies may not be currently operationalized at the state level. State innovation was found to focus more on billing and payment, training, and outreach; however, these elements must be fully operationalized in order to maximize the policy innovation, improve LARC access, and increase LARC utilization. It is important to note that this study focused only on state-level policy innovation and LARC policies and operations are also implemented and managed at the county, city, local, and nonprofit level.

While all states in the top ten share collective similarities, they are vastly different in their overall LARC policy approaches and the reported outcomes of their LARC policy innovations. All but two states in the top ten have expanded Medicaid in some capacity and the two without expansion, Texas and South Carolina, both have state-sanctioned LARC toolkits published. Moreover, all states that have higher LARC use rates and lower than average teen pregnancy rates have all expanded Medicaid. However, the top three states for LARC policy innovation, Ohio, Maryland, and West Virginia, have not seen their policy innovation translate into positive health outcomes via increased LARC uptake and lower unintended and teen pregnancy rates. Yet it is important to note that it takes time for health practices and outcomes to catch up to policy innovations, and there is a considerable data lag when it comes to current available statistics on LARC usage, teen pregnancy by state, and overall unintended pregnancy rates.

The success in Colorado can be attributed more to major increases in LARC funding than to policy innovation, though each factor is stronger when applied together. These research findings reveal that it takes more than innovative written policy documents to bend the arc of

unintended pregnancy toward improved maternal health outcomes and increased cost savings to states with better access to LARC. Bridging the gap between policy and practice, with a healthy dose of intentional LARC-specific funding, is imperative to achieve the objectives of state policy makers, health care providers, and the women they serve. This complex issue requires a comprehensive public administration approach and as more LARC data becomes available, more innovative and informed practices can be implemented to drive positive health outcomes.

Chapter Summary

This chapter discussed the results and findings of the content analysis of LARC innovation policies in 25 states throughout the U.S. These results are explained, graphed, and analyzed in this chapter. The analysis reveals that states with highly innovative LARC policies have taken a balanced approach to incorporate LARC billing and payment, operations, training, and outreach into their state family planning documents, with operations as the most under-represented category. The analysis also reveals that innovative policies are only one factor in the strategy to increase LARC access and utilization. Other factors such as Medicaid expansion, political environments, contraceptive choice, and LARC-specific funding must also be considered to address the endemic issue of unintended pregnancy throughout the U.S. Moreover, since many of these policy innovations are recent, a follow-up study in the next two to three years would have the potential to fill many of the research and data gaps found in this analysis.

Chapter 5: Conclusion

Chapter Purpose

The purpose of this chapter is to summarize the research findings to present the most important takeaways from this research project on LARC policy innovation. The research purpose was to describe the innovative policies and practices states have implemented to improve access to LARC and the outcomes of this innovation. States that showed the highest rates of LARC innovation through the content analysis of state policy documents also shared relatively balanced scores across the four categories. LARC billing and payment innovation had the highest rates of evidence, whereas LARC operations had the lowest of the research sample. This chapter will discuss the analysis of the research findings, research contributions, the most important findings, limitations of the research, state policy recommendations, and potential future LARC research.

Figure 5.1 Research Purpose

Research Contributions

There is a research consensus that argues the exorbitant cost of LARC devices in the U.S. is the root cause of the lack of utilization despite the known efficacy and cost-effectiveness of LARC. However, addressing this issue from a public administration perspective reveals that LARC policy innovation, coupled with LARC-specific funding sources, can drive progress to improve access and reduce unintended pregnancy. The findings of this descriptive analysis reveal that many states have implemented innovative policies on LARC billing and payment yet operationalizing the best practices of same-day insertion and immediate postpartum use appears

to be falling short in this research sample. Moreover, states are engaging in more innovation when it comes to LARC training and outreach which can yield improved access to LARC over time. Despite political factors such as Medicaid expansion and state coverage of contraception and women's health services, a multitude of states have found ways to innovate policies, implement practices, and leverage funding sources to increase LARC utilization and improve maternal health outcomes. The public administration approach is key to maintaining politically feasible solutions to solving complex issues such as LARC use and unintended pregnancy.

Most Important Findings

The most important finding in this research study is that improved health policy does not necessarily translate into improved health outcomes. The states with the highest rates of LARC policy innovation do not necessarily show current outcomes that are consistent with the innovative policies. Ohio had the highest overall scores for LARC innovation yet still lags the national average for LARC utilization and has average to above average unintended pregnancy rates (Table 4.6). Maryland had the second highest scores and while they have higher than average LARC utilization, their unintended pregnancy rate is far above the national average (Table 4.6). Conversely, states like California and Massachusetts have much higher than average LARC utilization rates

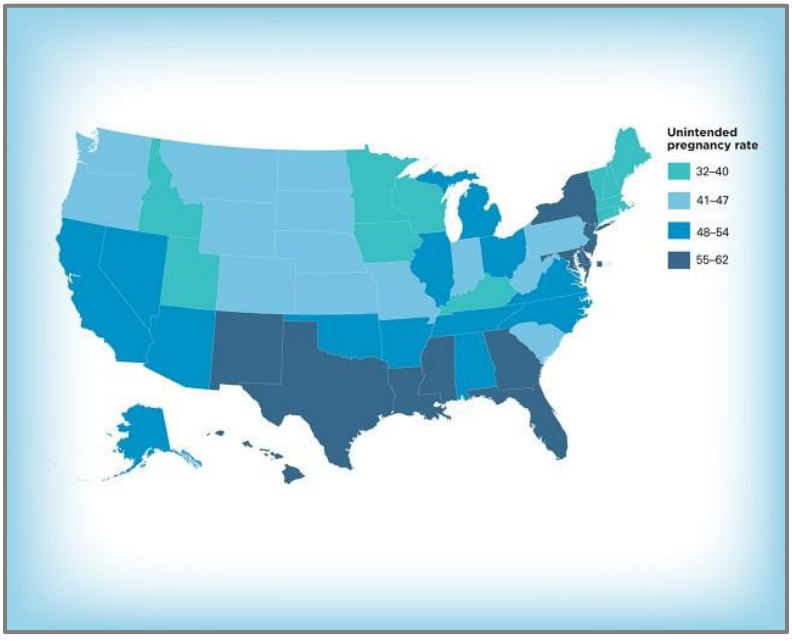


Figure 5.2 Unintended Pregnancy Rates 2016 (Source: Guttmacher Institute)

and average to below average unintended pregnancy rates but scored near the bottom of the research sample for LARC policy innovation (Table 4.7).

Nevertheless, results in some states showed close alignment between LARC policy innovation and health outcomes. Colorado and Oregon scored higher than average for LARC innovation, particularly for LARC billing and payment and LARC training, and both states also have above average LARC utilization and lower than average rates of unintended pregnancy (Table 5.1). On the other hand, Kentucky and Louisiana scored in the bottom quadrant of the research sample and predictably have lower than average LARC utilization rates and much higher than average unintended pregnancy rates (Table 5.1). Limited evidence of LARC innovation in the categories of operations and outreach was found in both Kentucky and Louisiana. Massachusetts appears to be an outlier in this data collection. Overall, this study reveals LARC policy innovation is one of many factors that impact maternal health outcomes.

Table 5.1 States with Significant Findings

State (with rank)	Medicaid Expansion	CMS Family Planning Waiver or SPA	State LARC Toolkit	*LARC Use Rate, 2013 (ages 15-19)	*Teen Pregnancy Rate, 2013	*Unintended Pregnancy Rate, 2016
Ohio (1)	Alternative	No	No	5.2%	39-43%	48-54%
Maryland (2)	Yes	Yes	Yes	8.3%	39-43%	55-62%
Colorado (5)	Yes	No	Yes	25.8%	34-38%	41-47%
Oregon (10)	Yes	Yes	No	11%	34-38%	41-47%
California (17)	Yes	Yes	No	9.0%	44-48%	48-54%
Kentucky (19)	Yes	No	No	2.6%	49-62%	48-54%
Louisiana (21)	Yes	Yes	No	3.7%	49-62%	55-62%
Massachusetts (23)	Yes	No	No	9.0%	22-33%	32-40%

(*Sources: CDC and Guttmacher Institute)

Limitations of the Research

There are several potential explanations for the inconsistencies in the research and data collected. Some states have not updated their online handbooks and policy manuals recently and many states delegate LARC policy implementation to the county, city, or local level. The relationship between the data collected on policy innovation and improved outcomes in the form of increased LARC use and decreased teen and unintended pregnancy rates is complex and multifaceted. It takes time for policy innovation to be effectively implemented and for data to become available on these outcomes. There are also gaps between policy and practice if funding for LARC is limited and cannot meet the demand by patients for LARC devices. Perhaps one of the most complicated and limiting factor in this research is identifying current reliable data on unintended pregnancy rates by state.

Measures of intended versus unintended pregnancies are riddled with flaws and present an over-simplified choice and often a false equivalence. Unintended pregnancy is a self-reported statistic that should be treated more on a continuum than as a binary choice (Potter et al., 2019). Moreover, access to contraception and "the decision to contracept and method selection are assumed to be freely undertaken, the blame for unintended pregnancy is thus situated squarely on women" (Potter et al., 2019, p. 2). Therefore, the measure of unintended pregnancy is somewhat unreliable and does not factor in structural forces that impact contraceptive choice and access to chosen methods; these forces overwhelmingly impact teens and women of color who are significantly over-represented in data on unintended pregnancy and Medicaid-paid births. Consequently, utilizing unintended pregnancy as a measure of improved health outcomes in this study should be considered nuanced and complex, and other measures of health outcomes such as LARC utilization, birth spacing, and access to contraceptive choice should also be considered.

Policy Recommendations

Research findings suggest that the operationalization of innovative LARC policies regarding billing and payment, training, and outreach is necessary to bridge the gap between state policy and practice. Furthermore, implementing same-day LARC insertion and immediate postpartum LARC insertion policies and guidance are critical keys to increasing access and utilization. LARC policies in most states are scattered, supplemental, and often difficult to identify. Therefore, state LARC toolkits, such as those found in Maryland, West Virginia, Colorado, and Texas, also have promising potential to deliver step-by-step guidance on implementing LARC policies and best practices. Finally, the state that has seen the most sweeping change and significant results in increasing LARC use and decreasing abortion and unintended pregnancy is Colorado. States should regard Colorado's LARC policy and funding model as the gold standard to customize and replicate across the U.S.

Future LARC Research

Many of the LARC policy innovations found in this study are recent, some as new as 2020. Since it takes time to fully implement state policies, standardize practices, and gather corresponding data, a follow-up study in the next two to three years would have the potential to fill many of the research and data gaps found in this analysis. Analyzing the other 25 states in the U.S. would also provide a more complete picture of LARC policy and access nationwide. Furthermore, this research revealed that innovative policies on LARC billing and payment are more widespread than LARC operations, thus a more targeted study on same-day insertion and immediate postpartum use could dig deeper into the current lack of operational innovation. Finally, a statewide survey of LARC providers and patients to accompany this content analysis could have tremendous potential to analyze the gap between LARC policy and practice.

Chapter Summary

This applied research project describes the innovative policies and practices states in the research sample have implemented to improve access to LARC and the outcomes of this innovation. The content analysis of state LARC policy innovation reveals that innovative policies can lead to positive health outcomes; however, policies can only go so far if funding is not available. Policy innovation must be accompanied by funding innovation to truly address the issue of LARC access and utilization. Furthermore, women should not be held accountable for unintended pregnancy if contraception choice and highly-effective methods like LARC are not available to all. There are obvious social and economic advantages as well when women have agency over their reproductive health. In the U.S., the root cause of the lack of LARC access can be directly attributed to the exorbitant cost of the device. Addressing this issue from a public administration perspective compels public leaders to look beyond the root cause, circumvent the system and its flaws, and find politically feasible and evidence-based solutions.

There is a wide gap between policy and practice that requires funding and education to fill and LARC policy innovation that focuses on billing and payment, operations, training, and outreach can lay the foundation for the work of policy implementation to begin. The return on investment both fiscally and socially is overwhelmingly worth it. Justice Ginsburg furthered her 2020 dissent explaining "effective contraception improves health outcomes for women and their children," provides critical "health benefits unrelated to preventing pregnancy," and "improves women's social and economic status by allowing them to invest in higher education and a career" (*Little Sisters of the Poor v. Pennsylvania*, 2020, p. 61). Access to LARC is a moral imperative that not only provides women equal access to well-being, it advances public health and social stability for the greater good of all.

References

American College of Obstetrics and Gynecologists (ACOG). (2017). Medicaid Reimbursement for Postpartum LARC by State. *ACOG Women's Health Care Physicians.* Retrieved from https://www.acog.org/

Association of State and Territorial Health Officials (ASTHO). (2019). New Mexico Leverages Reproductive Justice Advocates to Provide Patient-Centered Culturally Competent Care. *ASTHO Briefs*. Retrieved from https://astho.org/

Babbie, Earl. (2017). *The Basics of Social Research*. Boston, MA: Cengage Learning.

Batra, P. & Bird, C. (2015). Policy Barriers to Best Practices: The Impact of Restrictive State Regulation on Access to Long-acting Reversible Contraception. *Women's Health Issues 25*(6), 612-615.

Beaton, C. (2017, April 18). Why Does America Have Fewer Types of IUDs than Other Countries? *The Atlantic*, 1-10. Retrieved from https://www.theatlantic.com/

Bowen, G.A. (2009). Document Analysis as a Qualitative Research Method. *Qualitative Research Journal, 9*(2), 27-40.

Castleberry, N. M., Stark, L., Schulkin, J. & Grossman, D. (2019). Implementing best practices for the provision of long-acting reversible contraception: a survey of obstetrician-gynecologists. *Contraception 100*(2019), 123-127.

Centers for Disease Control. (2015). Prevent Unintended Pregnancy: Evidence Summary. *The 6|18 Initiative*. Retrieved from https://www.cdc.gov/sixeighteen/docs/6-18-evidence-summary-pregnancy.pdf

Centers for Disease Control. (2018). Current Contraceptive Status Among Women Aged 15-49: United States, 2015-2017. *Centers for Disease Control: National Center for Health Statistics*. Retrieved from https://www.cdc.gov/nchs

Centers for Medicaid and CHIP Services (CMCS). (2019). Contraception in Medicaid: Improving Maternal and Infant Health. *CMCS*. Retrieved from https://www.medicaid.gov/

Coles, C. & Shubukin, C. D. (2018). Effective, recommended, underutilized: a review of the literature on barriers to adolescent usage of long-acting reversible contraceptive methods. *Pediatrics, 30*(5), 683-688.

Colorado Department of Public Health. (2017). Taking the Unintended Out of Pregnancy: Colorado's Success with Long-Acting Reversible Contraception. *CDPH Family Planning Program*. Retrieved from https://www.colorado.gov/pacific/sites/default/files/PSD_TitleX3_CFPI-Report.pdf

Eeckhaut, M. C., Sweeney, M. M. & Gipson, J. D. (2014). Who Is Using Long-Acting Reversible Contraceptive Methods? Findings from Nine Low-Fertility Countries. *Perspectives on Sexual Reproductive Health, 46*(3), 149-155.

Eisenberg, D., McNicholas, C. & Peipert, J. (2013). Cost as a Barrier to Long-Acting Reversible Contraceptive (LARC) Use in Adolescents. *Journal of Adolescent Health, 52*(4), S59-S63.

Johansen, K., Green, Z. & Feliciano, I. (2019). The Fight to End Texas' High Maternal Mortality Rate. *Public Broadcasting System (PBS)*. Retrieved from https://www.pbs.org/newshour/

Johnson, Gail. (2014). *Research Methods for Public Administrators*. Armonk, NY: M.E. Sharpe.

Krippendorff, Klaus. (2019). *Content Analysis: An Introduction to its Methodology*. Los Angeles, CA: Sage Publications, Inc.

Kroelinger, C.D., Morgan, I.A., DeSisto, C.L., Estrich, C., Waddell, L.F., Mackie, C., Pliska, E., Goodman, D.A., Cox, S., Velonis, A. & Rankin, K.M. (2019). State-Identified Implementation Strategies to Increase Uptake of Immediate Postpartum Long-Acting Reversible Contraception Policies. *Women's Health Journal, 28*(3), 346-356.

Little Sisters of the Poor Saints Peter and Paul Home v. Pennsylvania, 591 U.S. 431 (2020).

Mann, E. S., White, A. L., Rogers, P. L. & Gomez, A. M. (2019). Patients' experiences with South Carolina's immediate postpartum Long-acting reversible contraception Medicaid policy. *Contraception, 100*(2), 165-171.

Miller, D. (2016). Illinois aiming to make every pregnancy planned by increasing access to long-acting reversible contraception. *The Council of State Governments: Midwest*. Retrieved from https://www.csgmidwest.org/

Mui, K. (2018). Thinking About Getting an IUD? There are Five to Choose From. *Medicine and Health*. Retrieved from https://www.goodrx.com/

National Academy for State Health Policy (NASHP). (2019). Where States Stand on Medicaid Expansion. *NASHP Health Coverage and Access*. Retrieved from https://nashp.org/

Neuendorf, K.A. (2017). *The Content Analysis Guidebook*. Los Angeles, CA: Sage Publications, Inc.

Okoroh, E.M., Kane, D.J., Gee, R.E., Kieltyka, L., Frederiksen, B.N., Baca, K.M., Rankin, K.M., Goodman, D.A., Kroelinger, C.D., Barfield, W.D. (2018). Policy change is not enough: engaging provider champions on immediate postpartum contraception. *American Journal of Obstetrics and Gynecology*, *218*(6), 590e1-590e7.

Pace, L. E., Dolan, B. M., Tishler, L. W., Gooding, H. C. & Bartz, D. (2016). Incorporating Long-acting Reversible Contraception into Primary Care: A Training and Practice Innovation. *Women's Health Issues, 26*(2), 131-134.

Potter, J.E., Stevenson, A.J., Coleman-Minahan, K., White, K., Baum, S.E. & Grossman, D. (2019). Challenging unintended pregnancy as an indicator of reproductive autonomy. *Contraception*, *100*(1), 1-4.

Read, B. (2020). Supreme Court Says Employers Can Deny Workers Birth Control Coverage. *Vox Media, Inc.* Retrieved from https://www.thecut.com/2020/07/supreme-court-ruling-birth-control-trump.html

Rickets, S., Klinger, G. & Schwalberg, R. (2014). Game Change in Colorado: Widespread Use of Long-Acting Reversible Contraceptives and Rapid Decline in Births Among Young, Low-Income Women. *Perspectives on Sexual and Reproductive Health*, *46*(3), 125-132.

Romero, L., Pazol, K., Warner, L, Gavin, L., et al. (2015). Vital Signs: Trends in Use of Long-Acting Reversible Contraception Among Teens Aged 15-19 Years Seeking Contraceptive Services. *CDC Morbidity and Mortality Weekly Report*, *64*(13), 363-369.

Sandoe, E. (2018). Lessons from California in Women's Health. *Project Hope: Health Affairs*. Retrieved from https://www.healthaffairs.org/

Shields, P.M. & Rangarajan, N. (2013). *A Playbook for Research Methods: Integrating Conceptual Frameworks and Project Management*. Stillwater, OK: New Forums Press, Inc.

Steenland, M. (2018). Unbundling payments for long-acting reversible contraception. *Brown University Population Studies and Training Center*. Retrieved from https://www.brown.edu/academics/population-studies/projects/unbundling-payments-long-acting-reversible-contraception-0

Strasser, J., Borkowski, L., Couillard, M., Allina, A., Wood, S. (2016). Long-Acting Reversible Contraception: Overview of Research and Policy in the United States. *Jacobs Institute of Women's Health*. Retrieved from https://publichealth.gwu.edu/

Trussell, J., Henry, N., Hassan, F., Perzioso, A., Law, A., Filonenko, A. (2013). Burden of unintended pregnancy in the United States: potential savings with increased use of long-acting reversible contraception. *Contraception, 87*(2), 154-161.

Vela, V. X., Patton, E. W., Sanghavi, D., Wood, S. F., Shin, P. & Rosenbaum, S. (2018). Rethinking Medicaid Coverage and Payment Policy to Promote High Value Care: The Case of Long-Acting Reversible Contraception. *Women's Health Issues, 28*(2), 137-143.

Wachino, V. (2016). State Medicaid Payment Approaches to Improve Access to Long-Acting Reversible Contraception. *Center for Medicaid and CHIP Services Informational Bulletin*. Retrieved from https://www.medicaid.gov/federal-policy-guidance/downloads/cib040816.pdf

White, K., Ela, E., Hopkins, K., & Potter, J. E. (2019). Providers' Barriers to Offering Contraception in the Healthy Texas Women (HTW) Program. *The University of Texas at Austin Texas Policy Evaluation Project*. Retrieved from http://sites.utexas.edu/txpep/files/2019/03/HTW-provider-evaluation-TxPEP-Brief-25March19.pdf

Winner, B., Peipert, J. F., Zhao, Q., Buckel, C., et al. (2012). Effectiveness of Long-Acting Reversible Contraception. *New England Journal of Medicine, 366*, 1998-2007.