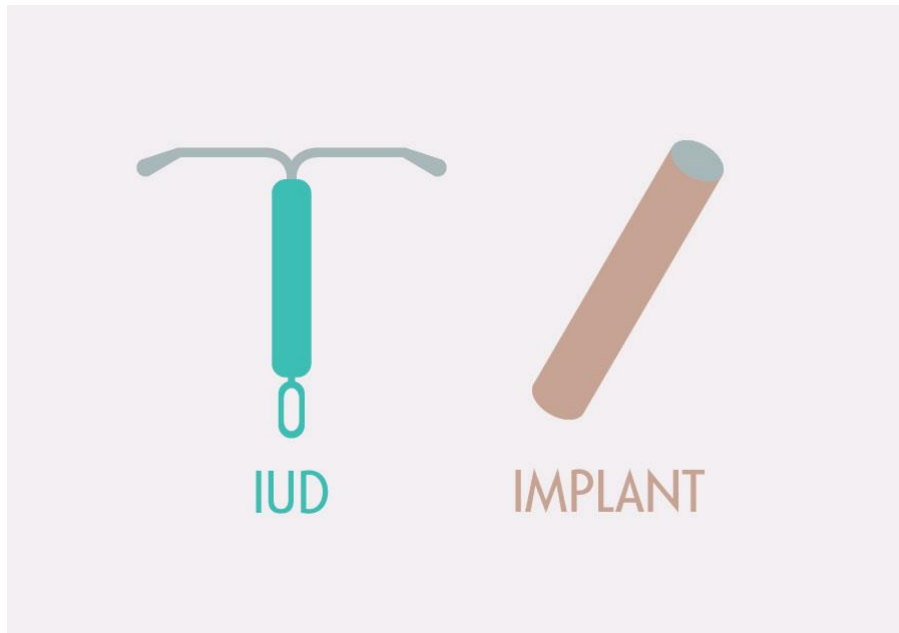


Expanding Access to Long-Acting Reversible Contraceptives in Virginia

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EXECUTIVE SUMMARY

Forty-two percent of pregnancies in Virginia are unintended. Empowering women to choose the time and circumstances of their childbearing creates positive outcomes for individuals and the state. Many unintended pregnancies are due to inconsistent or incorrect use of contraception. Long-acting reversible contraceptives (LARCs) are more than 99% effective and are a promising solution for reducing unintended pregnancies. When women are given ready and unhindered access to them, they choose them; like them; and see great benefits from them. However, numerous barriers exist that make LARCs both inaccessible and underused. These include: high upfront cost for women and healthcare providers; insurance-reimbursement concerns; lack of provider training and education; and limited patient knowledge.

In this analysis, I propose options that aim to address the unique barriers that exist for LARCs with the goal of ensuring women are provided the full range of contraceptive options. I propose five alternatives:

1. Advocate separate reimbursement for postpartum LARC insertion
2. Advocate for a pilot program that enables physicians in private practices to stock devices
3. Propose using a Section 1115(a) Medicaid waiver to enable publicly funded clinics serving Medicaid enrollees to stock devices
4. Advocate for a provider training initiative
5. Advocate for a combined voucher-training program that will be privately funded initially with a public phase-in

I evaluate each alternative with respect to: a.) percent reduction in unintended pregnancies; b.) execution cost and cost savings in avoided unintended pregnancies; c.) percent of women of reproductive age and percent of women in need of contraceptive services and supplies reached; d.) multidimensionality; e.) conditional political feasibility; and f.) equity. Based on this analysis, I propose Option 5: a voucher-training program with initial private funding and an eventual public phase-in. This draws upon successful programs in other states. It would reduce unintended pregnancies and generate significant cost savings. It also addresses the multifaceted nature of this issue and serves individuals who would otherwise face costs to obtaining LARCs.

PROBLEM DEFINITION

Forty-five percent of pregnancies in the United States and 42% of pregnancies in Virginia are unintended, meaning that a woman did not want to become pregnant at that time or anytime in the future (Kost, 2015; VDH, 2014).¹ Helping women to plan and space their births is essential to the health, well-being, and prosperity of both individuals and society. Inconsistent and incorrect use of contraception is a significant contributing factor to unintended pregnancies (Mosher and Jones, 2010; Kost et al., 2015). **In fact, 56% percent of women in Virginia who have an unintended pregnancy were using contraception at the time of pregnancy** (VDH, 2014). Long-acting reversible contraceptives (LARCs), which include implants and intrauterine devices (IUDs), are the most effective form of reversible contraception. They also have high continuation and satisfaction rates. However, numerous barriers at the system, provider, and patient level make LARCs inaccessible and underused. This means that Virginia is missing out on the opportunity to create better economic, education, and health outcomes for women, their families, and the state.

¹ While this analysis uses the terms “woman” and “women” throughout, it recognizes that these terms do not capture the full range of individuals who become pregnant or use contraception. It also uses the gender-inclusive singular pronouns “they” and “them.”

OVERVIEW OF UNINTENDED PREGNANCIES IN VIRGINIA

While Virginia's unintended pregnancy rate (51 per 1,000 women) declined 2% between 2006 and 2010, it is still higher than the national median (47) (Kost, 2015).² In addition, while the teen pregnancy rate is below the national average, Virginia still ranks behind 13 other states in regard to this metric (CDC, 2018).

Reducing unintended pregnancies for all women of reproductive age (15-44) is welfare improving because it promotes the following outcomes.

Economic and educational

Planning, delaying, and spacing births can help women achieve their education and career goals and improve earning potential for families (CDC, 2007; Logan et al., 2007; Herd et al., 2016). It can also help women reduce the gap in pay that typically exists between working mothers and their childless peers and reduce the chance of needing public assistance (Sonfield et al., 2013).

Maternal health

Planned pregnancies can result in healthier women and infants. Family planning promotes the mental health and happiness of both women and their partners (Gipson, Koenig, & Hindin 2008; Herd et al. 2016). It helps create strong marital and cohabiting relationships, generating benefits for both parents and their children (Lawrence, 2008).

Infant health

When women can plan their births, they are more likely to engage in prenatal care and breastfeeding, when controlling for various demographic factors (Ayoola, Stommel, and Nettleman, 2009). In addition, many unplanned pregnancies are rapid repeat pregnancies, or those that occur fewer than 24 months after a previous birth (Wendt et al., 2012; Kavanaugh and Anderson, 2013). This represents 23.2% of pregnancies in Virginia (VDH, 2018). Both short birth spacing and unplanned births increase the likelihood of premature birth and low birth weight, which are the two leading causes of infant mortality in the state (Conde-Agudelo et al., 2006; VDH 2018). If birth intervals were at least 18 months, infant and maternal survival in Virginia would be 2.5 times greater (Sebastian, Khan, & Roychowdhury, 2010).

Cost savings for the state

Reducing unintended pregnancies also saves healthcare costs. Forty-five percent of unintended pregnancies in Virginia are publicly funded, which amounted to costs of \$506.5 million in 2010. Preventing these could save \$373.7 million (Sonfield and Kost, 2015). **Tables 1 and 2** summarize these annual expenses and potential savings.

² An unintended pregnancy is one that was either mistimed or unwanted. If a woman did not want to become pregnant at the time the pregnancy occurred but did want to become pregnant at some point in the future, the pregnancy is considered mistimed. This accounts for 64% of unintended pregnancies in Virginia. If a woman did not want to become pregnant then or at any time in the future, the pregnancy is considered unwanted. This accounts for 34% of unintended pregnancies in Virginia (Kost, 2015).

Table 1: Summary of Annual Costs from Unintended Pregnancies by Service in 2010

	Expenses from Unintended Pregnancies	Savings from Eliminating Unintended Pregnancies
Virginia		
Medicaid Payments on Unintended Pregnancies		
Prenatal, birth, and 12 months of infant care	\$333.2 billion	\$373.3 million
1-5 years of infant and child care	\$160.5 billion	
Total³	\$506.5 million	\$373.3 million

Table 2: Summary of Annual Costs from Unintended Pregnancies by Payer in 2010

	Expenses from Unintended Pregnancies	Savings from Eliminating Unintended Pregnancies
Virginia		
Total Federal Payments	\$312 million	\$230.1 million
Total State Payments	\$194.6 million	\$143.5 million
Total	\$506.5 million	\$373.7 million

Source: Monea and Thomas, 2011. Sonfield and Kost, 2015

In light of these benefits, giving women the support and resources they need to meet their childbearing goals is a critical policy aim. It is important to recognize that the goal of contraception policies is not to have women choose one specific method but rather to ensure they have access to the full range of options. All policies and alternatives that I discuss do not promote LARCs exclusively, but rather focus on enabling women to obtain the birth control method of their choice. This approach dismantles the unique barriers that impact supply for and demand of LARCs while also preserving autonomy. I situate policy interventions within a framework of reproductive justice, which states that advancing health and well-being entails giving people complete information and support in making the best decision for their needs.

³ The total costs of services add up to \$493.7, which is 86% of the total costs. The remainder is the costs of publicly funded miscarriages.

THE BENEFITS OF LARCS

Individuals who do not use a contraceptive method have approximately an 85% chance of an unintended pregnancy within one year (Trussell, 2011a). However, even those who rely on the most commonly used methods are not guaranteed to meet their family planning goals.

This is because although almost all modern methods have low failure rates if used perfectly, methods that require routine user involvement, such as taking a pill each day, are difficult to use perfectly for long periods of time. This means that women are at the highest risk of unintended pregnancy if they do not use contraceptives, but they are still at risk if they use the most common methods (Sonfield, Hasstedt, and Gold, 2014).

In fact, in any given year, 43% of unintended pregnancies in the U.S.—or 19.4% of all pregnancies—are attributable to inconsistent or incorrect use of contraception. Only 5% occur among the two-thirds of women who consistently and correctly practice contraception all year (Sonfield, Hasstedt, and Gold, 2014). Additionally, of women having an abortion, 54% report using birth control at the time they became pregnant—generally a condom or an oral contraceptive (Guttmacher Institute, 2012). It is against this backdrop that LARCs have significant potential.

LARCs include both IUDs and the implant. IUDs are small, T-shaped devices that are inserted into the uterus by a healthcare provider. Five IUDs are currently available in the U.S.: one copper IUD and four hormonal IUDs. The copper IUD is effective 10-12 continuous years. It works primarily by releasing copper ions that prevent a sperm from reaching an egg. Hormonal IUDs remain effective for 3-6 years, depending on the specific device. They work primarily by making it harder for a sperm to reach an egg and preventing ovulation. Finally, the implant is a small rod that is inserted under the skin on the inside of the upper arm. There is one FDA-approved implant in the U.S. called Nexplanon. It is approved for 3 years of continuous use, and it works primarily by preventing ovulation (See Appendix A for an overview of methods).

The distinctive benefit of both the IUD and implant is that once they are inserted by a provider, they require no effort on the part of the user to maintain efficacy. They thereby eliminate risk factors associated with short-term methods, such as the pill, ring, patch, or Depo-Provera shot. These risk factors include: human error, forgetting, method unavailability, or misunderstanding of correct use.

In essence, LARCs “change the default from needing to take action to prevent pregnancy to needing to take action to become pregnant.” (Trussell, 2013). They are often referred to as the “set it and forget it” method. They remove the need for obtaining a yearly prescription, making regular pharmacy visits, or scheduling frequent visits with a healthcare provider. Because LARCs obviate the need for daily adherence, there is a near-perfect alignment between perfect use and typical use.

To put this in context, fewer than one women per 100 will become pregnant after one year of using a LARC. About nine per 100 women will become pregnant after one year of using the pill. About 18 will become pregnant after one year of relying on condoms (Trussell, 2013). Failures with pills are also twofold greater in women who are younger than 21 compared with older women, which can contribute to teen pregnancy. **Table 3** compares the 12-month failure rates for the most commonly used methods (also see Appendix B for a visual depiction of method comparison).

Table 3: Efficacy and Continuation of Contraceptive Methods

Contraceptive Method	Perfect Use: Percent of Women Experiencing an Unintended Pregnancy in the First Year	Typical Use: Percent of Women Experiencing an Unintended Pregnancy in the First Year	Percent of Women Continuing at One Year
Short-acting Methods			
Pill (combined and progestin-only)	0.3	9	67
Male Condom	2	18	43
Patch	0.3	9	67
Ring	0.3	9	67
Depo-Provera Injection	0.2	6	56
LARC Methods			
Implant	0.05	0.05	84
Copper IUD	0.6	0.8	78
Hormonal IUD	0.2	0.2	80
Others			
Withdraw	4	22	46
Fertility Awareness Methods	5	24	47
No Method	85	85	-----

Source: American Academy of Pediatrics, 2014

One randomized control trial best illuminates these benefits. This examined women aged 18-29 years who were seeking a short-acting method. Those who agreed to randomization were assigned to one of two categories: LARC or short-acting reversible contraception. After one year, women randomized to short-acting methods had a 7.7% probability of becoming pregnant, while women randomized to LARCs had a 0.7% probability (Hubacher, 2017). This study is particularly important because it is necessary to consider whether IUDs or implants work so well because the people who use them are different in key ways from those who opt for short-term methods, regardless of the technology. This study indicates that the lower unintended pregnancy rates are attributable to the methods themselves rather than simply the women who use them.

LARCs have several other benefits. They have high continuation rates. After one year, 84-86% of women who choose an implant or IUD are still using it, compared to 54% of those who chose a short-acting method (Peipert et al., 2011). They also are safe, and fertility returns quickly after they are removed (Shoupe, 2016). Side effects can occur, as they do with any type of medication, and personal preference plays a large role in method choice in this regard. Side effects are generally rare and not serious (Heikinheimo et al., 2014).

Finally, due to their effectiveness, LARCs are the most cost-effective method of contraception. Family PACT, California's publicly-funded family planning program, estimated savings of more than \$7.00 for every \$1.00 spent on services and supplies for the implant and IUD over two years (NFPRHA, 2013).

LARCs have several positive features, but it is important to examine whether they also introduce some risk of moral hazard. They do not protect against sexually transmitted infections (STIs), and some wonder if those relying on them may be less likely to use condoms. Dual-method use (meaning one method and a condom) is relatively low regardless of what method one uses (Eisenberg et al., 2012). Retrospective cohort studies found that dual-method use is lower in women using LARCs compared to other methods (Pazol, Kramer, and Hogue, 2010; Eisenberg et al., 2012). However, these studies are correlational. Additionally, given the many positives of LARCs and the fact that STI acquisition is a topic that can be addressed through provider training and patient counseling, this risk may not outweigh the benefits of making LARCs more accessible.

Some may also be concerned that making highly effective contraception more accessible may lead to an increase in high-risk sexual behavior. One study that provided no-cost contraception to over 9,000 women found no evidence to suggest this. Most participants (71%) reported no change in their number of sexual partners at 6 and 12 months. Only 16% reported an increase, but of those more than 80% went from zero partner to one partner. The percent of women who initially reported multiple partners actually decreased (McNichols et al., 2014).

LARC USERS

Despite the benefits of LARCs and an increase in their use in recent years, they are still used much less frequently than other methods. Of women using contraception, 11.6% use a LARC method: 10.3% used an IUD and 1.3% used an implant (Kavanaugh, Jerman, and Finer, 2015). This is up from 8.5% in 2009. For comparison, 25% of all contraceptive users rely on the pill, making it the most common method, while 15% use condoms. Health policy researchers state that the increase in LARC use is likely being driven more by women shifting from other highly effective methods like sterilization, rather than from less effective methods (Kavanaugh, Jerman, and Finer, 2015).

While data on LARC use among all women of reproductive age in Virginia is not available, according to individuals at the Virginia Department of Health (VDH) and reproductive health policy experts, it is extremely likely that statewide use is similar to the national average.⁴ Data among LARC use at Title X clinics in Virginia does exist. Title X is the federally funded family planning program that serves low-income and uninsured individuals. According to the 2016 Title X Annual Report, 11.4% of contraceptive users at Title X clinics in Virginia use an implant or IUD. For comparison, 62% percent used a moderately effective method, such as the vaginal ring, patch, or pills. Twenty percent use a less effective method, such as withdrawal (HHS, 2016). Among teens at Title X clinics in Virginia, 7.1% use LARCs (Romero et al., 2015). This is the same as national rates among teens at Title X clinics.

⁴ The National Survey of Family Growth does not identify women by state for privacy reasons, and data for all insurance companies in Virginia is not accessible in one central location.

NOTEWORTHY LARC INITIATIVES

Two assumptions are implicit in any discussion of expanding access to the IUD and implant. One, these methods will reduce unintended pregnancies. Two, women want to use them and will use them if they are made more readily available. That is, low use does not simply reflect low demand due to a stated preference for other forms of contraception. Several programs in other states address both points. Two are worth highlighting here because they provide a counterfactual for what LARC use *could* look like in Virginia if barriers were reduced.

St. Louis CHOICE Program

The CHOICE program was a privately funded initiative that was administered by the Washington University School of Medicine in St. Louis. Between 2007 and 2011, it provided 9,526 women aged 15-44 with the method of their choice at no cost for up to three years. Women received contraceptive counseling with accurate and unbiased information about the risks, benefits, and side effects of all methods, which were presented in order of effectiveness. They could also obtain same-day insertion (Peipert et al., 2011).

Seventy-five percent of all participants chose a LARC in this project (Secura et al., 2014). In addition, non-LARC users were 22 times more likely to experience an unintended pregnancy compared to their LARC counterparts. When comparing the St. Louis region to the Kansas City region, an area that is similar in size and demographic profile, the CHOICE project observed a significant reduction in the percent of repeat abortions (McNichols, Tessa, Secura, and Peipert, 2014).

Colorado Family Planning Initiative

The Colorado Family Planning Initiative (CFPI) is arguably the most successful and well-known LARC program.

In 2009, Colorado received a \$25 million grant from the Susan Thompson Buffet Foundation. The Colorado Department of Public Health and Environment used this to implement CFPI, which provided IUDs, implants, and the ring to women at 68 Title X clinics at no cost from 2009 to 2015. The program also included training for providers and staff on how to provide methods, counsel women, and help manage side effects (Ricketts et al., 2014).

LARC use increased 24% during the course of CFPI. Between 2010 and 2014, the program averted an estimated 3,324 births. This accounts 66% of the overall decline in unintended pregnancies for women aged 15-24 in Colorado during that time (Colorado Department of Public Health and Environment, 2017). CFPI also saved an estimated \$69 million in federal and state entitlement program costs for women and their infants and an estimated \$3.3 million in non-entitlement program costs. The Colorado Department of Public Health and Environment estimated a savings of \$5.85 in Medicaid costs for birth-related coverage alone for every \$1 invested into CFPI (Colorado Department of Public Health and Environment, 2017).

BARRIERS TO LARC ACCESS IN VIRGINIA

As these state programs demonstrate, LARCs have significant potential to address unintended pregnancy in Virginia in a cost-effective, welfare-enhancing way. The state has done some work to promote use of the IUD and implant, primarily through the Virginia LARC Workgroup.

This developed out of the Health Commissioner's Infant Morality Strategic Plan in 2014. Due to the connection between unintended pregnancies and infant health outcomes, one of the goals was to reduce unintended pregnancies by promote the use of LARCs. It is run by the Virginia Department of Health (VDH). It brings together VDH employees, physicians, nurse practitioners, hospital systems, and nonprofits.

In addition, the 2018 application for Virginia's Title V Maternal and Child Health Services Block Grant aims to reduce unintended pregnancies by increasing LARCs use among those who receive care at Title X clinics.

The Virginia LARC Workgroup has achieved policy success, which will be discussed. However, despite this and despite increased attention to this issue, multiple barriers still exist throughout the state. These impede access and use. Barriers fall into three main categories. One is cost and insurance-related concerns. Two is provider training and education. Three is patient awareness. These limit providers' ability and willingness to supply these methods; suppress patient demand for them; and cause demand that does exist to go unmet. Collectively, these lead women's options to be artificially constrained.

Barrier One: Cost and insurance reimbursement

Cost and insurance concerns for patients

Because LARCs remain effective for several years, if their cost is extended over the entire life of the method, they end up being cheaper than short-acting methods. However, unlike these other methods, they require steep upfront costs. The average wholesale price of the device itself is between \$700-850 (Eisenberg, 2015).⁵ This does not include the cost of the office visit, the insertion procedure, or potential removal. The entire cost for obtaining an IUD or implant can be up to \$1,300. This is more than a month's salary for an individual who makes the minimum wage (Guttmacher and Rosenbaum, 2016).

Cost is an issue primarily for individuals who are uninsured or do not qualify for Virginia's Plan First program, which provides family planning services to those with incomes up to 200% of the Federal Poverty Line (FPL). 11.5% of women of reproductive age in Virginia are uninsured, compared to 11.3% nationally. 14.2% of women in Virginia report not receiving health care at some point in the last 12 months due to cost, compared to 13.3% nationally. (National Women's Law Center, 2017).

In addition, of the 447,970 women who are in need of publicly funded family planning in Virginia, 23% are uninsured (Frost, Frohwirth, and Zolna, 2016).⁶ While uninsured individuals can qualify for

⁵ The average wholesale price of devices is reported to be \$844 for Mirena; \$718 for ParaGard, and \$791 for Nexplanon (Eisenberg, 2013).

⁶ Individuals are considered to be in need if they are sexually active, not trying to conceive, and have an income below 250% FPL. All those who are younger than 20 and need contraceptive services are also

sliding scale payments, they could still end up having to pay over half the cost to initiate a method. Also, part of exercising autonomy over method choice means the freedom to start *and stop* a method. If uninsured women are concerned about the cost of removal, this poses an equity issue.

For individuals who do have insurance either through Medicaid (or Plan First) or private plans, cost is less of an issue. However, impediments still exist. Under Medicaid, insurers can use “reasonable medical management,” under which they create tiered LARC options and cover one specific device but impose cost-sharing requirements for others.

Under private plans, insurers must cover 18 FDA-approved contraceptive methods at no cost sharing, as required by the Affordable Care Act (ACA). In practice, this means that most private plans (small and large group, self-funded, and individually purchased plans) must cover the copper IUD and at least one hormonal IUD at no cost. Sixty-two percent of people in Virginia have employer-sponsored health insurance. Yet, even when methods are covered, they may require prior authorization, where a doctor must call the insurer for approval before their patient can obtain the method. This means people may not be able to have a same-day insertion even if an office or clinic has the method in stock. Also, some individuals may have coverage but may not want to use it to obtain birth control for confidentiality reasons. This includes adolescents who do not want their parents to see it show up on an explanation of benefits (Tebb et al., 2014).

Cost matters because it impacts if and how women use different methods. When high out-of-pocket spending on LARCs is not a factor, women are more likely to choose them compared to when cost sharing is greater than zero (Carlin et al., 2016; Pace et al., 2013; Garipey et al., 2011). For every additional \$100 that people have to pay in out-of-pocket expenses, the decision to use a LARC decreases. When costs exceed \$200, women are much less likely to obtain one (Broecker et al., 2016).

Cost and insurance concerns for providers

Devices are expensive not only for patients. They are also expensive for providers. While manufacturers offer tiered discounts, devices can range from \$539 on the low end to \$779 on the high end (Kaiser Family Foundation, 2016). There are two ways that providers can buy and be reimbursed for LARCs. Both have significant downsides.

One is called “buy and bill,” in which a physician orders a number of devices, pays for them upfront, and stocks them. The provider bills the insurance company after insertion. This allows providers to offer same-day insertion, but it requires several thousand dollars in capital outlay with reimbursement at a later date. This is unaffordable for many small group providers and those who serve uninsured individuals paying on a sliding scale. This option also requires providers to closely monitor stock and insertion rates and absorb the cost for unused devices.

The second option is called the pharmacy benefit. Here, providers order a LARC from a specialty pharmacy once a woman asks for one. The pharmacy bills for the device and ships it to the provider’s office. Providers then typically have 30 days to insert it. This does not require upfront costs and mitigates financial risk. However, it requires women to make two visits: one to obtain the prescription and a second for the insertion. This introduces a different type of risk: women being

considered to be in need, due to confidentiality concerns with obtaining care through their parent’s private plan (Frost, Frohwirth, and Zolna, 2016).

lost to follow up. Due to transportation, work schedules, or inability to pay for another visit co-pay, many women do not return for the second visit (Bergin et al., 2012).

The high upfront cost of LARCs elevates the importance of insurance reimbursement. Providers can be reimbursed for the insertion procedure, which is usually a modest amount, and the device, which is what matters most to them. Reimbursement can be an issue in all healthcare settings, and it is intensified in hospital settings. This is because hospitals bill for all birth and maternity care under a global fee, which is one lump-sum payment for everything related to labor and delivery—including postpartum contraception. However, given the high upfront cost of LARC devices, many providers and health facilities will not provide LARC at the time of delivery if they cannot be reimbursed separately for them. This poses a problem because the postpartum period is an ideal opportunity to provide birth control. Motivation and doctor-patient interaction are high. The next time women are seen by their provider is the six-week postpartum visit. Forty percent of women enrolled in Medicaid in Virginia and 24% of those privately insured nationwide do not attend this visit (Bennett et al., 2014).

One of the LARC Workgroup's major accomplishments has been unbundling both the device and the insertion from the global fee for Medicaid enrollees in Virginia. It also created a Postpartum LARC Toolkit that describes the policy and implementation steps (Adekoya, Casey, and Neuhausen, 2017). Medicaid covers 30% of births in Virginia, and according to VDH, there has been an increase in postpartum LARC insertion for Medicaid enrollees since the policy was implemented in 2017 (Adekoya, personal communication). However, some hospitals still do not provide this service due to a lack of awareness of the policy change and what it means for everyday patient care. Also, Virginia has not unbundled postpartum LARCs for those on private insurance. This creates an inconsistent and inequitable situation, and some hospitals may not be offering postpartum LARC for anyone because of the two different reimbursement models.

In summary, cost and its concomitant insurance reimbursement concerns function to keep both demand and supply low.

Barrier Two: Provider training and knowledge

Provider training and knowledge can also make it difficult for people to obtain a LARC. Physicians, nurse practitioners, nurse midwives, and physician assistants can insert and remove the IUD and implant. For the implant, providers must complete a three-hour training provided by Merck, the manufacturer. For the IUD, providers learn by observing insertion and practicing it on their own in a clinical or outpatient setting.

Obstetrician-gynecologists (ob-gyns) are typically trained on how to insert LARCs during residency, but pediatricians and family practitioners may not be (Greenburg, Makino, and Coles, 2013). This training gap impacts accessibility. Both adolescents and adults receive most of their preventive care from primary care physicians, which includes pediatricians and family medicine physicians, rather than ob-gyns (Haskins et al. 2015). Federally qualified health centers (FQHCs) may also be especially likely to have a shortage of trained providers and nurse practitioners. These do not specialize in family planning, but many low-income and uninsured individuals rely on them for healthcare (Landry, Wei, and Frost, 2008).

According to a statewide VDH survey, only 50% of private providers who completed the survey offered LARCs. The two primary barriers they cited were cost and training (Yeats, personal communication).

Another obstacle at the provider level is education. Primary care physicians, physician assistants, nurse practitioners, and even some ob-gyns have misconceptions about how LARCs work and for whom they are suitable (Biggs et al., 2014). For example, some believe they are not safe or appropriate for adolescents; women who have never given birth; unmarried women; those with multiple sexual partners; or those who have an STI (Diaz et al., 2011; Harper, Blum, and de Bocanegra 2011). In reality, the American Congress of Obstetricians and Gynecologists (ACOG), and the American Academy of Pediatrics recommends them for all of these groups. Yet, providers may still offer them only to a highly restricted group of patients.

In February 2014, the UVA Teen and Young Adult Health Center and an ob-gyn resident at UVA examined provider bias regarding use with adolescents. They sent a survey to 320 Charlottesville and Waynesboro physicians, nurse practitioners, and physician assistants. Of the 115 responses received, 66% reported some type of bias against LARC use in adolescents (UVA Teen and Young Adult Health Center, 2014).

Barrier Three: Patient knowledge

Misconceptions and inadequate information also exist at the patient level. One nationally representative study of adults aged 18-45 found that while most said they had heard of the IUD and implant, between 68-77% of people did not know how they work or how effective they are (Power to Decide, 2015).⁷ This study aligns with several others that reveal either a lack of awareness of LARCs or, for those who are aware, little familiarity with their efficacy, safety, and side effects (Whitaker, et al., 2008; Trussell et al., 2011b). This is important because incorrect knowledge is associated with higher rates of contraceptive risk taking (Phares, Cui, & Baldwin, 2012).

All three of these barriers are mutually reinforcing and linked. Providers are the gatekeepers of methods. If they face steep costs or reimbursement concerns, they may have little incentive to be trained on methods. If they are not trained or aware of who is an appropriate candidate, they may not increase patient awareness. Patients may not have enough information from providers or from their peers to ask for them. This then leads providers to perceive that the patient is not interested in discussing them or does not want one, which in turn may make them reluctant to offer them onsite. In addition, even if a patient does want one, they may not be able to afford it or may receive care in a site where it is not offered. Thus, limited options, unmet demand, and low levels of information characterize the market for LARCs.

It is also worth noting that there are limited family planning resources in Virginia. VDH estimates that 65% percent of the need for publicly funded family planning services is unmet in the state (Frost, Frohwirth, and Zolna, 2014). If it is difficult to obtain any method, it is likely doubly difficult to obtain a LARC, which layers unique cost, training, and knowledge concerns on top of preexisting access issues. When women who need publicly funded family planning services cannot obtain one, they are more likely to rely on a less effective method or use no method (Sonfield, Hasstedt, and Gold, 2014).

⁷ This is compared to 38% who said they knew little to nothing about the pill and 12% for condoms (Power to Decide, 2015).

THE POLITICAL AND LEGISLATIVE LANDSCAPE IN VIRGINIA

Most successful LARC programs in other states have been privately funded. One reason is that public funding for LARCs specifically and family planning broadly can be a partisan issue. Thus, the political and legislative landscape in Virginia is important to consider.

The General Assembly has considered three budget proposals for LARC in the past three years, beginning in January 2016. Then-Governor Terry McAuliffe proposed using \$9 million in reallocated TANF funds over two years to subsidize the cost of LARCs; distribute them at health department clinics; provide training for clinicians; and conduct a program evaluation. The General Assembly removed this proposal from the budget.

In 2017, Governor McAuliffe put forth the same proposal but with \$6 million. The House removed the \$6 million from its proposed budget, while Sen. Dunnavant attempted to modify it in the Senate. She proposed retaining \$3 million but promoting access to the implant only, not IUDs. She stated that this was an attempt to find compromise between Democrats and conservatives, who believe that IUDs are abortifacients.⁸ Ultimately, a conference committee eliminated the budget proposal for the pilot program.

In 2018, in his inaugural address to the General Assembly, Governor Northam appealed to the General Assembly to help him expand access (Office of the Governor, 2018). Governor Northam has been a champion of this issue for several years. The 2018 budget did contain an appropriation to use \$6 million in one year and \$6 million in the second year from TANF funds to create a two-year pilot program. The House amended this provision when it passed its budget in March 2018 (HB5002 292 #1h, 2018). The amendment that it passed reduced funding to \$4 million in year one and \$2 million in year two. It removed the words “long-acting reversible contraceptives” and instead focuses only on expanding access to the implant. It requires that VDH train providers “to conduct non-coercive reproductive health counseling,” develop a plan to improve awareness and use of Plan First; and develop metrics to measure the effectiveness of the pilot program. As of April 2018, the Senate has not passed a budget, so the fate of this amendment is uncertain.

⁸ Those who believe that life begins at fertilization consider anything that interferes with implantation to be an abortifacient. However, the primary mechanism of action for all LARCs is to prevent fertilization *from occurring in the first place* (ACOG, 2014). For this reason, ACOG does not classify any LARC as an abortifacient. It is also worth noting that the general consensus of the medical community is that pregnancy begins when implantation of a fertilized egg occurs (American Congress of Obstetricians and Gynecologists, 2014; Code of Federal Regulations, 2009; Gold, 2005).

LITERATURE REVIEW

While the CHOICE project and CFPI remain the most well-known efforts to expand access and use, additional initiatives in other states, counties, and right here in Charlottesville have also successfully tackled barriers. These suggest a potential path forward for the rest of Virginia.

Efforts to address insurance reimbursement

South Carolina was the first state to provide LARC reimbursement outside the global fee for private insurance. It serves as a model not only because of the reimbursement policy itself but also because of the way it implemented that policy. Hospitals used a change in insurance to facilitate a wider change in provider training, patient knowledge, and contraceptive counseling.

The South Carolina Birth Outcomes Initiative created an implementation team that consisted of “project champions” in all relative departments of hospitals, ranging from nursing to lactation consultants. Due to these efforts, between 2013 and 2016, the number of patients benefitting from immediate postpartum placement in hospitals in the state increased 500%. Thirty percent of all LARC use in the state can be attributed to immediate postpartum placement. Postpartum contraception is now discussed at each prenatal visit (Burgis and Quinones, 2017).

Reimbursement outside the global fee for private insurance is still uncommon. However, Tennessee recently instituted it, and New Mexico and Utah are conducting research, which suggests that it is gaining momentum.

While data from states has not yet translated an increase in postpartum insertion to a specific reduction in unintended pregnancies, research has. One study found that if women who want an IUD after giving birth are provided one postpartum rather than waiting until their six-week appointments, at least 51 rapid repeat pregnancies are avoided per 1,000 women over two years (Washington et al. 2015).

Efforts to address cost

Approaches have also addressed cost on both the provider and patient side. The Department of Health and Human Services in Illinois worked with two manufacturers to make devices available in physician offices without upfront physician costs. Physicians can purchase the devices and then pay for them after they have been reimbursed (CMS, 2016). This approach overcomes the downsides of the two different methods that are available to bill for LARCs. It eliminates the trade-off associated with the status quo, in which providers can commit to upfront costs and financial risk but provide same-day insertion, or avoid upfront cost and financial risk but not provide same-day insertion.

On the patient side, removing cost as a barrier typically means subsidizing the cost of LARCs. This happened on a statewide level as in Colorado, but it can also happen on a smaller scale. The Take Control Initiative in Tulsa County is one example. Supported by a private grant, it started in 2010 and offers free LARCs for low-income individuals and provides education on options. From 2011-2014, Tulsa County’s teen birth rate dropped 27% more than demographically-similar counties without a program. This resulted in estimated savings of \$300,000 during this time (Putnam, 2017).

A program in Alexandria, Virginia used a similar approach. With grant funding, the Alexandria Health Department offered low-cost LARCs to individuals at health department clinics beginning in

2013. Use at a clinic in Alexandria increased from 15% in 2013 to 77% in 2015. Most family planning patients served at this clinic are uninsured and would otherwise face high out-of-pocket costs (Fain, 2017).

Efforts to address training

In addition to insurance reimbursement and cost, cities and counties have also tackled provider training on both insertion and reproductive counseling. Upstream USA, a nonprofit that helps health clinics provide their patients with a wide range of birth control options, offers a model approach. It addresses training from multiple angles to help ensure that women can have same-day access to whatever method they choose, including LARCs. For instance, it trains physicians and nurse practitioners on how to discuss pregnancy intentions with patients. It works with those in billing to ensure proper reimbursement so a clinic does not lose money when more women choose implants and IUDs. With this intervention, clinics in Worcester, Massachusetts; New York City; and Texas went from not offering LARCs to seeing a 25-40% increase in the number of individuals choosing an implant or IUD. This was accompanied with statistically significant gains in confidence and knowledge for both clinicians and support staff (Edwards, 2015).

Another example is Baltimore's Teen Pregnancy Prevention Initiative. With support from the Abell Foundation, it offered same-day insertion and facilitated training for Title X clinics and FQHCs, which serve a large segment of Baltimore's Medicaid and low-income population. In 2012, no FQHCs in Baltimore offered LARCs, but by 2015, five of the city's six FQHCs did (Abell, 2015).

Finally, one randomized control trial is important to highlight because it connects better training to fewer unintended pregnancies. This randomly assigned forty Planned Parenthood clinics serving 1,500 patients in all geographic regions of the U.S. to receive training on: insertion; LARC-specific ethics issues; examples of how to integrate same-day insertion into clinical practice; and a client-centered counseling model that uses open-ended questions on pregnancy intentions. The typical cost of contraception was maintained at all sites. Compared to women in the clinics that did not receive the education, women in treatment clinics were twice as likely to choose a LARC. The unintended pregnancy rate was 50% lower for women receiving care from the clinics that underwent the training (Harper et al., 2015).

Multifaceted efforts that address cost, training, and patient knowledge

Because different barriers to LARC access and use are connected and perpetuate each other, some interventions have aimed to address cost, training, and patient knowledge simultaneously. Two of these are noteworthy due to their results.

The first is The Iowa Initiative to Reduce Unintended Pregnancies, a privately funded project that ran from 2007-2012. Modeled off CFPI, it provided all methods of birth control at no cost at Title X clinics. It also trained clinicians and staff and involved public outreach (HHS, 2012). From 2007 to 2012, an increase of one new LARC user per 100 women in the region was associated with a 4% decline in abortions each year (Biggs et al., 2015). A benefit-cost analysis concluded that over 5 years, this program saved \$17.23 for every dollar spent on contraception (Udeh, Losch, and Spies, 2009).

The second multidisciplinary example is Delaware Contraceptive Access Now (CAN), which is a statewide public-private partnership that launched in 2016. Delaware is the second state to devote public funds to expanding LARC access. The Governor at the time, Jack Markell, was critical to securing state support. Delaware reallocated \$1.75 million from the public health budget for the

initiative and raised slightly over \$8 million from three private sources.⁹ The state partnered with Upstream, which over 14 months trained all Title X centers and the largest private providers in the state. The money also provided no-cost birth control to women at Title X clinics (Upstream, 2017).

From 2014 to 2016, a 14% increase in LARC use was offset by a decrease in the use of hormonal methods and a slight decrease in no method use. The overwhelming majority of women receiving care reported that they felt their providers listened to them and that they did not feel pressured to choose any specific method. The impact on unintended pregnancy rates is still being collected. However, the state created a simulation informed by actual behaviors to estimate the effects. Before this program, the state closely followed national trends. The unintended pregnancy rate in Delaware decreased 15% from 2014 to 2016, compared with 1.7% in the U.S (Upstream, 2017).

UVA Teen and Young Adult Health Center: A Case Study

The UVA Teen and Young Adult Health Center in Charlottesville portrays what LARC use may look like if access were relatively unimpeded. Due to the efforts of its nurse practitioners, Mirena and Nexplanon are stocked and offered on the same day for those who do not require pre-authorization. Nurse practitioners have provided training in the community through educational sessions for UVA medical faculty and UVA nursing students. They also conducted targeted outreach to individual practices within the region that could refer patients for placement. Due to these efforts, from October 2013 to March 2014, Nexplanon and Mirena placements increased 29% at the UVA Teen and Young Adult Health Center. LARCs are one of the most commonly used method among all patients, which is noteworthy given that only about 7% of teens and young adults use LARCs on average (UVA Teen and Young Adult Health Center, 2014).

All of these efforts reveal possible options for making it easier for patients to seek LARCs, providers to recommend them, and health sites to facilitate easy access to them.

⁹ These include: the Robert Wood Johnson Foundation, the William and Flora Hewlett Foundation, and the Silicon Valley Community Foundation

EVALUATIVE CRITERIA

I present four alternatives to expand access to LARCs in Virginia. These are based on literature, evidenced-based examples from other states, and interviews with stakeholders, including individuals at VDH, providers at the UVA Health System, and reproductive health policy experts (see Appendix D for a list of interviews). Each option is evaluated based on the following six criteria.

Percent reduction in unintended pregnancy

I assess the percent reduction in unintended pregnancies among the people whom an option will reach per year. One fact to note is that public-private partnerships often get up and running in the first year, so looking at one year in isolation will underestimate the effect for this type of option. Therefore, I assess this type of program both at one year and over time. I assign a weight to this option of 30%.

Cost

I consider costs to execute the option. I also consider cost savings from avoided medical expenses from pregnancy, birth, and infant care up to 12 months due to the reduction in unintended pregnancy. Cost savings is measured as an annual average. I assign weights of 10% to costs and 10% to cost savings.

Women reached

I estimate how many individuals each policy will reach and then calculate this as a percentage of women in Virginia of reproductive age (15-44) and the percentage of women who are in need of contraceptive services and supplies. I assign this criterion a weight of 20%.

Multidimensionality

Due to the multifaceted nature of this issue, I value options that either have means of addressing several barriers naturally embedded within them *or* those that focus on one barrier but in implementation can be readily combined with an initiative that addresses another. I measure multidimensionality on a three-point scale. Each option receives one point for each dimension of the issue it addresses: cost and insurance concerns; provider training on insertion and appropriate candidates; and patient knowledge. This has a weight of 10%.

Conditional political feasibility

I measure conditional political feasibility by assigning a probability value to each option. This represents the probability that the key decision-makers will act on the option. This has a weight of 10%.

Equity

While access can be an issue for all women, low-income and uninsured women face unique challenges because of the high method cost and limited publicly funded family planning resources in Virginia. To measure equity, I set as the target population individuals in need of publicly funded family planning services. I then assign to each alternative a number that represents the share of the target population affected by that alternative. My inclusion of equity as a criterion hinges on the fact that all of these alternatives promote all methods. This functions to help balance the priority of addressing access while also ensuring that care is provided in a consistent and individualized way. I assign this a weight of 10%.

EVALUATION OF POLICY ALTERNATIVES

Option 1: Advocate for private payers to unbundle postpartum LARC from the global fee

This option would allow hospitals to bill for the LARC device and insertion outside of the global fee for women on private insurance. About 60% of births in Virginia are paid for by private insurance. Postpartum LARCs reduces the risk of unplanned pregnancies and improves the health of newborns and mothers by facilitating healthy spacing between pregnancies (White et al., 2015; Han, et al., 2014).

I propose focusing on Anthem to begin with because it covers 40% of Virginians, and once one insurance company changes its policy, others will likely follow. There is no regulation that prevents unbundling. Rather, this would involve advocating for private payers to agree to a change in their payment structure. The LARC Workgroup is well-situated to help lead on advocacy efforts. This policy is already on its agenda but it is sometimes not seen as a pressing issue by people not immersed in this topic. Therefore, it could benefit from a political leader raising awareness of it. This also offers an opportunity to correct for lack of awareness among providers that still exists following the Medicaid change. By bringing consistency to the billing process, this option could also have positive spillover effects on Medicaid enrollees.

Percent reduction in unintended pregnancies

I use estimates of reduction in unintended pregnancy from the literature. This option reduces unintended pregnancies by 3.2% per year (Garipey et al., 2015; Washington et al., 2015) (See Appendix E).

Cost

This option requires \$37,000 for implementation, which is the cost to VDH employees of coordinating with Anthem, planning, and helping with implementation. I draw my cost savings from the literature. According to two studies examining postpartum implant and IUD insertion, this option would save \$462,000 per year (Garipey et al., 2015; Washington et al., 2015) (See Appendix E).

Women reached

This option would reach 4% of women of reproductive age in Virginia and 6% of women in need of contraception. However, these estimates are likely biased downward because they do not account for positive externalities for Medicaid enrollees (See Appendix E).

Multidimensionality

As the model from South Carolina demonstrates, a change in postpartum LARC reimbursement provides an opportunity to address provider training and patient education. Training for the IUD and the implant can be conducted through an in-service for providers in the hospital. The champion model can also address training in different departments. It increases patient knowledge through prenatal and postnatal counseling. This option thereby addresses three dimensions of this issue (cost and insurance, provider training, and patient knowledge). It scores a three on multidimensionality.

Political feasibility

The topic of postpartum LARC has extant momentum behind it. Thirty-six states have unbundled in some way for Medicaid, and the next step is likely to work on private insurance. According to some reproductive health policy experts, the reason that private insurance companies are reluctant to unbundle is that they want to see information on cost savings within a specific healthcare system and within a specific state (Coy, personal communication). There is little reason to believe cost-effectiveness estimates from the literature would be different in Virginia. Yet, the LARC Workgroup can reach out to the health departments in South Carolina, Tennessee, Utah, and New Mexico, which have implemented it or are assembling research to see if they have data.

Yet, it is unclear exactly how persuasive Anthem would find this information. The key to Medicaid unbundling was that MCO leaders were active participants in maternal and child health initiatives in Virginia, including infant mortality reduction and the LARC Workgroup. Therefore, I propose identifying a leader at Anthem who could advocate for this issue internally. One fact that makes this policy more feasible is that it does not require legislative approval. I estimate that there is a 60% probability of this being enacted.

Equity

While this policy rectifies an inequitable situation in which one type of insurance has postpartum reimbursement and one does not, it does not alone address issues for low-income or uninsured women. It has an equity score of 0.

Option 2: Advocate for a pilot program that helps smaller providers stock LARCs

This option is modeled from the pilot program in Illinois, in which the Illinois Department of Health worked with manufacturers to make products available in physician offices without upfront costs. This option would be targeted primarily at ob-gyns and family practice physicians in private practice. These are groups most likely to lack upfront capital. In addition, of women receiving contraceptive services in the past year, 69% received those services from a private doctor (Frost, 2013). A benefit of having this focus on both ob-gyns and family practice physicians is that it can potentially reach individuals who live in ob-gyn shortage areas and therefore are likely to rely on family practice physicians for reproductive healthcare. Fifty-three of Virginia's 134 counties do not have any ob-gyns (ACOG, 2014).

This pilot program can focus on providers who are already offering LARCs but cannot afford to stock them. This is advantageous for two reasons. One, it satisfies a demand for same-day insertion that already exists but is going unsatisfied. Two, manufacturers may be more willing to work with sites that already have the training and the patient interest.

Reduction in unintended pregnancy

This program would lead to a 3% reduction in unintended pregnancy. I used estimates from the literature that about 45% of women who want a LARC do not return for a second visit (Bergin et al., 2012). I conduct several forms of a sensitivity analysis to account for some uncertainty about generalizability and take an average estimate (See Appendix F).

Cost

Cost to implement involves individuals at VDH conducting the survey, working with the manufacturer, working with providers to estimate stock, and designing and conducting an evaluation of the pilot program. This amounts to \$79,000 (See Appendix F).

Based on unintended pregnancies avoided, I estimate this option will save \$3.2 million per year (See Appendix F).

Women reached

Based on the number of women who seek care from ob-gyns and physicians in private practice and the number of those that offer LARC, this option would reach 13% of women of reproductive age in Virginia and 21% of women in need of contraception (See Appendix F).

Multidimensionality

This option addresses one dimension: cost. It scores a one out of three on multidimensionality.

Political feasibility

This option does not require legislative approval. However, the fact that this seems to have existed only in one state either means that no other states have tried it or manufacturers do not want to expand it. I estimate there is a 50% probability of this being created.

Equity

Five percent of uninsured women and 17% of women enrolled in Medicaid who received contraceptive care in the last year saw a private provider for that care (Frost, 2013). Equity for this option is 0.22.

Option 3: Propose using a Section 1115(a) demonstration waiver to help Medicaid providers stock LARCs

Section 1115(a) waivers provide states an avenue to test and implement research projects that explore new approaches of providing Medicaid care. States can obtain comprehensive waivers, which make broad changes in Medicaid eligibility, or narrow waivers that focus on specific services, such as family planning (Kasier Family Foundation, 2016).

In a 2016 letter to state Medicaid directors, the Centers for Medicare and Medicaid Services (CMS) proposed a way to use Section 1115 to ensure that providers who supply family planning services to Medicaid enrollees have a stock of LARCs (CMS, 2016). States would incur an administrative expense to purchase a batch of LARC devices (for example, a month's worth of devices, leveraging the 90% federal match) and supply them to Medicaid providers who offer LARCs, without cost to the provider. The provider would then be able to offer same-day insertion. Unlike with the status quo, they would not bill the state for the device, but only for the insertion and removal. The state would then replenish supply once it has run out.

This proposal aligns with 2017 legislation in New Jersey, which called for the Department of Human Service to implement a state Medicaid payment strategy to make LARCs more available. As part of that aim, it directed the Commissioner of Human Services to apply for waivers as necessary (S2918).

CMS also points out that in addition to delivering LARCs in a more timely and efficient manner, this option lets providers use funds that would otherwise be invested in inventory to improve services (CMS, 2016). Waivers are approved and renewed through negotiations between a state and the Department of Health and Human Services (HHS). They are typically approved for an initial five-year period and then renewed for five years. They have to be budget neutral for the federal government, and they must be formally evaluated, which would be a benefit because data on LARC use is lacking in Virginia. At present, Virginia has two Section 1115(a) waivers: the Virginia Governor's Access Plan (GAP) and Addiction and Recovery Treatment Services (ARTS) Demonstration. These provide care for low-income individuals.

While private providers do see Medicaid enrollees, I propose that this option focus on enabling public clinics to stock devices at least initially. The reason is that nationally, 37% percent of Medicaid enrollees who received contraceptive services in the prior year went to a publicly funded clinic, compared to 17% for a private doctor. Also, 71% of Medicaid enrollees report that a public clinic is their usual source of medical care. There are 241 safety-net clinics in Virginia.

Percent reduction in unintended pregnancies

Using the same methodology in the previous section, I estimate that this would reduce unintended pregnancies by 3.8% (See Appendix G).

Cost

Cost to implement involves the cost of DMAS employees working with HHS to create the waiver and design and run an evaluation. It also involves the administrative cost incurred by the state with the 90% match. This is \$534,000 (See Appendix G).

Cost savings for this option are \$3.8 million per year (See Appendix G).

Women reached

Based on the number of women who seek care from publicly funded clinics and the number of those individuals enrolled in Medicaid, this option would reach 3% of women of reproductive age in Virginia and 6% of women in need of contraception (See Appendix G).

Multidimensionality

This option addresses one dimension: cost. It scores a one on multidimensionality.

Political feasibility

On the state level, there is support for this option, and the relevant parties already have experience with Section 1115 waivers. It is also highly likely that Governor Northam would support it. Additionally, the fact that this option is cost saving can augment its appeal. However, on the federal level, feasibility is much more uncertain. Under the current administration, HHS has attempted to expand exemptions for the contraceptive coverage guarantee and made offering abstinence information a condition of receiving Teen Pregnancy Prevention funding. There is also evidence that the administration is using Section 1115 waivers to restrict eligibility, rather than expand it (Rosenbaum et al., 2018). Also, no states seem to have yet used a Section 1115(a) waiver in this way.

I rate the probability at the state level a 75%, and the probability at the federal level a 10%. I weight federal probability more (0.75) than state probability (0.25) because this option hinges on federal approval. This option has a cumulative probability of approximately 15%.

Equity

Thirty-seven percent of women on Medicaid who received contraceptive care in the last year went to a public clinic (Frost, 2013). Equity for this option is 0.37.

Option 4: Advocate for a provider training initiative

This option is model off the Upstream USA model, the Baltimore FQHC initiatives, and the Harper et al. (2015) study, which trained providers on how to insert devices, used a tiered efficacy model for presenting birth control options, and used the One Key Question. The One Key Question approach asks individuals the question, “Would you like to become pregnant in the next year?” This question allows for ambivalence, which is associated with higher rates of contraceptive nonuse (Frost, Singh, and Finer, 2007). It identifies 20% more women at risk for unintended pregnancy than the typical question, “Do you plan to become pregnant in the next year?” (Oregon Health Authority, 2016). These training efforts have proven successful in a wide variety of geographic contexts. Even if the 2018 budget provision passes, there will still be a need for training in the state. This includes training for the IUD given that, due to House amendment, the budget at present focuses on only the implant.

This would use private funding to offer training for providers who most need it: pediatricians, family practice physicians, and providers at FQHCs.

UVA, Virginia Commonwealth University (VCU), and Virginia Tech Carilion School of Medicine and Research Institute have expressed an interest in training. These three healthcare systems could partner with VDH to organize the initiative. This could involve: sending out a survey to determine the number of providers who will attend session; using a mentor model; and working with the manufacturer to organize sessions for the implant. I also propose starting with six FQHCs, the same as the Baltimore program, to get started and serve as a model for eventual expansion.

Incorporating these healthcare systems is advantageous because it offers the opportunity to also train pediatric and family medicine residents and therefore correct for educational gaps that can emerge in medical education. Table 4 gives an overview of the potential reach for residents.

Table 4: Potential Reach of Provider Training Initiative for Residents

Location	Number of Pediatrics Residents	Number of Family Medicine Residents	Total
UVA	37	24	61
VCU	65	95	160
Carilion	19	60	79
Total	121	179	300

Source: UVA, VCU, and Carilion, 2018.

This training would ideally be accredited as a continuing medical education seminar, which providers are required to attend to maintain their medical licenses. Legislation in Massachusetts has also emphasized making LARC training eligible for continuing medical education credits (SB 507).

Percent reduction in unintended pregnancies

Based on uptake percentages from the program in Baltimore and the Harper et al. (2015) study (9.4%), this option reduces unintended pregnancies among the target population by 13% (See Appendix H).

Cost

Training at six FQHCs would require \$90,000, based on Abell Foundation grants in Baltimore (Abell Foundation, 2015). For training for residents, pediatrics, and family medicine physicians, the Family Planning National Clinical Training Center offers trainings in insertion methods for \$75 per non-Title X provider. Implant trainings are provided for free by the manufacturer. Using these estimates, this would cost \$165,000 (See Appendix H).

This option saves \$3.15 million per year (See Appendix H).

Women reached

This option would reach 1% of women of reproductive age in Virginia and 1.2% of women in need of contraceptive services and supplies (See Appendix H).

Multidimensionality

This option addresses two dimensions: training and patient education through that training. It scores a two on multidimensionality.

Political feasibility

Private funding for training is well-established, and some areas of Virginia have used it to promote access to LARCs in the past. Yet, it is unclear whether residents will be receptive to training or see training in family planning as unnecessary. Given the reasonable likelihood of securing a grant but uncertainty about receptivity, I estimate that this option has a 50% probability of being enacted.

Equity

17% of Medicaid enrollees and 4% of uninsured women who received contraceptive care in the last year went to private doctor (Frost, 2013). FQHCs met 9% of the need for publicly funded family planning services. This option has an equity score of 0.31 (Zolna and Frost, 2016).

Option 5: Advocate for a combined voucher-training program that will be funded privately initially and then have a public phase-in

This option draws upon the success of CFPI, Delaware CAN, the Take Control Initiative, and the CHOICE Project. It will consist of three elements. The first is a voucher program that subsidizes the cost of *all birth control methods* for women below 249% of the FPL and offers counseling on these methods. I propose that this take place at Title X clinics. At these sites, 68% of the patients are uninsured (HHS, 2016). Twenty-nine percent of all patients have to pay either some or all of the cost of a method because they make above 139% of the FPL (HHS, 2016). These centers are particularly critical for those most likely to fall through the cracks of the healthcare system. Also, 82% of women at these sites use a moderately effective method or no method (HHS, 2016). Thus, this both leverages existing pathways and serves people who face some of the biggest obstacles.

The second element of this program is training at public clinics and a subset of private providers in the state. The third element is a formal evaluation of the program. The University of Maryland and the University of Delaware are leading the assessment of Delaware CAN. I propose that UVA and VCU lead this evaluation.

As the 2018 House budget amendment shows, there is not support for all LARCs among members of the House of Delegates and Senate at this time. This option uses a more feasible funding source in the short-term and then appeals for public funding when there is both evidence of success and a greater sense of urgency. If an initiative can get kickstarted with private funding and then demonstrate success in terms of Medicaid savings and reduction in unintended pregnancies, the costs of not funding it become more apparent. Colorado exemplifies this. Unlike the current budget amendment, this option does not reallocate TANF funds, which serve low-income individuals.

Also, the fact that the voucher program subsidizes all methods and not LARCs specifically may mitigate some ideological opposition because it frames it in a way in which support is for family planning broadly, not LARCs specifically. Family planning is still contested, but slightly less so than LARCs. Also, subsidizing all methods gives people options, rather than steering them toward one method exclusively.

There is precedent for public-private partnerships that offer healthcare services in Virginia. The Virginia Healthcare Community Foundation is one example. It helps uninsured Virginians and those who live in underserved communities receive medical, dental, and mental health care.

Both of these efforts would run privately for two years, which aligns with the biennial budget cycle in Virginia. After this, legislation could be put forth to have a 50% public phase in. I arrive at that number based on the following:

The House budget amendment allocates \$4 million in year one and \$2 million in year two to an implant pilot program. Given that the first number resembles seed funding, I use the second number as a rough proxy for government willingness to pay to maintain a program per year. Delaware CAN involves \$5 million per year over two years. Based on past examples, it is rare to raise above \$15 million in private funding. Using this limitation, the Delaware CAN numbers, and willingness to pay, I propose a \$15 million program: \$5 million in the first year, \$5 million in the second year, and \$5 million in the third year (\$2.5 private and \$2.5 public).

With \$10 million, Delaware CAN stocked devices at all Title X clinics in the state. There are 28 clinics, which served an average of 14,314 individuals each year between 2014-2016. It also provided training at 42 different provider sites. Scaled up by an additional \$5 million that this option provides, a program in Virginia could serve 21,000 women and train 60 provider sites.

I propose that this voucher program run specifically in counties in which there is a high percentage of uninsured women who make between 139-249% FPL and therefore would otherwise face some cost to obtaining a device. If this program aimed to reach clinics serving a total of 21,000 women per year, it could reach 26 counties that have the highest percentage of uninsured women whose income is between 139-249% of the FPL in the state (Guttmacher, 2017). The median percent of women uninsured in those counties is 27% compared to the statewide median of 22% (Guttmacher, 2018). This could also serve as a model before possibly expanding the program.

Percent reduction in unintended pregnancies

Based on estimates from Delaware CAN and CFPI, this option could reduce unintended pregnancies by 5.5% over one year and 10% over two years (See Appendix I).

Costs

This option would cost \$15 million for three years and save \$13 million per year (\$39 over three years) based on CFPI estimates (See Appendix I).

Women Reached

This would reach 1.2% of women of reproductive age in the state and 2.1% of women in need of contraceptive services (See Appendix I).

Multidimensionality

This option is a three on the three-point multidimensionality scale. It addresses all dimensions of the issue: cost, training, and patient knowledge through that training.

Political feasibility

One potential outcome of this option is that when the time comes for public phase-in, Republicans in the General Assembly will single out the IUD and oppose subsidizing it specifically. If the Senate includes funding for the pilot program in its budget and that program is successful, this may mitigate political resistance to LARCs. Alternatively, it could simply convince people that making the implant alone accessible is sufficient. Due to this uncertainty of political approval but the likelihood of gaining private funding, I estimate that this has a 20% probability of being enacted.

Equity

37% of Medicaid enrollees and 24% of uninsured women who received contraceptive care in the last year went to a public clinic. Therefore, this option has an equity score of 0.61 (Frost, 2013).

OUTCOMES MATRIX

Table 5 summarizes how each option ranks against the evaluative criteria.

	Postpartum Unbundling	Stocking Pilot Program	Section 1115(a) Waiver	Provider Training Initiative	Public-Private Partnership
Percent reduction in unintended pregnancies among affected population per year (0.3)	3.2%	3%	3.8%	13%	5.5% over 1 year 10% over 3 years
Costs					
<i>Cost of initiative</i> (0.1)	\$37,000	\$79,000	\$534,000	\$165,000	\$15 million
<i>Cost savings (annual average)</i> (0.1)	\$462,000	\$3.2 million	\$3.8 million	\$3.15 million	\$13 million
Women Reached (0.2)					
<i>% of women of reproductive age reached</i>	4%	13%	3%	1%	1.2%
<i>% of women in need of contraception reached</i>	6%	21%	6%	1.6%	2.1%
Multidimensionality (0.1)	3	1	1	2	3
Conditional Political Feasibility (0.1)	60%	50%	15%	50%	20%
Equity (0.1)	0	0.22	0.37	0.31	0.61

RECOMMENDATION

Based on this analysis, I recommend advocating for the voucher and training program that will be funded privately initially and then have a public phase-in. This is fully multidimensional, generates the most cost savings, and has a notable decline in unintended pregnancies. It also provides services to people who face the most significant obstacles to obtaining LARCs. This approach has a strong record of success in numerous other states. In addition, the formal evaluation contained within this option helps address the lack of data on LARC use in the state.

The trade-off with this option is its political feasibility. However, a record of success in the first two of the program may mitigate opposition. Political opposition in Colorado has subsided after two years of public funding for CFPI. In addition, the fact that cost savings could be allocated back into the program would be appealing to those sensitive to public funding.

NEXT STEPS

Private funding could be provided by one large donor, as was the case in CFPI and the Iowa Initiative to Reduce Unintended Pregnancies. It could also be provided by several small donors. A first step in securing this funding would be to assess the availability of private funding in Virginia. This could involve reaching out to other organizations running public-private partnerships in the state and raising awareness of this issue among other members of the General Assembly. Governor Northam is highly likely to support this option. There is already preexisting private and public support for family planning. Leveraging both of these will help generate individual and aggregate gains.

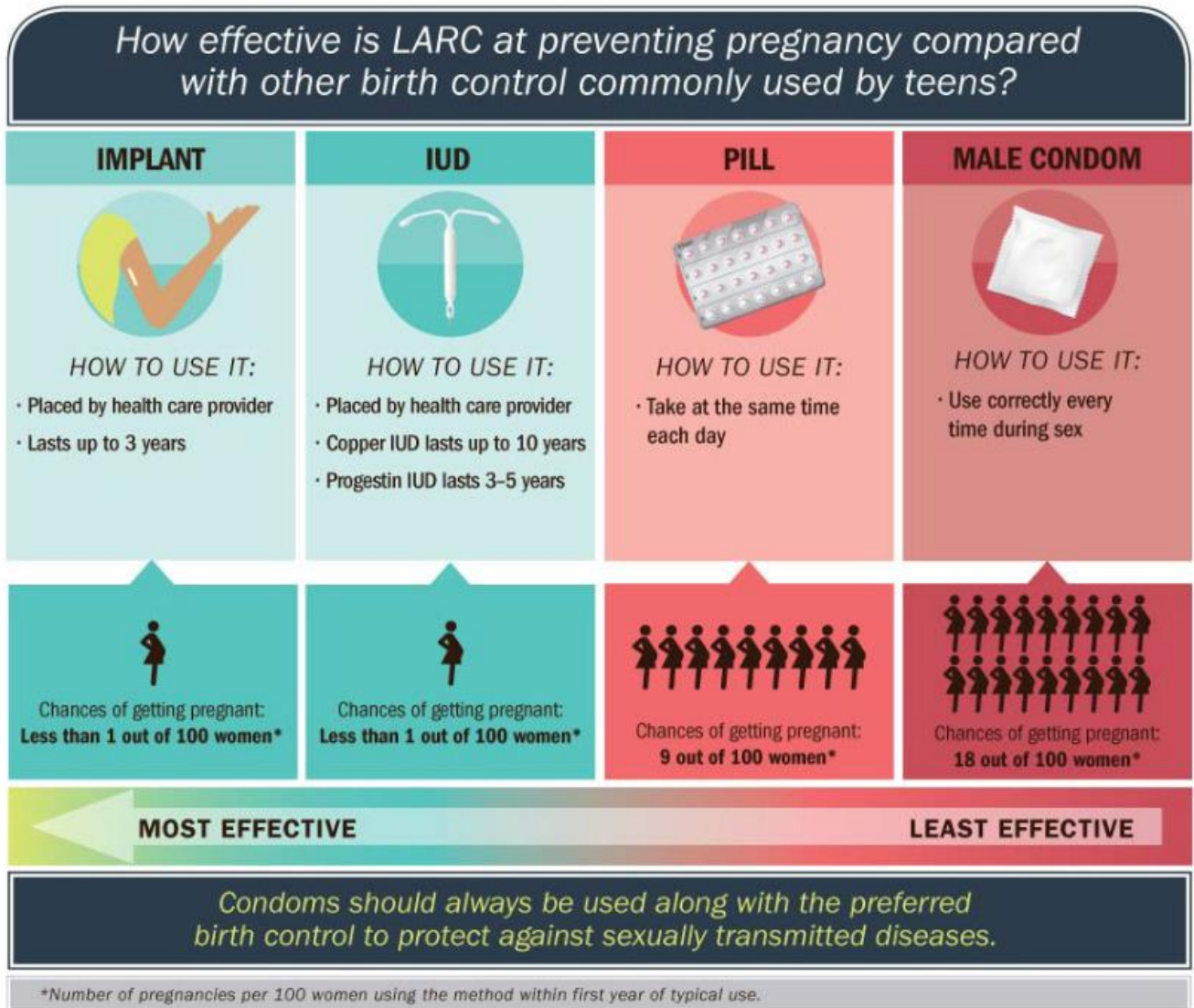
APPENDIX A: OVERVIEW OF LARC METHODS

Name	Type	FDA Approved Use	Unique Features
Mirena	Hormonal IUD	5*	Has been on the market the longest. FDA-approved for the treatment of heavy menstrual bleeding.
Skyla	Hormonal IUD	3	Smaller width. Releases fewer hormones on a daily basis, which means reduced chance of amenorrhea (loss of period).
Liletta	Hormonal IUD	3*	Pharmacologic equivalent to Mirena but developed to be less expensive for women visiting family planning clinics who are either on Medicaid or lack health insurance.
Kyleena	Hormonal IUD	5	Same narrow device & inserter as Skyla, but 5 years of approved use. Reduced chance of amenorrhea.
ParaGard	Copper IUD	10*	Option for women who cannot or prefer not to use hormonal contraception. Continued regular periods.
Nexplanon	Implant	3	For women who prefer a subdermal device rather than a uterine device.

*There is a growing body of evidence suggesting these methods may be effective longer than their FDA-approved use: 6 years for Mirena, 5 years for Liletta, and 12 years for ParaGard.

Source: Parks, 2016.

APPENDIX B: BIRTH CONTROL METHOD COMPARISON



Source: CDC, 2018

APPENDIX C: STATE LEGISLATION TO ADDRESS LARC ACCESS

Provision of free methods

HB 6180 was introduced in Connecticut in 2017 and proposed to reallocate \$800,000 in Medicaid funding to a pilot program to offer free implants to 1,000 Medicaid recipients to replicate CPFI and the CHOICE Project, reduce Medicaid expenditures of unintended pregnancies, and improve infant health outcomes. This bill did not move beyond the Human Services Committee (HB 6180, 2017).

Medicaid payment strategies

In 2017, SB 2918 in New Jersey called for the Department of Human Service to implement a state Medicaid payment strategy to make LARCs more available. This payment strategy included: patient-centered counseling, reimbursement for postpartum insertion, and removing logistical barriers for supply, and removing administrative barriers for provision. This bill called for the Department of Human Service to require all MCOs to implement these payment strategies. It also directed the Commissioner of Human Services to apply for SPAs or waivers as necessary. This did not make it out of the Senate Budget and Appropriations Committee.

Training and same-day insertion

SB 507 was introduced in Massachusetts in 2017 and stated that reimbursement for LARC would be separate from other services in an outpatient setting. It also aimed to increase the maximum reimbursement rate for insertion and removal by \$299. It called for the public health department to develop a training program to address best practices for patient counseling, implant placement and removal, and addressing administrative barriers. The training was intended to be eligible for continuing medical education credits to the fullest extent possible. Like the Connecticut and New Jersey bills, this did not make it out of committee.

Tennessee is perhaps the most notable example because its legislation promoting LARC passed. HB 1320 and its companion SB883 was introduced in 2017 and required the health department to administer a program that includes training for family planning clinics on methods, non-coercive counseling strategies, insertion, and removal. It also specified that the health department provide general financial support to provide and stock LARCs to ensure same-day access; provide public outreach and education; and conduct a study on making contraceptive methods available over-the-counter or directly through pharmacies. This bill passed both the House and Senate.

APPENDIX D: INTERVIEWS

I spoke to the following individuals in completing this analysis:

- Dr. Sulola Adekoya, Virginia Department of Health
- Emily Yates, Virginia Department of Health
- Dr. Tonya Katcher, Advocates for Youth
- Heather Payne, NP, UVA Teen and Young Adult Health Center
- Dr. Christian Chisholm, UVA Health System
- Lauren Coy, National Institute for Reproductive Health

APPENDIX E: ESTIMATES FOR UNBUNDLING OPTION

Percent reduction in unintended pregnancies

This estimate is from the literature. Two studies examine immediate postpartum insertion: one for the implant and one for the IUD. relied on rates of insertion, removal, continuation, expulsion, and use of alternative contraceptive methods from a comprehensive literature review. There is not a reason to suggest these estimates would differ markedly in Virginia. Garipey et al. (2015) found that the expected pregnancy rate for women who receive delayed insertion is 19 percentage points higher than those who receive the implant immediately in one year. Washington et al. (2015) found that the expected pregnancy rate for women who receive delayed insertion is 5.1 percentage points higher than those who receive an IUD immediately. I created a weighted average of the percent reduction in unintended pregnancies. This is based upon the percentage of LARC use for which each method accounts.

$$(.9)(.51) + (.1)(.19) / 2 = 3.2\%$$

Costs

Execution costs

In South Carolina, it took about one year from desiring a change in reimbursement policy to achieving it. I estimated that three individuals in VDH would spend the same amount of time in discussions with private insurance companies, at two hours per month each. The three hospitals that participated in preparing the postpartum LARC toolkit in South Carolina reported that the planning and implementation process for instituting postpartum LARC services took about six months. I estimated that VDH employees would spend 10 hours per week on this effort during that time.

According to the Bureau of Labor Statistics, the mean hourly wage for a health services manager is \$47.29 (BLS, 2018).

$$(792)(\$47.29) = \$37,453.$$

Cost savings

Garipey et al. (2015) estimated cost savings of \$1,263,000 per year in 2014 dollars. I used the Consumer Price Index to convert this to 2018 dollars, which is \$1,347,435. The percent reduction in unintended pregnancies is 73% lower in the Washington et al. (2015), study, which translates to \$363,807. I created a weighted average to determine annual cost savings based upon the percentage of LARC use for which each method accounts.

$$(.9)(363,807) + (.1)(1,263,000) / 2 = \$462,170$$

Women Reached

To calculate how many women in Virginia would be reached with counseling and accurate information due to this change, I took the following steps:

- 1.) There were 102,187 births in Virginia in 2015 (VDH, 2015). The birth rate remained relatively stable for 2014 and 2015.
- 2.) 65% of births are paid for by private insurance per year, so $(0.65)(102,187) = 66,422$ births paid for by private insurance per year

- 3.) In the U.S., 3.52% of births were multiple births in 2015.
- 4.) In the absence of state data, I assume this is true for Virginia. Subtracting out 3.52% (2,338 births) of 66,422 births leaves 64,084 women who give birth and had private insurance per year.
- 5.) There are 1,684,883 women of reproductive age (15-44) in Virginia according to the latest data from VDH (VDH, 2015).
- 6.) $66,422/1,684,883 = 3.8\%$ of women of reproductive age reached
- 7.) In 2014, 996,530 women of reproductive age were in need of contraceptive services and supplies (Frost, Frohwirth, and Zolna, 2016).
- 8.) $66,422/996,530 = 6.43\%$ of women in need of contraceptive services and supplies

APPENDIX F: ESTIMATES FOR PILOT PROGRAM STOCKING

Percent reduction in unintended pregnancies

The basis of my estimates is a study that examined women enrolled in Medicaid at an urban university-based clinic. It found that of women who requested IUDs at an initial visit, only 54.4% actually obtained one (Bergin et al., 2012). However, it is highly uncertain the extent to which these drop-off rates apply to the population of women in Virginia who seek care at a private doctor, most of whom have private insurance. Therefore, sensitivity analysis is important.

Table F1 summarizes reduction in unintended pregnancies applying the Bergin et al. (2012) estimate of 54% lost to follow up to the population of women that this pilot program would affect. This option would reach 95,060 women. I assume that 11.6% of these women would request a LARC based on the percent of women using contraception who use LARCs in the U.S. I also assume that of the individuals who do not get a LARC, 11.6% will come back for a LARC. No data exists on what percent of women who do not return for a second visit due to lack of same-day insertion return. Therefore, I estimated 11.6% would return based on the percentage of women who use LARCs in the U.S.

I assumed 6% will use no method, which is the number of women using contraception in the U.S. who do not use a method. I assume for simplicity that the remaining 83% will use some short-acting method with the failure rate of the pill. In reality, women use different short-acting methods and switch between them, but estimating the probability for every single short-acting method can be complex. However, the failure rate for the pill is lower than other short-acting methods, so this likely underestimates the reduction in unintended pregnancy.

I estimate unintended pregnancies by converting the total number of women using each method to 100 units and then using the failure rates associated with typical use: 85% for no method and 9% for the pill.

Table F1: Estimated Reductions in Unintended Pregnancy Per Year with 45.4% Lost to Follow Up

	Request LARC	Obtain LARC	Unintended Pregnancies from LARC (Received Initially and Returned)	Unintended Pregnancies from Pill and No Method	Total Number of Unintended Pregnancies
No same-day insertion	11,026	11,026	1	6,700	6,700
Same-day insertion	11,026	5,954	1	6,320	6,322
Difference		5,072	0	381	379
Percent Reduction					-6.6%

Same-day insertion is associated with a 6.6% reduction in unintended pregnancies using this estimate.

I also conducted a sensitivity analysis in which I decreased the percentage of women lost to follow up by 40%, 50%, 60%, and 70%. The results are displayed in **Table E2**.

Table F2: Estimated Reductions in Unintended Pregnancy Per Year with Sensitivity Analysis

Percent Lost to Follow Up	% Increase from Original Estimate	Difference in Unintended Pregnancies Per Year	Reduction in Unintended Pregnancy Per Year
25%	40%	205	3.2%
19%	50%	155	2.4%
14%	60%	114	1.8%
9%	70%	72	1.1%

I calculated the average of all reductions in unintended pregnancy, which is 3%.

Cost

Execution costs

I estimated that 3 individuals at VDH would work on this initiative, possibly across the LARC Workgroup and any individuals involved in maternal and child health. I estimate that they each would spend: 10 hours creating a survey; 10 hours analyzing it; 5 hours per week coordinating with manufacturers for 6 months; 5 hours per week coordinating with providers for six months; and 60 hours each conducting an evaluation. According to BLS, the average hourly wage for a health services manager is \$47.29 (BLS, 2017).

$$(1680 \text{ hours})(\$47.29) = \$79,000$$

Cost savings

For the cost for each unintended pregnancy, I used the cost of direct medical expenses from pregnancy, birth, and infant care up to 12 months, which is \$15,883 in Virginia (Sonfield and Kost, 2015). I then calculated the difference between the total costs of unintended pregnancies with same-day insertion and the total costs of unintended pregnancies without same-day insertion under various lost-to-follow-up rates. I calculated an average of these cost savings to arrive at a total of \$3.2 million. **Table E3** contains the amounts under different scenarios.

Table F3: Cost Savings Per year with Sensitivity Analysis

Percent lost to Follow Up	Total Cost Savings Per Year
45.6%	\$7.1 million
25%	\$3.3 million
19%	\$2.5 million
14%	\$2.1 million
9%	\$1.2 million

Women reached

- 1.) There are 730 ob-gyns in Virginia, and 19% of ob-gyns in the U.S. are in private practice, so $(730)(.19) = 139$ in private practice (Rayburn, 2017).
- 2.) About 89% of ob-gyns offer LARC (Sonfield, 2007). I did not have data on whether this number is different for those in private practice, so I assumed it is the same. $(139)(.89) = 123$ offering LARC.
- 3.) There are 4,530 family and general practitioners in Virginia, and 52% of those in the U.S. are in private practice, so $(4,530)(.52) = 2,356$ in private practice (National Health Statistics Report, 2017).
- 4.) About 25% of family and general practitioners offer LARC (Sonfield, 2007). I did not have data on whether this number is different for those in private practice, so I assumed it is the same. $(2,356)(0.89) = 589$ offering LARC.
- 5.) I did not have data on what percent of ob-gyns in private practice in Virginia stock LARC, but given the high upfront costs, I estimated that none were.
- 6.) An ob-gyn sees 1,482 contraceptive patients per year on average.
- 7.) A family practitioner sees 52 contraceptive patients per year on average.
- 8.) All contraceptive clients being served at an ob-gyn and family practitioner in Virginia at offices that do not stock LARCs = 212,914
- 9.) Women of reproductive age reached = $212,194/1,684,883 = 12.64\%$
- 10.) Women in need of contraceptive services and supplies = $212,194/996,530 = 21.37\%$

APPENDIX G: ESTIMATES FOR SECTION 1115(A) WAIVER

Percent reduction in unintended pregnancies

Because the aim of this policy is also to enable providers to stock devices, I use the same methodology as in the previous section. However, I limit my sensitivity analysis to 40%, 50%, and 60%. This is because this policy option targets Medicaid enrollees at public clinics, and the number in Bergin et al. (2012) is from a sample of Medicaid enrollees at a public clinic. Therefore, I believe this number generalizes more to this option than the previous option. This leads to a 3.8% reduction in unintended pregnancies.

Cost

Execution costs

There is a good amount of uncertainty in how long the process of obtaining a waiver will take. I used the process of developing and issuing federal regulations as a basis for comparison. While the 1115(a) waiver is certainly different, there is some similarity in that it involves public notice and input processes at the state and federal level. I looked for examples of Notice in Advance of Proposed Rulemaking in the Registrar, which indicates that an agency is in the preliminary stages of rulemaking, and then determined how much time elapsed between issuing the advance notice and issuing the rule. I used this as a proxy for time to create a waiver. There is wide variation, but I estimate about two years is required.

This would involve about 720 hours among individuals at DMAs working with HHS to create the waiver (three individuals 10 hours per month for 2 years). It would then involve hiring a health services manager to oversee the initiative for five years. According to BLS, the annual salary for a health services manager is \$98,350. Finally, like the stocking pilot program for private providers, it would involve 60 hours each for 3 people for an evaluation.

$$(720)(\$47.29) + (5)(98,350) + (180)(47.29) = \$534,000$$

I calculate implementation costs only to the state, not to the federal government.

Cost savings

I followed the same methodology as in the previous section but did not include the sensitivity analysis with 70%. This has a cost savings of \$3.8 million per year.

Women Reached

- 1.) In 2010 (the latest year for which data are available), public clinics provided family planning services to 85,590 individuals.
- 2.) On average, 60% of patients receiving family planning services at clinics use Medicaid
- 3.) Women of reproductive age reached = $(95,060 \cdot .60) / 1,684,883 = 3.4\%$
- 4.) Women in need of contraceptive services and supplies = $(95,060 \cdot .60) / 996,530 = 5.7\%$

This likely underestimates the percentage of women reached because more than just Medicaid patients could benefit from the provider training.

APPENDIX H: ESTIMATES FOR PROVIDER TRAINING INITIATIVE

Percent reduction in unintended pregnancies

To assess the effect of training on the LARC takeup rate, I use an average of increases in the Baltimore program and the Harper et al. (2015) study.

The Harper et al. (2015) study found that providing training to clinics increased the percent of women using LARCs by eleven percentage points. After training at FQHCs in Baltimore, the percent of people using LARC at one clinic was 15%, compared to the baseline of 7.2%.

The average takeup rate is 9.4%.

Tables H1 and **H2** summarize reduction in unintended pregnancies applying this takeup rate to the women that this pilot program would affect. This option would reach 75,875 women. I assume that 11.6% of women at family practice offices and FQHCs would use a LARC, and 7.1% of teens at pediatrician offices would. These numbers may be lower, but it is unknown how many women in these settings use LARC. Also, there are likely teens receiving care at FQHCs, but it is unknown what percentage they represent. The uncertainty likely underestimates these reductions in unintended pregnancies.

As with Option 2, I assume that of the individuals who do not get a LARC, 6% will use no method and 94% will use some short-acting method with the failure rate of the pill.

Table H1: Estimated Reductions in Unintended Pregnancy for Individuals Who Go to FQHCs and Family Medicine Practitioners

	Use LARC	Use Pill	Use No Method	Unintended Pregnancies from LARC	Unintended Pregnancies from Pill	Unintended Pregnancies from No Method	Total Number of Unintended Pregnancies
Training	14,328	50,668	3,234	1	4,560	27	4,588
No Training	7,914	56,697	3,618	1	5,428	30	5,460
Difference	6,413	6,028	384	0	868	3	871
Percent Reduction							15.96%

N = 68,231

Table H2: Estimated Reductions in Unintended Pregnancy for Individuals Who Go to Pediatricians

	Use LARC	Use Pill	Use No Method	Unintended Pregnancies from LARC	Unintended Pregnancies from Pill	Unintended Pregnancies from No Method	Total Number of Unintended Pregnancies
Training	1,261	6,000	382	1	539	325	865
No Training	542	6,675	426	1	600	362	962
Difference	718	675	43	1	61	37	97
Percent Reduction							10.12%

N = 7,644

This is an average reduction of 13%.

Cost

Execution costs

A \$30,000 grant from the Abel Foundation paid for training in two Baltimore FQHCs. I estimated \$15,000 per FQHC that is similar in size and serves a similar number of patients as Baltimore.

$$(15,000)(6 \text{ FQHCs}) = 90,000$$

Merck offers implant training for free. The Family Planning National Clinical Training Center offers IUD trainings for \$75 per non-Title X provider. The cost of training for family practice and pediatricians depends on how many will attend the training if offered, which is uncertain. I calculated different costs based on 5% of family practice and pediatricians who do not already offer LARC attending if this is not eligible for continuing medical education, and 10% attending if it is.

Table H3 display costs.

This is based on the fact that there are 4,530 family practice physicians in Virginia and studies estimate that 25% of these provide LARCs in the U.S (BLS, 2017). There are 650 pediatricians in Virginia, and 39% in the U.S. offer LARCs (BLS, 2017). Based on the average number of patients each see per week and the fact that contraceptive clients are about 1% of clients visiting family practice physicians, both see about 52 contraceptive clients per week (Landry, Wei, and Frost, 2008).

Table H3: Number of Family Practice Physicians and Pediatricians Attending

	Number Attending	Cost
5% attending		
Family Practice	170	12,750
Pediatricians	20	1,500
Total	190	14,250
10% attending		
Family Practice	340	25,500
Pediatricians	40	3,000
Total	280	28,500

The average cost is approximately \$21,400. The total cost for planning (\$21,400, \$22,500 for 300 residents, and \$90,000 for FHQCs) is approximately \$134,000.

If UVA, VCU, and Carilion lead this effort, ob-gyns and nurse practitioners will need to be involved in planning. I estimate three ob-gyns and one nurse practitioner from each hospital will oversee and spend 40 hours each on this. According to BLS, the median hourly wage for an ob-gyn is \$103.14 (BLS, 2017). The median hourly wage for a nurse practitioner is \$49.15. The total cost for planning is \$30,650.

The total cost for this option is approximately \$165,000.

Cost savings

Cost savings depends on the number of women reached, which depends on the number of provider who participate in the training. **Table G4** shows the cost estimates depending on attendance. This uses \$15,5833 for the cost of direct medical expenses from pregnancy, birth, and infant care up to 12 months.

Table H4: Cost Savings for Provider Training Initiative

% Attending	Cost Savings for Pediatricians	Cost Savings for Family Practitioners and FQHCs	Total Cost Savings
5	\$208,000	\$1.9 million	\$2.1 million
10	\$416,800	\$3.7 million	\$4.1 million

This is an average cost savings of \$3.15 million.

Women reached

Like cost savings, women reached depends on participation. With an average of participation rates, this would reach 1% of women of reproductive age would be aged and 1.6% of women in need of contraceptive services and supplies would be reached.

APPENDIX I: ESTIMATES FOR PUBLIC-PRIVATE PARTNERSHIP

Percent reduction in unintended pregnancies

The pregnancy rate among Title X patients in Delaware declined 8.4% from 2014-2015. It declined 15% over two years. It is possible that Delaware CAN accounts for 66% of that, as based on CFPI estimates. That means that unintended pregnancy rate declined 5.5% in year one and 10% in year two due to the program. While the 66% may be overstating the effect of Delaware CAN due to the fact that CFPI involved more funding, the program in Virginia would reach more people than Delaware CAN.

Budget for implementation

\$15 million includes \$5 million in private funding in year one, \$5 million in year two, and \$2.5 million in public funding and \$2.5 million in private funding in year three.

Cost savings

I use the CFPI estimate, in which the program saved \$52.3 billion over four years, for an average annual cost savings of \$13 million.

Women reached

- 1.) Women of reproductive age reached = $21,000/1,684,883 = 1.2\%$
- 2.) Women in need of contraceptive services and supplies = $21,000/996,530 = 2.1\%$

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