

# **Benefits of and Strategies for LARC Promotion: A Policy Analysis**

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## Foreword

This report is the result of collaboration between the La Follette School of Public Affairs at the University of Wisconsin–Madison and the School of Medicine and Public Health at the University of Wisconsin–Madison. Our objective is to provide graduate students at La Follette the opportunity to improve their policy analysis skills while providing Wisconsin policymakers and practitioners an analysis of policies and practices for Long-Acting Reversible Contraceptive (LARC) Promotion in Wisconsin

The La Follette School offers a two-year graduate program leading to a master’s degree in public affairs. Students study policy analysis and public management, and they can choose to pursue a concentration in a policy focus area. They spend the first year and a half of the program taking courses in which they develop the expertise needed to analyze public policies. The authors of this report all are in their final semester of their degree program and are enrolled in Public Affairs 869 Workshop in Public Affairs. Although acquiring a set of policy analysis skills is important, there is no substitute for doing policy analysis as a means of learning policy analysis. Public Affairs 869 gives graduate students that opportunity.

This year, Workshop students were divided into eight teams. Other teams completed projects for the city of Madison, the Wisconsin Department of Public Instruction and the Wisconsin Department of Children and Families, the Wisconsin Department of Natural Resources, the Wisconsin Department of Health Services, the Legal Assistance to Institutionalized Persons Project at the University of Wisconsin Law School, the Millennium Challenge Corporation, and the University of Notre Dame Environmental Change Initiative.

Enabling women and families to plan pregnancies and achieve desired family size is crucial to the health and socio-economic advancement of society. Numerous studies have demonstrated an association between unintended pregnancy and a wide variety of negative physical health, mental health, and socio-economic outcomes, especially for young mothers and their children. Preventing unintended pregnancies remains a major public health challenge in Wisconsin. After an assessment of costs and benefits of LARCs and their availability and acceptability within the medical community, this report recommends that the report clients and other actors in the state first pursue a targeted public-private LARC program in Milwaukee, where it has a great potential impact in a targeted area and will provide evidence for launching a more extensive LARC program in Wisconsin. The report also recommends that this initial effort include an evaluation of program impacts. In addition, it suggests development of LARC access programs for the rest of the state, including private provider education and eventually Medicaid funding alternatives.

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## Executive Summary

Enabling couples and families to plan pregnancies and achieve desired family size is crucial to the health, well-being, and economic advancement of society. Numerous studies have demonstrated an association between unintended pregnancy and a wide variety of negative physical health, mental health, and economic outcomes. Preventing unintended pregnancies remains a major public health challenge in Wisconsin and nationwide. Nearly half of all pregnancies in Wisconsin are unintended, costing the state and federal government \$313.5 million in 2010.

Long-acting reversible contraceptives (LARCs), including intrauterine devices (IUDs) and subdermal implants are highly effective, preventing contraception for three to 10 years without any user action. They are over 20 times more effective than oral contraceptive pills and have extremely high rates of continued use. These methods are underused, accounting for just 7.2% of U.S. contraceptive use. Misperceptions about their safety persist among medical providers and patients, and many providers are overly restrictive in determining who would benefit from LARCs. Additional barriers include lack of experience in LARC insertion and difficulty with insurance reimbursement.

Interventions are urgently needed to improve the availability and acceptability of LARCs for all women, while maintaining high standards of quality in care. In this report, we analyze three strategies for promoting LARCs in Wisconsin in terms of their impact on several key criteria, including health, cost, and feasibility. The first alternative would modify Wisconsin's Medicaid policy to authorize the reimbursement for the insertion of an IUD or implant immediately postpartum. The second alternative would provide formal training on contraceptive counseling and LARC placement to medical professionals in Wisconsin's eight largest health care systems. The final alternative involves creating a public-private partnership to fund a program promoting the use of LARC methods in Milwaukee County.

We ultimately recommend that actors in the state pursue a targeted public-private Milwaukee LARC program because it has a great potential impact in a small area and is proof of concept for how a LARC program functions in Wisconsin. It also seems most feasible in terms of stakeholders and funding at this time. We also recommend that the leaders of this initiative include evaluation of the program's impacts in order to most effectively document the benefits, in order to begin development of LARC access programs for the entire state. Rigorous evaluation will provide evidence to help promote broader action on LARCs such as pursuing a statewide private provider education strategy similar to our proposed second strategy. Because of low feasibility and a small reach across the population, Medicaid regulatory changes, such as the unbundling strategy we analyze, should be carefully evaluated for stakeholder buy-in and projected outcomes before pursuing this strategy.

## Introduction

Forty-five percent of pregnancies in the United States and 46% in Wisconsin are unintended,<sup>1</sup> meaning that the mother did not want to become pregnant at that time or at all (Finer & Zolna 2016; Kost 2015). High rates of unintended pregnancies have a negative impact both on Wisconsin's economy and the health and well-being of its citizens. Research indicates that mothers of unintended children and their families are more likely to suffer from adverse health outcomes and struggle to achieve upward economic and social mobility, making them more likely to need publicly funded health care, food and daycare subsidies, and more.

Nearly half of unintended pregnancies occur to women using contraception, but who become pregnant due to imperfect use or method failure (Trussell et al. 2013). Long-acting reversible contraceptives (LARCs) have been the subject of considerable attention recently as a solution to this problem. These methods are extremely effective at preventing unintended pregnancies, are safe and easy to use, and are cost-effective relative to other forms of contraception.

Still, LARC usage rates in the United States remain low. Research shows this can be attributed to several factors, including lack of access, high upfront costs, and outdated information about LARC risks and insertion procedures among both patients and providers. LARCs are still a relatively new issue politically, and very few states have taken legislative action to implement programs.

This report analyzes possible strategies for increasing contraceptive choice in Wisconsin, with a focus on the promotion of LARCs as an effective option to avoid unintended pregnancy. Empowering women to make the choice about when to become pregnant will save money, improve women's and children's health, and help ensure all family members have the best chance for economic success.

## Social and Economic Burden of Unintended Pregnancy

In this section, we outline the evidence that women who become pregnant without planning often head families with disadvantaged outcomes, which result in a multitude of direct and broad societal costs. Below, we provide estimates of the public costs for society that result from these negative outcomes.

## Methodology

Much of the quantitative analysis in this report focuses on the public costs associated with births resulting from unintended pregnancies in Wisconsin and other selected states. Several data sources were used to derive estimates of public costs for prenatal care and delivery, the number of unintended births, and select demographics of women (see Appendix A).

The proportion of births resulting from intended and unintended pregnancies was obtained from the Pregnancy Risk Assessment Monitoring System (PRAMS), a Centers for Disease Control and Prevention postpartum survey that collects self-reported information on "maternal behaviors,

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<sup>1</sup> The terms *mistimed*, *unwanted*, and *unintended* pregnancies are defined in the Methodology section. The figures presented here include pregnancies that end in miscarriage and abortion in addition to live births.



conditions, and experiences that occur shortly before, during, and after pregnancy among women who deliver a live-born infant” (WI DHS 2014). One component of the PRAMS survey addresses pregnancy intention, which can be separated into two indicators of “Intended” or “Unintended.” A woman’s pregnancy intention is categorized by her response to the question, “Thinking back to just before you got pregnant with your new baby, how did you feel about becoming pregnant?” According to the CDC definitions listed in the table below, the “sooner” and “then” answers indicate an *Intended* pregnancy, while the “later” and “didn’t want” responses indicate an *Unintended* pregnancy.

**Table 1. Pregnancy Classification from PRAMS Survey Questions**

Intended Pregnancy	Unintended Pregnancy
I wanted to be pregnant sooner	I wanted to be pregnant later (“ <i>mistimed</i> ”)
I wanted to be pregnant then	I didn’t want to be pregnant then or at any time in the future (“ <i>unwanted</i> ”)

Source: PRAMS Questionnaire: Phase 6 2009-2011 Core Questions

Hereafter, the term “unintended pregnancy” refers to both mistimed and unwanted pregnancies. When referring to a sub-population within the unintended pregnancy classification, pregnancy intentions will be stated explicitly as “unwanted” or “mistimed.” While some of the literature uses the term “unplanned” as either distinct from or synonymous with “unintended,” we exclusively refer to unintended pregnancies (UPs) in this report to avoid confusion. Rates of UPs are based on Wisconsin PRAMS surveys from 2007 to 2011. Certain data, such as the total number of births in Wisconsin, are available through 2014. When applying UP rates, number of births, and number of Wisconsin’s reproductive age women to this type of data, we have used an average for 2008-2014 so as to not to overstate the outcomes of a single year. Due to the lack of a recognized method to estimate the frequency of abortions and miscarriages (Finer and Zolna 2016), we exclude these from the report. Unless noted otherwise, calculations of and references to UPs include only those that resulted in a live birth.

We also conducted interviews with key stakeholders, including women’s health advocacy groups, Wisconsin Department of Health Services staff, and administrators with major health care systems (see Appendix A). These interviews allowed us to gather key insights into the various perspectives of stakeholders as well potential obstacles to and opportunities for LARC promotion in Wisconsin.

Although characteristics of race and ethnicity play a role in the discussion of UPs, we have excluded them from our analysis. The relationship between race and UPs has been well-documented, but it is often abused to target specific racial populations with programs to reduce their fertility. We instead focus on demographic characteristics such as age and poverty, which we believe are responsible for the most adverse outcomes associated with UPs and are highly correlated with racial demographics. This allows us to refine the scope of the analysis and acknowledges the fact that a single program on LARCs is only a small step in addressing wider issues of systemic racial inequity.

## Impacts of Unintended Pregnancy

The impact of UPs on families extends to all family members, but the effect on mothers and children is the most researched. Compared to planned pregnancies, UPs are associated with poorer health and socio-economic outcomes that lower the quality of life and level of social

participation for mother and child. The development of other children in the family is also hampered by the occurrence of a UP. Further, teens and young mothers often suffer particularly adverse outcomes in health, socio-economic mobility, and development.

### *Health*

Some of the first disadvantages from UPs to manifest in a family’s life include negative physical health outcomes for the child, adverse mental health outcomes for both mother and baby, and a greater incidence of domestic violence in the home. Gipson, Koenig, and Hindin (2008) and Kost and Lindberg (2015) found that negative health outcomes for unintended children include lower use of early prenatal care, low birthweight (if the pregnancy was unwanted), and lower rates of breastfeeding. The first two risk factors can lead to increased incidence of infant mortality (Ayoola et al. 2009; Callaghan et al. 2006), and lack of breastfeeding increases the risk of childhood disease (AAP 2012). Mothers of unintended children are also more likely to suffer from anxiety and depression than women who had exclusively planned pregnancies (Gipson, Koenig, & Hindin 2008; Herd et al. 2016), in turn affecting the welfare of their children. Moreover, Roberts et al. (2014) found that women who have unintended children with an abusive partner are less likely to leave their abusers, exposing themselves and their child to physical danger and further negative outcomes.

### *Socio-Economic*

As Table 2 shows, UPs are disproportionately borne by mothers who are young, low-income, and unmarried, while intended pregnancies are concentrated among older, financially stable, married mothers (Finer & Zolna 2016). This makes it difficult to identify the degree to which poor social and economic outcomes for the first group can be causally attributed to pregnancy intendedness (Gipson et al. 2008; Kost & Lindberg 2015; Logan et al. 2007). Despite these difficulties, recent research has illuminated that serious, long-term social and economic disparities plague families with unintended children, including lower educational attainment and lower income for both mother and child.

**Table 2. Percent of U.S. Unintended Pregnancies by Select Demographics**

Income		Education		Marital Status		Age	
Under \$10,000	62.6	Less than HS Diploma	55.3	Married	26.0	Under 20	73.3
\$10,000 - \$24,999	52.4	HS Graduate	50.5	Unmarried	63.1	20 - 29	45.4
\$25,000 - \$49,999	39.3	More than HS	31.8			30 & Up	27.2
\$50,000 & Up	19.8						

Source: PRAMS 2011

Greene Foster, Roberts, and Mauldon (2012) found that women who carried their UP to term were 11 percentage points more likely to have an income below the federal poverty line than women who did not. This research indicates that birth intention has significant implications for the mother’s economic mobility. A child’s early environment—including income and other factors like parental education levels, family structure, and home environment—also leads to social and economic divisions that impact the child decades into the future (Smeeding 2016). Children born into poverty are more likely to stay in poverty than those born into a higher socio-economic status, particularly for minorities (Holzer et al. 2007). Unintended children also complete fewer years of schooling on average, and are 12% to 31% less likely to graduate college than wanted peers (Bailey 2013; Ananat et al. 2009).

### *Development*

Unintended babies are often born into families that already have children. Nationally, unwanted pregnancies are concentrated among women with one or more children; 12.2% of pregnancies are unwanted among this group, compared to 6% for women with no children (PRAMS). This impacts the development of all children in the family. Greene, Foster, and Biggs (2012) found that older children in the family perform worse on key developmental indicators when their mothers bear an unintended child. These outcomes are most severe when there is a gap of less than two years between children (Buckles & Munnich 2012; Karwath, Relikowshki, & Schmitt 2014). This is likely because parents are less able to spend adequate time with each child and may have fewer resources for each child's education (Bailey 2013). Studies have shown that the effects of close birth spacing between siblings persists into young adulthood, as parents are less able to financially support their children as they launch into lives of their own (Powell & Steelman 1995). Giving women more power over when and how many children they have, therefore, has powerful potential to improve developmental and economic outcomes for their offspring.

### *Teen and Young Adult Mothers*

Despite a 20-year decline in teen births nationally and internationally, the United States continues to have one of the highest teen birth rates in the developed world, second only to Russia (Sedgh et al. 2015). The teen birth rate in Wisconsin mirrors this trend, dropping from a rate of 36 per 1,000 in 1999 to 18.3 in 2014 (WISH). While this rate is below the national average of 24.2, the rates across different geographic regions of the state vary considerably. The urban Southeastern region of Wisconsin has the highest rate at 22 teen births per 1,000 women ages 15 to 19, higher primarily because of Milwaukee. Milwaukee County's teen birth rate is 33 births per 1,000, and had 31% of the state's teen births in 2014, despite accounting for just 17% of Wisconsin's female teen population.

In Wisconsin, 85.8% of pregnancies resulting in a live birth to women under 18 years of age were unintended. Of this age group, 21.6% were designated as unwanted, compared to 9.8% statewide (Table 3). Well over half of births to women 20 to 24 years old were also unintended. For every age group under 25, Wisconsin's UP rates are higher than national rates.

**Table 3. Percent of Unintended Pregnancies by Age Group**

	WI			U.S.		
	UP Total	Mistimed	Unwanted	UP Total	Mistimed	Unwanted
Total	36.5	26.8	9.8	40.0	30.4	9.6
Under 18	85.8	64.2	21.6	83.7	67.7	16
Under 20*	77.7	66.5	11.2	73.3	61.0	12.3
20 - 24	55.8	46.5	9.3	57.0	46.9	10.1
25 - 34	29.2	20.8	8.4	32.7	24.5	8.2
35 & Older	25.0	7.8	17.2	25.7	12.8	12.8

\*Includes the "Under 18" category

Source: PRAMS 2011

The negative socio-economic outcomes of UPs are more acute for mothers under the age of 25. Teen mothers are more likely to have lower educational attainment, lower income, and higher dependence on public assistance (Boden, Fergusson, & Horwood 2008; Gibb et al. 2014; Hotz, McElroy, & Sanders 2005; Otterblad Olausson et al. 2001). Women who become mothers between the ages of 20 and 25 fare better than teens, but have higher rates of unemployment,

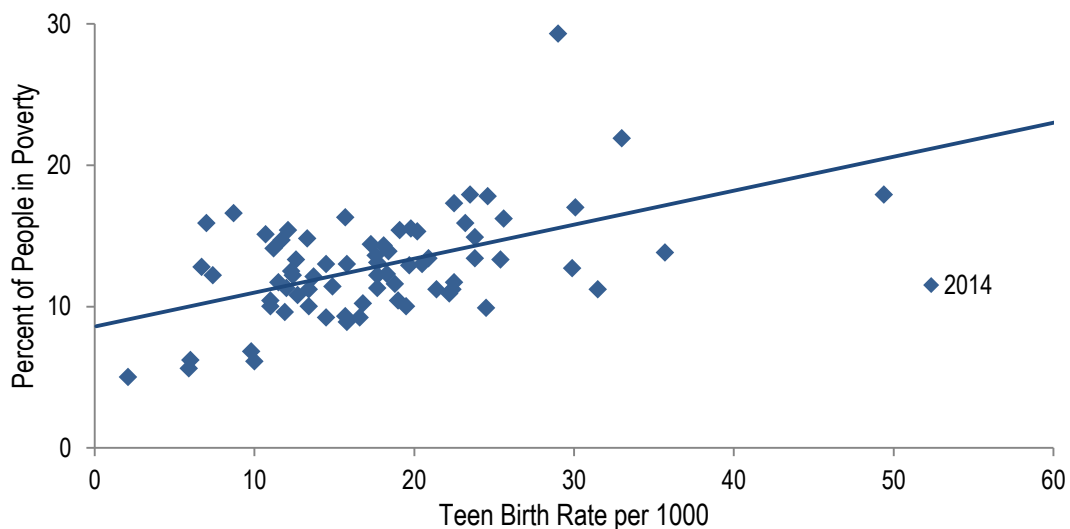
lower levels of education, and greater use of welfare than women who first become mothers between 25 and 29 (Otterblad Olausson et al. 2001).

Men also suffer negative socio-economic outcomes when they become a father as a teenager or when the mother of their child is a teenager. Fletcher and Wolfe (2012) find that teen fathers are a full 20 percentage points less likely to complete high school than men who do not become fathers in their teens. They also find that teen fatherhood correlates with higher unemployment.

The children of teen parents are negatively affected as well. Teen pregnancies are more likely to end in preterm delivery, low birth weight, and neonatal mortality (Chen et al. 2007). Young children of teenagers have lower cognitive and emotional support from their parents and lower academic achievement. Though these effects mostly wane as the child ages, with the exception of daughters of teen mothers, who are less likely to complete high school by age 19 (Manlove et al. 2012) and are at greater risk themselves of becoming mothers as teens, magnifying effects across generations (Penman-Aguilar et al. 2013). Unintended children of young mothers (those under 25) are also more likely to exhibit aggressive behaviors “as a result of poor parenting practices, limited education, and a lack of emotional, physical, and financial resources” (Mack & Chavez 2014: 2931).

The fact that teen pregnancies are often concentrated in low-income areas compounds these effects (see Figure 1). A comparison of county poverty levels to teen birth rates shows that, despite overall reductions in teen births, the number of teen births in low-income areas is increasing. We can see this through PRAMS data, which shows that the vast majority of teen pregnancies are unintended and that these mothers are low-income, as demonstrated by their use of means-tested public assistance programs. Vital Statistics data shows that 75% of Wisconsin teen mothers used the Women Infants and Children (WIC) program during their pregnancies and used Medicaid to pay for deliveries, while 58% of women age 20 to 24 used WIC and 62% used Medicaid. Once women reach age 25, these usage rates drop drastically and continue to decrease with age (see Appendix B; WI DHS 2014).

Figure 1. Wisconsin Poverty and Teen Births by County, 2009 & 2014



Source: Data from U.S. Census Bureau and WI Department of Health Services

Because UPs are most likely to occur among young, low-income women, they face greater hardships both generally and as a result of bearing an unintended child. Increasing access to reproductive health services for women from these demographics particularly will allow them to control their own fertility and create a broad spectrum of positive short- and long-term outcomes for individual families, children, and society as a whole.

## Public Costs of Unintended Pregnancy

Because of the considerable and wide-reaching poor health, social, and economic outcomes for families with UPs, the resulting costs are significant. Families with unintended children require public assistance at high rates, including Medicaid and the Children’s Health Insurance Program to cover medical expenses, as well as other programs like WIC, the Supplemental Nutrition Assistance Program (SNAP), and day care assistance. These programs provide crucial services that help families meet their basic needs.

### *Public Health Insurance*

The costs of medical care alone during pregnancy and birth are substantial. Sonfield & Kost (2015) estimate that direct medical expenses from pregnancy, birth, and infant care up to twelve months cost an average of \$12,667 in Wisconsin. UPs are twice as likely to be paid for with Medicaid as intended pregnancies. Medicaid paid for 60% of deliveries and 58% of prenatal care for UPs in 2011 (PRAMS) totaling \$313.5 million of public expense in 2010. Sonfield and Kost (2015) estimate that preventing these UPs could save \$231.1 million.

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Medicaid paid for 60% of deliveries and 58% of prenatal care for unintended pregnancies totaling \$313.5 million in public expenses in Wisconsin.

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### *Other Public Assistance Programs*

Women with UPs are also more likely to rely on nutrition, housing and daycare assistance programs for themselves and their children than women who avoid pregnancy, terminate their UP, or have a miscarriage (Ananat et al. 2009; Bailey 2013; Gruber et al. 1999). Greene Foster, Roberts, & Mauldon (2012) found a 32 percentage point difference in government assistance use between women who gave birth to their unintended child (76%) and those that did not (44%). When this difference is applied, even theoretically, to massive public programs such as WIC and SNAP, the magnitude of these costs becomes apparent.

The WIC program provides nutrition assistance for pregnant and breastfeeding women and their children, and was used by 38% of pregnant women in Wisconsin in 2014. Just 28% of those who intended to get pregnant enrolled in WIC, compared to 56% of women with UPs (PRAMS). These costs could be avoided entirely if a UP was prevented. Wisconsin spends over \$5.5 million annually on WIC payments to women with UPs just to cover the duration of their pregnancy. Actual program costs are much higher because breastfeeding women continue to receive this benefit, and all children in the family can be eligible for WIC up to five years of age (PRAMS; see Appendix B for full calculations).

**Table 4. Summary of Annual Costs from Unintended Pregnancies**

<b>National</b>	<b>Expenses from UPs</b>	<b>Savings from Eliminating UPs</b>
Medicaid payments on UPs		
Prenatal, birth, and 12 months of infant care	\$9.6-12.6 billion <sup>1</sup>	\$4.7-6.2 billion <sup>1</sup>
Prenatal, birth, and 3 years of infant care	\$21 billion <sup>2</sup>	\$15.5 billion <sup>2</sup>
<b>Wisconsin</b>		
WIC expenses for 9 mos. Of WIC support during annual UPs	> \$5.5 million	\$5.5 million
Medicaid payments on UPs in Wisconsin		
Federal Payments	\$221.4 million <sup>2</sup>	\$163.2 million <sup>2</sup>
State Payments	\$92.1 million <sup>2</sup>	\$67.9 million <sup>2</sup>
Total	\$313.5 million <sup>2</sup>	\$231.1 million <sup>2</sup>

<sup>1</sup> Monea and Thomas 2011<sup>2</sup> Sonfield and Kost 2015

As demonstrated, UPs affect families’ quality of life through health, socio-economic status, economic mobility, and childhood development. These outcomes result in a higher proportion of families relying on public assistance programs, costing the state hundreds of millions of dollars annually (see Table 4 for a summary of expenses and projected savings).

## Benefits of Greater Access to LARCs

Contraceptive technology—LARCs in particular—provide an effective and cost-efficient solution to UPs. In this section, we use cost data and evidence from LARC promotion programs in other states to estimate the potential impact that a similar program may have in Wisconsin.

### Benefits of LARCs

Research consistently finds that contraception is the most effective way to prevent UPs.<sup>2</sup> Despite widespread use of contraceptive methods like birth control pills, condoms, vaginal rings, the patch, and the shot UPs still persist at a high rate. About half of unintended pregnancies—or exactly 22.3% of all pregnancies in the U.S.—occur to women who used contraception but became pregnant due to imperfect adherence or method failure (PRAMS). This is where LARCs have the most potential.

LARCs are birth control methods that prevent pregnancy for extended periods of time without user action (Higgins 2014). The most commonly used LARC methods are copper or hormone-containing intrauterine devices (IUDs) and hormonal implants. An IUD is a small device inserted into the uterus; it works continuously by preventing fertilization for five years if the IUD is hormonal and up to ten years for the copper IUD. Hormonal implants are progesterone-

<sup>2</sup> Alternatives to contraception that address some of the issues of UPs are adoption, abstinence, and abortion. Adoption does not avoid the high medical costs of paying for unintended births. Additionally, in any given year only about half of the children waiting to be adopted in foster care find families, so these children continue to rely on public programs to survive (AFCARS Report 2015). Abstinence-only approaches to contraception have been continually proven ineffective at preventing UPs and the spread of Sexually Transmitted Infections (STIs) (Bearman and Bruckner 2001; Santelli et al. 2006; Stanger-Hall & Hall 2011). As for abortion, both “pro-choice” and “pro-life” groups agree that reducing the number of abortions is a pressing priority. New legislation regulating abortion providers in thirty states (Boonstra & Nash 2014) and a recent rash of measures defunding family planning clinics throughout the U.S. have made it extremely difficult for women to actually obtain an abortion (Grossman et al. Feb 2014; Grossman et al. Nov 2014).

containing devices are placed under the skin of the forearm and work continuously for up to three years.

Of LARCs' many benefits, the most important is the high rate of effectiveness over a prolonged period of time. LARCs change the default from needing to take action to *prevent* pregnancy to needing to take action to *become* pregnant. LARCs remove the risk of human error that comes with Short Acting Reversible Contraceptive (SARC) methods<sup>3</sup> that require daily or monthly action to remain effective. They are the most effective form of reversible birth control largely because they remove the risk of imperfect adherence (Table 5, Trussell et al. 2013), and as a result are twenty times more effective than birth control pills at preventing pregnancy in typical use (Shoupe 2016; Trussell et al. 2007).

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## LARCs change the default from needing to take action to *prevent* pregnancy to needing to take action to *become* pregnant.

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Another benefit of LARCS is their ease of use. Women may prefer LARCs to other contraceptive methods because they can “get it and forget it,” which reduces the burden of obtaining a yearly prescription, regular pharmacy visits, remembering routine actions, or scheduling frequent doctor visits. Some women also prefer hormonal LARCs because they have lighter menses and less intense cramping; some stop menstruating altogether. For some women, this is a benefit. Others prefer having their menses as an indication that they are not pregnant. These women may prefer a SARC method if this is an important aspect of their contraceptive routine.

LARC methods are also easily reversed. Once a physician removes an IUD, nearly 100% of women are able conceive within the next three to 5.5 months; some studies suggest even quicker returns when an arm implant is removed. Other SARC methods cannot be reversed as quickly; the Depo-Provera shot,<sup>4</sup> for instance, can delay fertility for up to two full years after discontinuing use (Ressler & Jain 2010).

Some women have lingering concerns about LARC usage because of the poor safety record of past IUD and implant models. An early iteration of the IUD, the Dalkon Shield, caused septic abortions and subsequent pregnancy complications or infertility in users. The Norplant brand implant in the 1990s also had serious negative side effects that have been resolved in newer devices (Sitruk-Ware et al. 2013). Today's devices are not associated with any risk of infertility or pelvic sepsis (Petta, McPheeters, & Chi 1996; Shoupe 2016). Overall, there are no substantial differences in safety risks between using a LARC and using a SARC (Shoupe 2016).

Contraception already saves taxpayers money by preventing the costs of resulting UPs (Amaral et al. 2007; Greene Foster et al. 2009; Laliberte et al 2014; Trussell 2007). A conservative analysis of the cost effectiveness of all contraceptive methods shows that provision of contraception costs just 6 to 7% of what the UPs would cost otherwise (Laliberte et al. 2014).

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<sup>3</sup> These include the birth control pill taken daily, the patch or vaginal ring replaced monthly, or the shot which is administered by a provider on a three month or six month basis.

<sup>4</sup> Depo-Provera is the brand name which we use to refer to the depot medroxyprogesterone acetate injection.

**Table 5. Annual Costs and Efficacy of Contraceptive Methods**

Contraceptive method	Total Annual Cost, per woman, per year*	UPs Per woman per 100 years in perfect use (A)	UPs per woman per 100 years in typical use (B)	Proportion of UPs attributable to imperfect adherence (B-A)/B
<b>SARC Methods</b>				
Pill	\$654.30	0.3	9.0	0.967
Male Condom	\$21.77	2.0	18.0	0.889
Patch	\$1,023.86	0.3	9.0	0.967
Ring	\$986.94	0.3	9.0	0.967
Injection	\$390.53	0.2	6.0	0.967
<b>LARC Methods</b>				
Implant	\$337.25	0.05	0.05	0.000
IUD**	\$97.34	0.6	0.8	0.250
IUS***	\$215.70	0.2	0.2	0.000
<b>Others</b>				
Withdraw	None	4.0	22	0.818
Periodic Abstinence	None	5.0	24	0.792
No Method	None	46	46	NA

\*Including ingredient cost, initial consultation and procedure, follow-up consultation, and removal consultation and procedure.

\*\*Copper or other non-hormonal IUD

\*\*\*Intra-Uterine System (IUS) referring to progestin-releasing or hormonal IUD

Source: Trussell et al. (2013)

LARCs bring even greater benefits. Their upfront costs are high at \$700 to \$850 per device<sup>5</sup> (Trussell 2012), but their longevity makes them cheaper than SARCs on a per-month basis when the cost is distributed over the life of the method (see Table 5, Trussell et al. 2013). Due to lower monthly costs and avoiding UPs, IUDs provide a return on investment after two years of use (Laliberte et al. 2014) while lasting anywhere from three to ten years.

Sixty-nine to 79% of LARC users continue use of that method for at least two years, compared to much lower two-year continuation rates of 38 to 43% of SARC methods (O’Neil-Callahan 2013). For the minority of women who try a LARC, are not satisfied with the method, and have it removed before two years of use (21 to 31%), it may be more expensive than other SARC contraceptive methods. Despite this caveat, even when estimating the costs on a shorter timeline (less than one year), the cost of a LARC is still far cheaper than the costs of the avoided pregnancies (Laliberte et al. 2014: 9). A more conservative analysis by Trussell et al. (2013) estimated a LARC take-up rate of 10% for women aged 20 to 29 and still found net medical cost savings of \$288 million from avoided UPs nationwide. LARCs are thus extremely cost effective compared to other contraceptive methods due to their effectiveness at preventing UPs, ease of use, safety, user satisfaction, and relatively lower long-term costs.

Based on this analysis, we predict that improving LARC access for women will be a cost effective solution that can greatly reduce the expenses associated with high UP rates. This conclusion is also supported by the experiences of other states that have pursued programs to increase LARC uptake. To aid in lowering teen birth rates and high levels of UPs in general,

<sup>5</sup> The copper paragarad IUD is the least expensive option at approximately \$718, followed by the Implanon or Nexplanon arm implant at \$791 and, finally, the Mirena hormonal IUD at \$844 (Trussell 2012).



several cities and states have undertaken efforts to increase access to LARCs and have seen cost savings as a result. Evaluations conducted on LARC promotion programs in St. Louis, Missouri, and Colorado demonstrate the data-driven efficacy of each program and are described below.

## St. Louis CHOICE Program

The St. Louis Contraceptive CHOICE Project,<sup>6</sup> which ran from 2007 to 2011, provided 9,000 women between the ages of 14 and 45 with two stages of contraception counseling<sup>7</sup> and the contraceptive method of her choice at no cost for up to three years (Birgisson et al. 2015). The study's central objective was to reduce UPs by removing the barriers of cost, access and education associated with LARCs. The study reported that women preferred LARCs to SARCs, with 75% of all women and 72% of teens choosing a LARC method (Birgisson et al. 2015; Secura et al. 2014).

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The two-stage standardized contraceptive counseling program helped ensure that all CHOICE participants were aware of the contraceptive options available, including information on each method's effectiveness at preventing pregnancy and the advantages and disadvantages of use. The first stage addressed the lack of awareness of LARCs among women. During the eligibility screening process, trained staff read a script to participants that briefly defined LARCs (see Secura et al. 2010 for full script). Once enrolled, participants went through the second stage, which provided "accurate, unbiased information about all contraceptive methods to help [women] assess [their] needs and make an informed decision" (Madden et al. 2012). The counseling program's structure was based on a framework that focuses on helping clients make choices that suit their needs (Madden et al. 2012), and addresses women's individual situations and concerns. This stage was structured to list the risks, benefits and side effects of each contraceptive method, presented in order of effectiveness (Birgisson et al. 2015).<sup>8</sup>

Overall, studies found LARC users were 22 times less likely to experience a UP, and abortion rates for CHOICE participants were less than half that of the surrounding region. Non-LARC users under age 21 were twice as likely as older women using the same method to have a UP (McNicholas et al. 2014). Even though LARC uptake was higher for women over age 25 compared to those ages 14 to 25 (79% vs. 69%), analysis of the CHOICE project found the program had the greatest impact on teen pregnancy, birth, and abortion rates, which declined more rapidly than national averages (Birgisson et al. 2015). Prior to joining the study, nearly half of teen participants had reported a UP, 18% had a history of abortion, and 97% were sexually active (Secura et al. 2014). While the city of St. Louis had an average annual teen birth rate of

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<sup>6</sup> CHOICE was privately funded and administered by the Washington University School of Medicine in St. Louis.

<sup>7</sup> Contraceptive counseling did not focus specifically on promoting LARC methods, but did lay out the many benefits of LARCs, particularly ease of use and high rates of efficacy (Peipert, et al. 2011).

<sup>8</sup> Most effective to least: LARCs (IUS, IUD, implant), injection, oral pills, patch, ring, and condoms. Other methods such as diaphragm and natural family planning were discussed on request (Madden et al. 2012)

57.7 per 1,000 between 2008 and 2013 (WISH), the rate for CHOICE participants was 19.4 (McNicholas et al. 2014).

Women and teens who chose LARC methods also had higher rates of continuation after one year (85.8% vs. 55.8%) and three years (67.2% vs. 31%) and a discontinuation risk three times lower than those that had chosen SARC methods (Diedrich et al. 2015). The increased selection of LARCs by program participants illustrates how education can improve counseling and increase access to LARC methods while limiting costs.

## Colorado Family Planning Initiative

With the support of a \$25 million grant, Colorado's Department of Public Health and Environment (CDPHE) established the Colorado Family Planning Initiative (CFPI) in 2009 to reduce UPs through increased access to LARCs. The CFPI targeted their efforts toward low-income women and teens age 15 to 24, groups shown to be at the greatest risk of UPs (Ricketts et al. 2014). It provided funding to Title X clinics<sup>10</sup> to develop localized strategies, including increased clinic staffing, hours, and sites, as well as community outreach for patients and providers. Twenty-eight Title X agencies received funding for their clinics, covering 95% of both Colorado's total population including the population with incomes below the federal poverty line (Ricketts et al. 2014). The CFPI had the greatest impact on teen birth rates in counties with poverty rates below the median state level (Lindo & Packham 2015). Two years after CFPI implementation, low-income teen birth rates were 29% lower than trends predicted (Ricketts et al. 2014).

While Colorado's teen birth rate had been nearly identical to the national rate until 2008, it began improving significantly in 2009, the year CFPI was implemented. Twenty-eight states had lower teen birth rates than Colorado in 2007; by 2012, only 18 did (US DHHS 2014). Teen birth rates have been declining nationally, regardless of whether a state has a program in place, but Colorado's have fallen much faster. Following the implementation of CFPI, Colorado's teen birth rate fell by 46% between 2009 and 2014, while Wisconsin's fell by 39%. For teens age 15 to 17, the Colorado rate fell by 56% compared to 46% in Wisconsin. Figure 2 illustrates the overall downward slope of those rates for all teens, but also highlights the significant departure Colorado takes from the national average.

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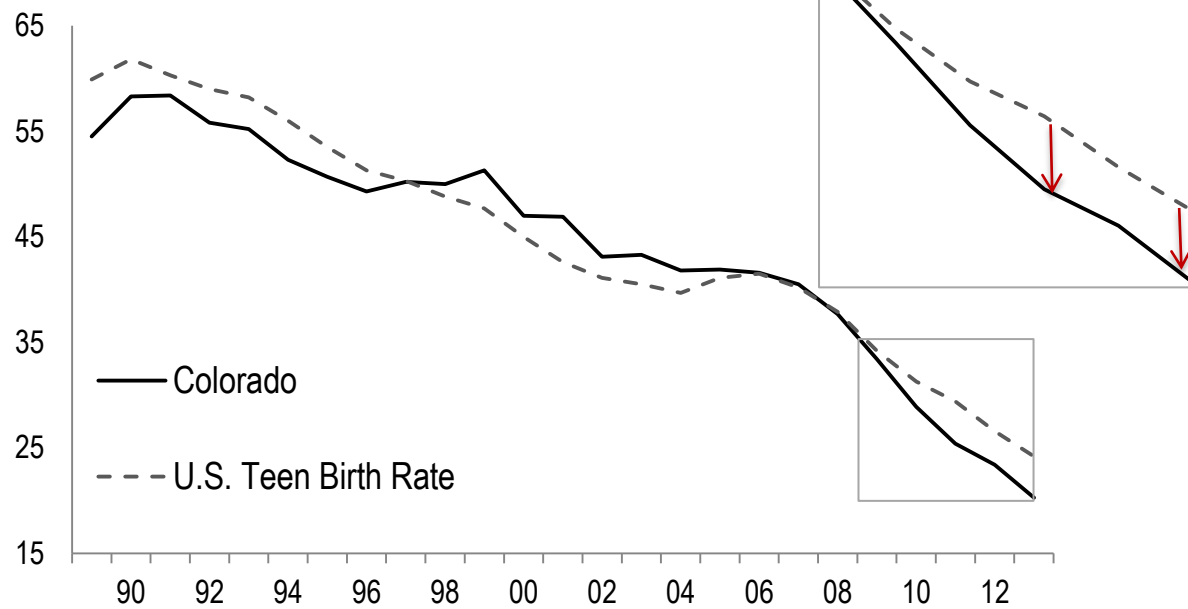
Two years after implementing the Colorado Family Planning Initiative, low-income teen birth rates were 29% lower than trends predicted

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<sup>9</sup> A private grant of \$23 million from the Susan Thompson Buffett Foundation and an additional \$2 million collected from other private sources.

<sup>10</sup> Title X is a federal program devoted solely to providing patients with comprehensive family planning and related preventive health services and designed to prioritize the needs of low-income or uninsured individuals and families, including those not eligible for Medicaid (Office of Population Affairs 2015).

Figure 2. Teen Birth Rates (Age 15-19) per 1000 Births



Generally, UPs in Colorado and Wisconsin followed similar trends between 2007 and 2011, averaging around 37% for the five-year period. However, the 2010 and 2011 Colorado UPs are lower in both proportions and crude numbers when compared to the same years in Wisconsin, following CPFI's 2009 rollout. Table 6 provides the UP proportions over the 2007 to 2011 period for those states and the U.S.

The CFPI also reduced public assistance expenditures for pregnant and postpartum women. The CDPHE found that UPs cost Colorado more than \$160 million dollars annually in Medicaid costs alone. Medicaid paid delivery costs for more than half of UPs in Colorado between 2007 and 2011 and nearly an equal amount for prenatal care (see Table 6; see Appendix C for more 2011 detail). The CDPHE estimates savings of \$5.85 in Medicaid costs for birth-related coverage alone for every \$1 invested into CFPI and LARCs (CDPHE 2014). Since implementing CFPI, the birth rate for Medicaid-eligible women ages 15-24 has dropped and is responsible for estimated savings “between \$49 million and \$111 million in birth-related Medicaid costs” (CDPHE 2014). Medicaid was not the only public assistance program to experience a reduction in costs. The number of infants on WIC had been steadily increasing for years, but one year after CFPI's implementation, that number began to decline. By 2013, the number of infants receiving WIC dropped by 23% (Ricketts et al. 2014).

Table 6. Percent of Public Assistance Use among Unintended Pregnancies

	2007		2008		CFPI Implementation					
	WI	CO	WI	CO	2009		2010		2011	
					WI	CO	WI	CO	WI	CO
Percent of Pregnancies that are UPs	38.3	37.3	33.7	36.9	35.7	39.5	39.7	35.8	36.5	35.9
Medicaid Delivery	50.3	51.1	47.8	56.2	66.8	58.1	61.9	59.8	59.6	60.4
Medicaid Prenatal	49.8	42.2	47.5	46.3	62.5	51.5	62.6	50.7	58.1	52.4
WIC Participation	56.7	49.6	55.2	49.6	59.7	53.7	58.2	52.8	55.9	51.3

Source: PRAMS 2007 - 2011

Despite similarities in many UP rate characteristics between Colorado and Wisconsin, it is clear that Colorado has started on a new and positive trajectory to focus on UP reduction. The actual number of UP births decreased by 14% in Colorado, compared to 2% in Wisconsin between 2009 and 2011.

From this evidence presented in the St. Louis CHOICE and CFPI cases, we can see that LARC uptake holds many potential benefits including high effectiveness, user satisfaction, safety, and cost savings. We predict that Wisconsin could see similar cost savings and reduced UP rates through increased LARCs usage.

## **The Wisconsin Landscape: Barriers to LARC Uptake**

Evidence from previous programs shows that there is great potential for a LARC initiative in Wisconsin to lower the public costs of UPs and improve health care. According to the CDC's National Survey of Family Growth, LARCs are used by 7.2% of women age 15-44. Assuming usage rates in Wisconsin are similar to the national rate, uptake remains low, in part due to existing barriers to LARC uptake (Branum & Jones 2015).<sup>11</sup> The subsequent analysis provides an overview of the major barriers relating to health insurance, provider education, and the state government. Combined, these barriers illuminate the challenges LARC advocates must overcome to increase LARC use both statewide and among individual providers, but can also illuminate the path towards effective policy.

### **Health Insurance and Reimbursement**

By expanding access to health insurance and mandating that insurers cover contraceptive care without cost sharing, the Affordable Care Act (ACA) has paved the way for LARCs to become a more widely used form of contraception. However, the ACA did not solve all problems in the insurance market, and lingering barriers still make it difficult for many to access LARCs. The ACA has lowered the number of uninsured in Wisconsin, but 8.4% of the state's population still lack insurance (KFF 2015).

Furthermore, the ACA allowed many existing health insurance plans to continue so long as they did not substantively cut benefits. These "grandfathered" plans, though subject to most of the ACA's regulations, are not subject to the provision requiring free preventive care. A 2015 Kaiser Family Foundation (KFF) survey found that 43% of employer health plans in the Midwest are grandfathered (KFF 2015). While there is no way of knowing exactly which plans do and do not offer free preventive services, a person with a grandfathered plan may face cost sharing requirements to receive a LARC that a majority of insured patients do not face.

The ACA has also failed to completely eliminate regulations insurers put in place to hold costs down, which can make more it difficult to access LARCs. Insurance plans still include some forms of cost sharing in new plans due to the Centers for Medicare and Medicaid Services rule that allows for "reasonable medical management" for prescriptions. This permits an insurer to

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<sup>11</sup> To protect the confidentiality of survey respondents, state-level data on LARC use is restricted. As such Wisconsin-specific data is not publicly available.

create tiered LARC options, which may provide a specific type of LARC device free of charge, but institute cost sharing requirements for others, potentially creating barriers to a desired device.

Insurers have also been accused of requiring prior authorization, where the doctor must call the insurer for approval, or step therapy, where a woman must try a specific type of IUD—usually one covered free of charge in the lowest tier—and decide she does not want it before trying one that she actually wants. This is illegal under the Affordable Care Act, but incredibly difficult to enforce. California responded to these policies in 2015 by enacting the Contraceptive Coverage Equity Act, which required all insurers to cover every form of birth control fully, but no other state has enacted similar legislation (Batra and Bird 2015).

Insurance policies impact providers as well, playing a key role in how they choose to stock LARCs. Providers typically buy LARCs from wholesalers at an average cost of \$700 to \$850 (Trussell 2012). There are two ways they can do this, one cheaper and one more expensive; both cause their own set of problems. The cheaper option lets doctors buy a LARC from a pharmacy once a woman asks for it. The clinic can get reimbursed more easily this way and it often does not cost them as much. However, this means the clinic does not have LARCs readily available, requiring women to make a second visit to get the LARC inserted, which some may not be able to do because of an inability to arrange transportation, take time off work, or pay for a second visit's co-pay. Because of this patients are more likely to choose a LARC method if their provider has the ability to insert the device that same day (Biggs et al. 2013).

The second option, which promotes same-day insertion instead of a second visit, requires clinics to have LARCs in stock, but many clinics find it financially infeasible to pay several thousand dollars upfront for LARCs without knowing exactly if or when they will be reimbursed (Armstrong et al. 2015). To reach an optimal level of LARC uptake, policies will need to incentivize clinics to stock LARCs initially so there are fewer barriers to access. One policy option that has been implemented in Texas and South Carolina is to alter Medicaid regulation to allow providers to order LARCs at no cost, and pay for them when they are used. In South Carolina if the device is not used in 30 days they also have the option to return it to the wholesaler at no cost (Kardish 2014).

Though the ACA has improved LARC accessibility through the preventive care mandate, the implementation of this rule is still imperfect and fraught with potential costs for the uninsured, those with grandfathered plans, plans with cost sharing loopholes, and plans with selective coverage of some LARCs and not others. Furthermore, the current insurance reimbursement scheme does not address providers' ability to stock expensive devices so that they can perform same-day insertions.

## Provider Education and Other Direct Service Challenges

One of the most cited barriers to LARC usage in public health literature is the lack of provider knowledge regarding the safety and benefits of these devices, as well as lack of training in LARC placement and removal (Harper et al. 2008; Collier et al. 2014). Mid-level practitioners,<sup>12</sup> such as nurse practitioners, nurse midwives, and physician assistants, can all insert LARC

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<sup>12</sup> Defined as practitioners who are authorized to write prescriptions, but who are not full medical doctors.

devices with the proper training, in addition to medical doctors. More infrequently cited barriers to LARC service provision are health care system ownership and the logistical challenge of billing and scheduling same-day LARC insertions.

Gaps in contraceptive care training begin at the earliest stages of medical education. Students in the University of Wisconsin's Medical Doctor program are required to do a rotation in obstetrics and gynecology in their third year, but the number of opportunities a student has to observe and practice LARC placement depends on patient demand. Students with an interest in family planning can receive fellowships for additional training in contraceptive use and counseling, but these are limited. Research suggests that the women's health curriculum, especially preventive reproductive care, needs to be improved and expanded at medical schools nationwide (Cain, et al. 2002; Harper, et al. 2008; Nieman 1994; Nothengal, et al. 2014).

Education among practicing physicians also shows significant room for improvement; provider knowledge about IUDs and implants is lacking in several areas. Research shows that Primary Care Physicians (PCPs), physician's assistants, nurse practitioners, and even some obstetricians/gynecologists (OB/GYNs) incorrectly identified how LARC methods work, when they can be inserted, and the degree of after-insertion care needed. A study by Biggs et al. (2014) found that only 56% of providers knew an IUD could be inserted immediately after an abortion, and only 43% agreed that this method could be performed immediately postpartum. Another study found that 25% of providers erroneously believed that antibiotics should be taken prior to the insertion of IUDs to prevent infection (Collier 2014). Providers also have erroneous perceptions about the safety of LARC devices and, subsequently, the risk of legal repercussions if these methods cause harm; one study found that 23% of providers expressed concern about litigation as a reason for not recommending IUDs (Harper 2008).

Another misconception is that LARCs are only suitable for a very limited pool of candidates (Biggs et al. 2014). Research demonstrates that some providers believe LARCs are not suitable for women who have never had children, women with a history of abortion or ectopic pregnancy, teenagers, or women who are HIV-positive, depressed, or obese (Vaaler et al. 2012; Biggs et al. 2014; Tyler et al. 2012; Harper et al. 2008; Collier et al. 2014). In reality, LARCs are a suitable method for each of these groups, as recommended by the CDC, ACOG, and the American Academy of Pediatrics (AAP). They go so far as to specifically recommend that providers consider LARCs as the first-line contraceptive choice for adolescents (AAP 2014). Health care provider knowledge and practices regarding LARC procedures, safety, and suitability "continue to reflect erroneous views and unrealistic risk perceptions; current practices does not reflect the body of scientific evidence" (Harper, et al. 2008).

The dearth of LARC education disproportionately impacts low-income populations. Some low-income women receive care at federally qualified health centers (FQHCs), which charge for medical services on a sliding-fee scale based on family income and size. Contraceptive services at these clinics are often limited because the providers, usually physician assistants or nurse practitioners, are less likely to have training on inserting IUDs and implants (Wood 2014).

Another option for low-income women are Title X clinics. In Wisconsin, Planned Parenthood clinics are the most prominent Title X recipients, and while they are strong LARC advocates,

they face continual funding cuts. Wisconsin decreased the amount of public funds that go to Planned Parenthood by several million dollars in 2016 (Paulsen 2016). These budget cuts may seriously impact clinics' ability to keep LARCs in stock, make them affordable, and promote knowledge of their efficacy via education and outreach (Beeson 2014).

Research shows that the medical services offered by health care systems also vary markedly by ownership. Wisconsin's 44 Catholic hospitals and clinics, for example, may prohibit full patient access to contraceptives. In 2014, the Catholic non-profit health system, Ascension Health Care, informed physicians at a hospital in Oklahoma that they could not prescribe contraception. After some backlash, Ascension—which owns three health systems in Wisconsin<sup>13</sup>—backpedaled only slightly, saying it would “tolerate, but not “approve, condone, or permit,” the prescription of contraception by its physicians (McDonough 2014). Furthermore, a 2014 study found that while women did not expect to obtain information on abortion or emergency contraception from providers at Catholic hospitals, they *did* expect to receive full information on preventive contraceptive options (Guiahi et al. 2014), so patients may erroneously believe they have full information about their contraceptive care. Providers in these systems have no incentives to pursue education and training on LARC and are then ill-equipped to provide these services if they move to another health care system that has no restrictions on full contraceptive access.

A final barrier to providing LARC services is the logistical challenge of scheduling. It is difficult to predict how long contraceptive counseling will take; furthermore, if the patient decides on a LARC method and wants it inserted that day, the procedure must be carried out in another room, which will take additional time. Some clinics have overcome this challenge by utilizing community health counselors who provide counseling while reserving provider time for insertion procedures (Edwards 2015). Other administrative staff also need to be trained in answering phones and scheduling appointments to effectively integrate same-day insertion into clinical life. All staff must further be trained on appropriate billing procedures in order to maximize reimbursement and ensure low out-of-pocket costs for the patient (Pabst Catalyst Initiative 2016). Together, lack of provider education, health system ideology, and logistical challenges of scheduling all make the provision of LARC services a challenge.

## Government and Politics

To date, the majority of successful LARC initiatives have been funded through private initiatives. This is partly because public programs that promote contraception are a relatively new and still contentious area of debate for state legislatures and executives. In the past year, Delaware and Colorado have become the first states to devote public resources to a LARC program, indicating that the time may come when state support for a LARC program is feasible; however, this remains a barrier for the time being.

Delaware became the first state to devote public funds to their statewide Contraceptive Access Now (CAN) program earlier this year, in the amount (Markell 2016). In this case, the support from a state executive was crucial to the provision of state support. The \$10 million CAN program begins this year, supported primarily by private donations with \$1.75 million of state

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<sup>13</sup> Ascension Health Care owns Ministry Health Care, Columbia St. Mary's, and Wheaton Franciscan Healthcare in Wisconsin, as well as a senior care center in Milwaukee (Ascension Health Web).

funding (Rini 2016). However, the political atmosphere in Wisconsin makes this an unlikely option in the short-term. Governor Scott Walker (R) is unlikely to propose such a program given his support of bills like the 2016 law that significantly cut Planned Parenthood's budget.

Colorado also appropriated \$2.5 million to continuing their LARC program through a legislative budget bill in 2016, but even with the overwhelming success of its program, had to overcome major political obstacles to do so (LARC4CO 2016). Last year, Republicans blocked the extension of the program by rejecting the bill on a party-line Committee vote, despite bi-partisan support in the house (Cheek 2015). The rationale that some Republicans have used to block such bills in 2015 in Colorado illustrates the reason LARC opposition persists.

Opponents first argued that since public and private insurance are already required to cover contraceptives, there is no reason for the state to fund additional programs (PBS 2015). As shown earlier, existing insurance barriers make an excellent case for how funding LARC programs can benefit those who still have trouble accessing LARCs and for providers who have difficulty stocking them. Additionally, the Colorado program itself demonstrated the major public cost savings that can be realized by pursuing an additional LARC program, so such a policy would see net gains rather than net costs.

Citing "the estimate of many people," CO State Senator Kevin Lundberg (R) falsely asserted that IUDs can be used to induce abortions, noting that funding for abortion is prohibited under Colorado law (PBS 2015). These types of statements incorrectly indicate that all LARCs are abortifacients. For those who classify interference with a fertilized egg as an abortifacient,<sup>14</sup> the only use of LARC that is consistent with this belief is the use of a copper IUD as an emergency contraceptive. All hormonal LARC methods (IUD and implant) and most copper IUDs are not used after fertilization has occurred, instead functioning as preventive contraceptives which prevent fertilization in the first place.

Representative Kathleen Conti (R-Colorado) has also argued that funding for long-term birth control is expensive and efforts should focus on promoting abstinence among teenagers (Horsley 2015). However; abstinence-only approaches to contraception have been continually proven ineffective at preventing UPs and the spread of Sexually Transmitted Infections (Bearman and Bruckner 2001; Santelli et al. 2006; Stanger-Hall & Hall 2011).

These arguments would likely reappear in Wisconsin because, like the Colorado Senate that defeated the 2015 LARC appropriation, Wisconsin's Senate is controlled by a Republican majority. Even though in Colorado the appropriation was eventually approved in 2016, this is unlikely to occur in Wisconsin where the House and Senate are both led by Republican majorities. In Colorado, a Democrat-led House was instrumental in advancing LARC funding in both budgeting cycles.

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<sup>14</sup> Medical professionals generally agree that pregnancy begins when a fertilized egg imbeds into the uterine wall. The use of a copper IUD as emergency contraception interferes with this process so the ova never imbeds (ACOG 2014). Some groups believe on moral grounds this constitutes abortion because it interferes with a fertilized egg, though the medical definition of pregnancy has not yet occurred when an emergency contraceptive intervenes.



Because of the ideological convictions of the state leadership in Wisconsin, it is unlikely that even the small amounts of support budgeted for LARC programs in Delaware and Colorado can be secured at this time. This presents a significant barrier to large-scale initiatives across the entire state, but some public support may still be found at the local government level which tend to be less ideologically driven than state politics.

## **A Path Forward: Promoting Greater LARC Use in Wisconsin**

In this section, we present three possible strategies for promoting LARC uptake in Wisconsin. Our strategies include a change to Medicaid reimbursement policy for postpartum LARC insertion, provider education initiatives for private health care systems, and a Milwaukee County LARC access and education program. These strategies are designed to address the barriers explored in the previous section. They illuminate the foundational elements of programs or interventions to improve LARC uptake, but will require further specification with medical and health care professionals before implementation. We assess each strategy based upon health, cost, and feasibility, and conclude that a Milwaukee County program is the most effective and feasible option in the short term to provide evidence of a LARC program's impact in Wisconsin.

### **Goals & Criteria**

We seek to improve health, reduce costs, and develop a course of action that is feasible in Wisconsin. To evaluate *health*, we examine a woman's access to full information about her contraceptive and fertility decisions. Additionally, we estimate the number of Wisconsin women of reproductive age (15-44) with access to the program and the resulting projected increase in LARC uptake. To evaluate the impact on *cost* we first estimate a budget for each alternative program and then project the net expected savings in public medical costs due to varying pregnancy rates and costs of contraception provision. It is important to note that these are drastically understated public cost saving estimates because we does not account for the use of other public assistance programs or impacts on individual families. Finally, we assess *feasibility* through exploration of whether the funding can be secured to carry out the alternative in Wisconsin's political climate and whether it will be easily integrated into provider culture.

### **Strategy 1: Authorizing Medicaid Reimbursement for LARC Insertion Postpartum**

This first strategy modifies Wisconsin's Medicaid program, BadgerCare, to authorize reimbursement for LARC insertion immediately postpartum, as South Carolina and 18 other states have done. There is no current regulation that prevents this, but BadgerCare only reimburses for births through one bundled payment, regardless of the specific services and procedures provided. Given the high upfront costs of inserting a LARC, doing so without a separate reimbursement policy creates a financial loss of the \$700 to \$850 cost of the device. Under the current policy a woman would receive a LARC at her six-week checkup, an appointment missed by 50% of women on Medicaid (Giese 2015). Moreover, an estimated 57% of women have resumed sexual intercourse within six weeks and are thus at risk for another pregnancy (Connolly et al. 2005). Following from this, about a quarter of all women who give birth on Medicaid are at risk for pregnancy under the current policy.

### *Health*

Prenatal doctor visits provide an ideal time for education and consultation regarding a woman's access to and knowledge of contraceptive care. For women with limited health care access, this may be the only time they reliably see a physician. A 2010 study found the most significant baseline characteristic to determine intent to use a LARC was discussion about LARCs with a provider during the prenatal period (Giese 2015). Tang et al.'s (2013) research found that women who had a recent UP and those who didn't want to become pregnant for another two years showed high interest in a postpartum LARC. Despite the ideal timing of contraceptive consultation in the prenatal period, changing Medicaid regulation does not provide training to improve providers' ability to engage in effective contraceptive counseling. Moreover, this strategy only reaches pregnant women; as a result, its impact on women's access to information about their health care is low to medium.

A successful program that reimburses for IUD placement immediately postpartum has the potential to reduce UPs. Women in Wisconsin with one or more children accounted for 26% of all births and a disproportionate 71% of UPs in 2011.<sup>15</sup> Though postpartum LARC initiatives have only recently been implemented, a Colorado study found that pregnancy rates were significantly higher among adolescents who did not receive a LARC immediately postpartum (CDC 2013). Overall, the Colorado program reduced the number of repeat births to teens in the state by 45% in four years (ACOG 2013). Another study also found LARC uptake was nearly twice as high when women who wanted LARCs postpartum were provided one immediately after delivery (Washington et al. 2015).

Postpartum LARC insertion will particularly help reduce the number of "rapid repeat" pregnancies, defined as a pregnancy beginning less than 18 months after a live birth. Insufficient time between pregnancies increases the risk of complications, including miscarriage, stillbirth, low birth weight, and pre-term births (CDC 2013). Rapid repeat pregnancies also result in poorer developmental and socio-economic outcomes for both children (Buckles & Munnich 2012; Karwath, Relikowshki, & Schmitt 2014). If women who want an IUD after giving birth are provided postpartum insertion rather than waiting until their six to eight week appointments, at least 51 rapid repeat pregnancies are avoided per 1,000 women (Washington et al. 2015).

In terms of pregnancy prevention, this strategy only reaches women on Medicaid who are currently pregnant and have the opportunity to have this conversation with their physician, reaching only 2.67% women of childbearing age in Wisconsin annually. We estimate an increase in LARC use by 6,700 devices annually, or less than an additional 1% of reproductive age women (see Appendix D).

### *Cost*

Postpartum LARC insertion has the potential to bring cost savings to state Medicaid programs. Washington et al. (2015) found that allowing postpartum LARC insertion had a cost savings of \$282,540 per 1,000 women who desire a LARC over two years. Based upon our estimate that 10,628 women desire a LARC postpartum in Wisconsin, we project just over \$1.5 million annual cost savings from *Medicaid Unbundling* over a two-year period (see Appendix D). Because this is a regulatory shift, the costs will include allocation of DHS staff time dedicated to

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<sup>15</sup> In 2011 this group accounted for 17,622 births.

implementing the change. We estimate that this would total just under \$18,900 in DHS staff time (Appendix D). The hospitals would then be responsible for implementing correct billing codes and procedures to comply with the new regulation using their own resources.

### *Feasibility*

Postpartum LARC Medicaid reimbursement has been viewed as a feasible policy option for state governments, as evidenced by the 19 states that have implemented a similar policy. Here, several advocacy groups, such as the Wisconsin chapters of ACOG and AAP have held meetings with DHS to encourage Medicaid reimbursement reform (Sara Finger, personal communication, Feb. 4, 2016). Such a change in Wisconsin requires approval from the BadgerCare Director and the Secretary of DHS. Once approved at this level, the change would need to be included in the Governor's budget proposal, which is ultimately subject to legislative approval (Christian Moran, personal communication, Apr 4, 2016). This process requires support from several decision makers, thereby adding many layers of administrative approval and increasing infeasibility. While this may not have prevented adoption in those 19 states, that does not guarantee action among Wisconsin's stakeholders. The DHS Secretary is a governor-appointed position, and as discussed earlier, Wisconsin's governor and legislature have not indicated support for initiatives regarding contraceptive care.

Additional concerns regarding this policy's effect are regulations within BadgerCare that limit coverage to a single LARC device every three years (Katie Gillespie, personal communication, May 6, 2016). In light of the 18% rate of expulsion experienced by women with LARCs inserted postpartum, as detailed in Appendix D, this particular policy element has the potential for a significant disadvantage. For nearly one-fifth of this group, BadgerCare would not pay for another LARC device until after three years, leaving these women particularly vulnerable for another contraceptive method failure and the potential for additional UPs. If Medicaid reimbursement were unbundled, its impact would be hampered without a change to this regulatory element. Together, lack of stakeholder buy-in and complicating Medicaid LARC regulation create low feasibility for this strategy.

Misconceptions and lack of knowledge about postpartum LARC insertion (Biggs et al. 2014) present additional feasibility issues within provider culture. Simply changing a regulation to allow a procedure does not ensure proper implementation and appropriate use among the OB/GYNs who would perform the postpartum insertion. Without the unlikely addition of state funds to increase provider training in postpartum LARC insertion, feasibility in provider culture remains low.

## **Strategy 2: Provider Education Initiative**

The second strategy focuses on increasing primary care provider knowledge and skills in LARC counseling and insertion through formal training. Women receive the majority of preventive care from PCPs rather than OB/GYNs (Haskins et al. 2015); although three-quarters of reproductive-age women see a PCP annually, less than half receive recommended contraceptive counseling services, despite being considered a core competency for PCPs (Akers et al. 2010). This strategy aims to address this educational gap among PCPs.

With support from leadership at Wisconsin’s major health care systems, this program provides training sessions for physicians, physician’s assistants, and nurse practitioners in the primary care disciplines of family medicine, and pediatrics. AboutHealth, a statewide network of eight major health care systems formed in 2014, would administer the program. This network brings together Aurora Health Care, Bellin Health, Gundersen Health System, Aspirus, UW Health, ThedaCare, ProHealth Care, and Marshfield Clinic Health System in an effort to improve health care quality and lower cost. Combined, the health systems are accessible to about 94% of Wisconsin’s population (AboutHealth Web). The initiative would be modeled after efforts in Delaware, where a non-profit group, Upstream USA, is providing training and advice to health centers to improve reproductive health care and access to contraception, with a focus on LARC uptake (Markell 2016).

### *Health*

Studies show that providers who participated in LARC or contraceptive counseling training are more likely to ask patients if they are satisfied with their contraceptive method, to recommend LARCs, and to consider themselves knowledgeable and effective providers of contraception (Luchowski et al. 2014). Programs such as The One Key Question initiative encourage providers ask female patients of reproductive age, regardless of the reason for her visit, if she would like to become pregnant within the next year. If the patient responds that she does not, providers ask if she is satisfied with her contraceptive care. If yes, the provider counsels them on important pre-conception practices. This model of care has the potential to greatly increase the number of interactions about contraception that a woman experiences with her doctor and, thus her access to information about contraceptive care.

Similar programs have shown corresponding positive health impacts. Research demonstrates that, when presented with information about all contraceptive methods and their associated costs and benefits, women are more likely to choose LARCs—especially when that information includes LARCs’ high rate of effectiveness (Luchowski 2014; McNicholas et al. 2014). In one study, evidence-based training in clinics resulted in an 11 percentage point increase in uptake of LARCs, and the rate of UPs in the year following contraceptive counseling fell by nearly 50% (Harper et al. 2015). Based upon the number of women who use private providers for their sexual and reproductive health care, we estimate this intervention will reach 51% of women age 15-44 in Wisconsin and increase in LARC uptake of 61,700 or 5.6% of Wisconsin’s total reproductive age females as a result of this program (see Appendix E).

### *Cost*

Most pharmaceutical companies arrange workshops for providers to teach them how to insert LARC devices at no cost to health care providers themselves, something that could be leveraged to decrease the cost of this strategy. Using this to generate a low-end cost estimate, we assume only an additional \$100 per provider would be required to provide a half-day session on contraceptive counseling. Based on the number of providers in the state who are in a position to provide contraceptive care, but require further training to do so,<sup>16</sup> we project a cost of \$180,000

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<sup>16</sup> This population includes family medicine and pediatric physicians, and nurse practitioners and physicians assistants who can also perform LARC insertion and counseling services. Based on personal communication with Deborah Ehrenthal, it has been estimated that over 95% of OB/GYNs are confidently inserting a LARC method so they are not the target of this program.

to run a statewide education campaign among the six main health care providers in Wisconsin plus lost revenue from forgone billable hours when providers are attending trainings (Appendix E). However, because this limited program does not address logistical scheduling and billing challenges or LARC insertion mentorship from an experienced provider, the impact from this kind of program would be limited.

A more comprehensive program that includes a systems approach to reorganizing work flow to accommodate same-day LARC insertions would be much more expensive. Based upon the experience of Upstream USA which provides intensive, comprehensive assistance to clinics to help them make this change, the most effective statewide program may cost around \$20 million (Peter Belden, personal communication, May 3, 2016). A program like this would be the most effective at maximizing women's access to comprehensive contraceptive counseling and same-day LARC insertion.

Using evidence from Harper et al. (2015) on the reduction in UPs experienced after a provider training intervention, we were able to calculate projected annual medical cost savings. We estimate over \$44 million dollars in savings from avoided UPs if this strategy is implemented. The full rationale for this number is detailed in Appendix E.

#### *Feasibility*

The key stakeholders required to implement this strategy are the leadership of Wisconsin's eight major health care systems. There is an indication that two of these eight key stakeholder groups, the UW Health System and Aurora Health Care system, are interested in the possibilities that LARC promotion holds. However, if peer pressure and quality care improvement is not enough to entice the other six systems, they may not participate. As with any change in organizational and institutional culture, the commitment and enthusiasm of leadership will be a key factor in the success of this program (Weick & Quinn 1999; Hall & Hord 2006). Based upon the interest of several of the major health players, but a lack of incentives beyond quality health care improvement, the feasibility of this alternative is medium.

It is unclear at this point if this intervention would be accepted easily into provider culture because attendance at LARC trainings would not be mandatory; incentivizing participation could help ensure high attendance rates. One incentive is that the training itself could become accredited as a continuing medical education seminar, which providers are required to attend to maintain their medical licenses. We further know that organizational culture is very difficult to change (Moynihan & Landuyt 2009) so providers may protest the integration of comprehensive contraceptive programs into their daily practice. Despite these factors, medical professionals carry a particular commitment to quality of care that drives them towards evidence based practices, such as LARC use. Therefore the feasibility of this strategy in relation to provider culture is medium.

### **Strategy 3: Milwaukee Public-Private Partnership**

This final strategy establishes a public-private partnership program designed to promote LARC use in Milwaukee County. Milwaukee is a high risk, high population area that has great potential for reducing UPs and teen births more generally in a small geographic area. Implementing a program in Milwaukee County alone would expand LARC access for nearly 19% of all

reproductive age women in the state (Appendix F). This will serve as a proof of concept exercise for how a LARC program functions in Wisconsin. The program could be standalone (focusing solely on LARCs) or part of a broader initiative designed to improve health outcomes through provider education and community outreach.

Some successful programs that we use to model this strategy include the Take Control Initiative, a Tulsa, OK effort run by the Tulsa City County Health Department, and the Baltimore Teen Pregnancy Prevention Initiative (TPPI). Both programs operated in densely populated urban areas comparable to Milwaukee.

### *Health*

Women's access to information about their contraceptive care varies based upon the scope of the program implemented in Milwaukee. A program that increases the number of devices a clinic can stock lowers their barriers to inserting the devices, but it doesn't increase their competency at counseling. A more comprehensive program that includes elements of provider education and community outreach would have much better outcomes, particularly if the Oregon One Key Question initiative is integrated into standard practice as discussed in the *Provider Education* strategy analysis. Women's access to information about their health care options is thus low or high depending on the scope of the program pursued.

Even a small program like the Take Control Initiative in Tulsa, Oklahoma can help ensure that LARCs are easily accessible and improve the capacity of a city health system to offer them. Tulsa County saw a 20% drop in the teen pregnancy rate in the first year of the program, and is a critical reason why Oklahoma has the highest LARC usage rate among teens of any southern state (Graham 2015; CDC 2015).

Baltimore also saw a notable increase in LARC uptake. As a result of the program, five of the city's six FQHCs will offer free LARC services. At the city-run clinic on the east side, 35% of women use LARCs, on the west side, 15%. Both are significantly higher than the average of 7.2% (Abell Report). Using a similar program design, 25% of teen patients used LARCs at Title X clinics in Colorado (CDC 2015). Based on this evidence, we conservatively project that a program in Milwaukee County would increase LARC uptake to between 15 and 25% of the female population of reproductive age. This translates to an increase of between 15,900 and 36,300 LARC users, representing 1.4% to 3.3% of the total Wisconsin population of women 15-44. Because of Milwaukee's dense population, we anticipate this strategy expands LARC access for nearly 19% of all reproductive age women in the state (Appendix F).

### *Cost*

A very basic program for Milwaukee county that would invest in LARCs solely to subsidize their cost and encourage higher stocking rates in clinics would take a \$700,000 annual investment. This is based on the \$450,000 investment from the George Kaiser Family Foundation to start the Tulsa program, scaled up to match Milwaukee's population. Several studies have documented that the return on investment of purchasing and using LARC devices is about \$7 per \$1 invested (Frost et al. 2014; Greene Foster et al. 2009), returning \$4.2 million (Appendix F).

Crafting a more comprehensive program that combines LARC subsidies, provider education, and public outreach would be more expensive. Delaware's program is very comprehensive, including all three elements and costs \$10 million. We project that trimming down some of the components while still including elements of provider education and LARC subsidy could yield program startup costs as low as \$5 million. The Colorado program, which combined subsidized LARC devices with LARC insertion and counseling training, found a slightly more modest return on investment of \$5.85 per dollar of investment over three years (CDPHE 2016). This makes the annual return \$8.1 to \$16.2 million. Over three years this adds up to \$24.3 to \$48.5 million (Appendix F).

### *Feasibility*

Thus far there is a national precedent for LARC programs financed by private sources that incorporate government stakeholders. A LARC program in Milwaukee could help promote collaboration between government, non-profits, providers, insurers and community leaders.

The Tulsa program was entirely privately funded. Using this as a model for the Milwaukee program will put pressure on private funders to provide the vast majority of financial support. While local or county funding is possible, it will not cover a significant portion of the budget (Zeltner 2015). Encouragingly, a number of local foundations and investors have shown interest in LARCs or related issues. Both the Helen Bader Foundation and the Greater Milwaukee Foundations have provided small grants to organizations in the Milwaukee area to improve maternal and infant health and increase contraceptive access. The BRICO foundation also has mission alignment with a Milwaukee LARC program and may be a significant contributor. This program needs a wide range of donations or one large benefactor, as the Susan Thompson Buffet Foundation was for the St. Louis and Colorado programs.

To augment these strictly funding sources, opportunities for partner organizations and wider collaborations are plentiful. Some collaborations between public, private and non-profit organizations to promote health are already in place in Milwaukee. One example is the Lifecourse Initiative for Healthy Families, a collaboration between the UW School of Medicine and Public Health, United Way of Greater Milwaukee, and Waukesha County. This program is designed to address infant mortality for African Americans in southeastern Wisconsin, and is piloting the One Key Question initiative as part of its services. The United Way of Greater Milwaukee and Waukesha County also work together to lead Milwaukee's Teen Pregnancy Prevention Initiative.

Particularly because of the prevalence of vulnerable populations in Milwaukee, community engagement will also be essential to a politically successful program. The Pabst Catalyst Initiative for Women's Health, run out of the UW-Milwaukee Zilber School of Public Health, began in June 2015 and consists of three teams formed to assess barriers to LARC access within the city. The initiative works with the City of Milwaukee, the Medical College of Wisconsin, United Way, Planned Parenthood, the Children's Hospital of Wisconsin, and other organizations (Zilber School of Public Health 2016), but is still in the initial phase of planning and seeking funding to pursue programming. Due to the robust interest of stakeholders from funders, organizations, and the community in Milwaukee, the political and fiscal feasibility of this policy is high.

Acceptance into provider culture is largely similar to the *Provider Education* strategy. The same barriers of lack of incentives to attend trainings and difficulty in shifting provider culture remain. We therefore conclude this has a similarly medium level of acceptability in provider culture for a comprehensive Milwaukee program that includes education, but low feasibility for a LARC stocking subsidy only.

## Recommendation

Each of the strategies we have presented is cost effective and would serve to increase LARC uptake while meeting the identified goals of health, cost, and feasibility. The costs associated with implementing each of the programs or regulatory changes are relatively low when compared to the millions of dollars in projected savings. These strategies vary in feasibility and degree of impact, however. Taking into account these factors, we have prioritized each strategy's potential impact on the health of Wisconsin women and feasibility of implementation in determining our recommendation. Doing so has made it clear that there is a vast difference in the number of women who will have greater access to LARCs between the three strategies. The *Provider Education* and *Milwaukee* strategies have a far greater potential for impact on LARC uptake than the *Medicaid Unbundling* strategy. This comparative analysis is summarized in Table 7.

While *Medicaid Unbundling* would have a positive impact on state costs, focusing efforts on the *Provider Education* and *Milwaukee* strategies first will be more effective in increasing LARC use. Between these two options, the analysis has led us to recommend first pursuing the Milwaukee strategy because it is more feasible than a broad, statewide collaboration between health care providers. It also provides an ideal starting point to develop the proof of concept that LARC promotion will work in Wisconsin, while having the greatest possible impact on expanding women's access to these effective contraceptive methods.

We further recommend that government, non-profit, and health care stakeholders who come together to pursue this endeavor consider integrating an evaluation plan in the program design so that intervention effects are accurately identified and measured; these results can then be used appropriately to build action throughout the state. Evaluation plans should be designed with expansion to other parts of Wisconsin in mind. In many ways Milwaukee is unique and incomparable to the rest of the state, so evaluators should make an effort to collect data that is useful and generalizable to LARC programs in other settings.

All three strategies would save Wisconsin money and are feasible given interest from the right stakeholders. If the *Milwaukee* program is implemented and proven successful, the next logical step may be to implement the private *Provider Education* option. Because of the current limited feasibility of *Medicaid Unbundling*, stakeholders should thoroughly evaluate all implications before advocating any alterations to the reimbursement policy.



**Table 7. Summary of Policy Analysis**

	Medicaid Unbundling	Provider Education	Private/Public Milwaukee Co.	
Health	Women's access to information on contraceptive care	Low/Medium <sup>1</sup>	High	Low/High
	Percent of WI Women (15-44) reached by this program	2.7%	51.1%	18.6%
	Projected increase in LARC uptake as a % of all women (15-44) in WI	0.6% (6,700 devices)	5.1% (55,600 devices)	1.4% - 3.3% (16,000-36,000 devices)
Costs	Budget for intervention implementation	\$18,900	\$180,000 - \$20 Million	\$0.7 – 10 Million
	Net Savings to Public Medical Costs (annual average)	\$1.5 million	\$44.4 Million	\$4.2 – 16.2 Million
Feasibility	Funding/Political Feasibility	Low	Medium	High
	Compatibility with Provider Culture	Low	Medium	Low/Medium

<sup>1</sup> See Appendix G for qualification of low, medium, and high designations

## Conclusion

LARCs are a powerful tool that give women control over when they start a family, creating significant benefits for society in the process. Because they eliminate human error and are long-acting, these contraceptive methods are the most effective, affordable option for preventing UPs. However, despite these benefits, they are still used at relatively low rates because of cost, access, and information barriers associated with stocking the devices and providing adequate training for the provider in LARC placement and contraceptive counseling. Furthermore, the contentious political nature of contraceptive programs indicates that public support at the state level is difficult to secure for a LARC initiative.

We present and analyze three strategies for promoting LARC use in Wisconsin. There is immense value within each of our strategies; however, the research and analysis we have provided should not be considered exhaustive. The scope of this report and the description of each strategy do not sufficiently capture all of the nuances associated with changes to health care systems. As such, the proposed policies and programs will require additional research and logistical consideration for optimal implementation.

Following from the analysis presented in this report, we recommend that a targeted *Milwaukee* program be used to increase provider and consumer education about LARCs and improve access to these methods. Such a program should include an evaluation component to effectively document the benefits of LARCs for Wisconsin and provide evidence to support the pursuit of the other two strategies. Ultimately, we recommend that all three strategies discussed be pursued as their feasibility improves due to an increasing wealth of information on the benefits of LARCs from Milwaukee and other programs around the nation. This is the best course to reduce the significant costs of UPs in Wisconsin.

## Appendix A

This appendix contains more information about the methodology used in the formulation of this report. The following describes our use of data sources and interviews.

### Data Sources

The number of annual live births for each state in the report was obtained from the U.S. National Center for Health Statistics, which is comprised of vital statistics and national health survey data. Wisconsin-specific data on the Special Supplemental Nutrition Program for Women, Infant, and Children (WIC) and Medicaid costs were accessed to estimate average costs per birth.

The proportion of births resulting from intended and unintended pregnancies was obtained from the Pregnancy Risk Assessment Monitoring System (PRAMS). PRAMS is a collaborative effort between states and the Centers for Disease Control and Prevention (CDC) and represents data for approximately 78% of all live births in the U.S.

### Interviews

- Gregory Aune, Communications Specialist with Aspirus Health Care. April 11, 2016.
- Peter Belden, President, Upstream USA. March 3, 2016.
- Jolena Betts, Regional Account Executive, Illinois & Wisconsin, Bayer. May 4, 2016.
- Sara Finger, Executive Director, Wisconsin Alliance for Women's Health. February 4, 2016.
- Katie Gillespie, Maternal/Perinatal Nurse Consultant, Bureau of Community Health Promotion/Division of Public Health. May 6, 2016.
- Jenny Higgins, Assistant Professor, UW-Madison. February 18, 2016
- Christian Moran, Department of Health Services. April 12, 2016.
- John Torinus, Chairman, BizStart Milwaukee. March 21, 2016.

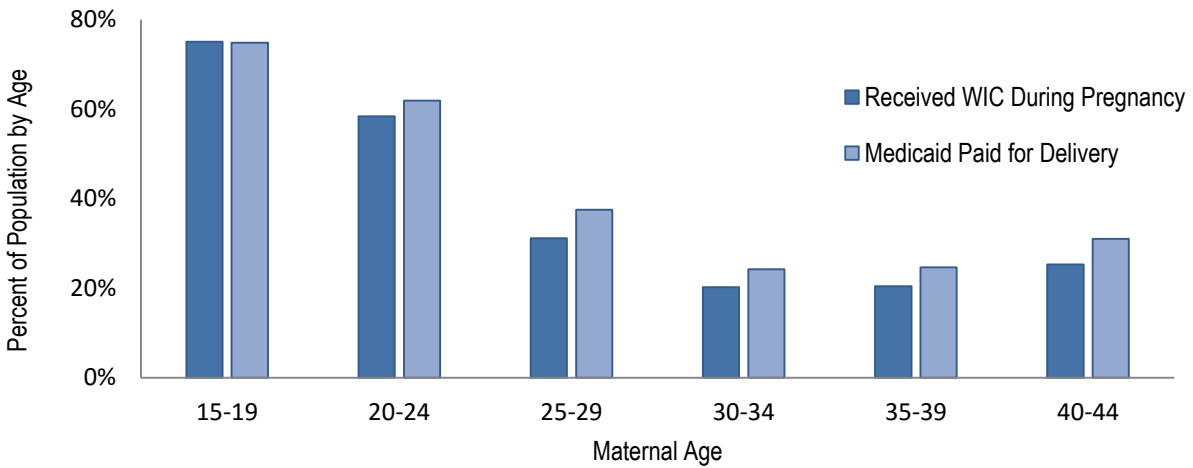
## Appendix B

The following data and calculations were used to estimate the cost of providing WIC for women who are unintendedly pregnant.

**Table B1. Wisconsin WIC Expense Calculations**

2011 Unintended Pregnancies	24751
2011 Unintended Pregnancies on WIC	13836
Average Food Cost/Person	\$ 44.50
Number of Months on WIC while Pregnant	9
Total Annual Food Cost/Person	\$ 400.50
Total Annual Food Cost for UPs	\$ 5,541,318.00
Total Annual Food Cost for State of Wisconsin	\$ 58,154,595.00
Percent of WIC Food Costs of UPs	10%

**Figure B1. Public Assistance for Wisconsin Mothers – WIC and Medicaid**



Source: WISH

## Appendix C

This appendix provides a comparison of the population characteristics of births and unintended pregnancies for Wisconsin, Colorado, and the United States.

**Table C1. 2011 Population Characteristics by Pregnancy Intention**

	Wisconsin		Colorado		U.S. Total	
	Percent	Number	Percent	Number	Percent	Number
<b>Total Live Births</b>	100	67810	100	65055	100	3953590
Unintended Pregnancies	36.5	24751	35.9	23355	40	1581436
Intended Pregnancies	63.5	43059	64.1	41700	60	2372154
Medicaid Paid:						
Delivery	42.8	29023	38.5	25046	46.2	1826559
Prenatal Care	41.4	28073	33	21468	42.8	1692137
WIC Recipient	38.3	25971	36.5	23745	45.4	1794930
<b>Unintended Pregnancies</b>						
Mistimed	26.8	18173	28.4	18476	30.4	1201891
Unwanted	9.8	6645	7.5	4879	9.6	379545
Income:						
Less than \$10,000	29.1	7203	30.3	7077	31.2	493408
\$10,000 - 24,999	25.1	6213	32.2	7520	30	474431
\$25,000 - 49,999	21.9	5420	18.5	4321	19.5	308380
\$50,000 or more	23.9	5915	19.1	4461	19.3	305217
Medicaid Paid:						
Delivery	59.6	14752	60.4	14106	63.9	1010538
Prenatal Care	58.1	14380	52.4	12238	59.9	947280
WIC Recipient	55.9	13836	51.3	11981	62.4	986816

## Appendix D

The following data and calculations support the estimates and projections we calculated for the cost and health impact of the *Medicaid Unbundling* strategy. Much of the data used in this section comes from a decision analysis performed by Washington et al. (2015) that compared LARC use, unintended pregnancy rates, and cost-effectiveness of immediate post placental LARC insertion versus routine insertion six to eight weeks after birth.

The data in Washington et al. only addresses IUD use among women who desire an IUD postpartum. We believe this is an appropriate population source for our numbers because there is no explicit education or contraceptive counseling component to this intervention that would encourage more women to take up IUDs. Individual doctors who decide to champion postpartum LARCs once the regulation goes into effect may violate this assumption, but we believe this number will be small based upon the fact that lingering (and mostly incorrect)<sup>17</sup> perceptions remain that immediate postpartum LARC insertion has higher safety risks than routine insertion (Washington et al. 2015). We therefore assume in these calculations that there would be no effect on the uptake of LARCs among women who give birth and do not want an IUD inserted.

### *Women Reached*

We first isolated the population of women that would be affected by this policy change. Only women who give birth and are on Medicaid would be affected by this change, or 43% of the over 68,500 average births (2008 to 2014) that occur in Wisconsin.

$$68,550 \times 0.43 = \mathbf{29,339 \text{ Annual Births on Medicaid}}$$

As a proportion of the total Wisconsin population of women ages 15-44 (1,097,809 annual average 2008-2014) this represents only 2.67%.

### *Increase in LARC Uptake*

Washington et al. found that among 1,000 women who wanted a LARC postpartum, LARC usage increased from 510 to 1,090 when postpartum insertion was an option. In order to identify a comparable population in Wisconsin of women who want a LARC postpartum, we used PRAMS 2012 data to identify the percent of women who report using a LARC in the weeks just after they give birth (20%; Ehrental 2016). Assuming that this number was comparable to the 510 identified in the Washington piece (as Wisconsin Medicaid policy does not reimburse for postpartum LARC insertion), we then applied the 214% increase to project the LARC uptake if immediate postpartum insertion was an option:

$$\begin{aligned} 29,339 \times 0.2 &= \mathbf{5,868 \text{ Postpartum Women on Medicaid who Use LARCs}} \\ 8,226 \times 2.14 &= \mathbf{12,541 \text{ LARCs Used if Postpartum Insertion Allowed}} \\ \mathbf{12,541 - 5,868} &= \mathbf{6,673 \text{ Increase in LARC Users}} \end{aligned}$$

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<sup>17</sup> Some concerns include risk of infection, bleeding, and higher expulsion rates. Among these only higher expulsion rates have found to be true risks based on statistical analysis (Chen et al. 2009; Eroglu et al. 2006; Washington et al. 2015).

This results in an increase of approximately 6,700 LARCs used under this intervention, or 0.6% of the state's women age 15-44.

### *Costs of Implementation*

Implementation of this strategy is burdened less by financial costs, but its time costs are significant. Advocates for the strategy will have to pitch a proposal to DHS, who will then need to perform a cost analysis. The initial meeting would likely occur with the Hospital Rate Setting Section of DHS, but may also require involvement from agency employees who focus on pharmacy reimbursement and Medicaid policy. If DHS decides to move forward on the policy change, it will require approval from the Medicaid Director and the DHS Secretary. From there, DHS will have to develop billing codes and establish new procedures while advocates help push for the policy's inclusion in the Governor's budget. This will also require good timing. Wisconsin's two-year budget cycle means there is a limited window for adding changes. Without prompt action, there may not be enough time to ensure placement in the Fiscal Year 2017-18 budget.

If this strategy is adopted, DHS will need to ensure a wide range of stakeholders are aware of the new changes. South Carolina's "Postpartum LARC Toolkit" (2016) provides a thorough overview of the actions necessary to ensure efficient implementation. At the administrative level, the state will need to ensure that all relevant Medicaid contractors are notified of the change. Hospitals would have to manage even more moving parts: providers will need education on both the importance of offering postpartum LARC services and how they can be reimbursed for the insertion procedures; hospital pharmacies will need to ensure that a sufficient number of LARCs are in stock or establish a procedure for physicians to order them immediately before the procedure; IT departments will have to modify their billing software to ensure that billing codes match state requirements and that physicians can utilize them in a way that prevents error; hospital leadership will have to consult with physicians to help develop counseling, consent, and insertion procedures and ensure that all women receive counseling on LARCs prepartum; and nurses will need to know how to consult with patients as well, since they will likely spend more time with patients than physicians. Extensive resources to address all of these issues are available through the SC Department of Health and Human Services, the Association of State and Territorial Health Officials, and a guide to IUD reimbursement developed by a coalition of provider and family planning organizations (Armstrong et al. 2015).

Based upon the workload of similar policy changes in the past ten years we project that this regulation change would take 400 hours. An entry level policy analyst in DHS makes an annual salary of about \$56,500. Calculating their hourly wage we arrive at a cost estimate of \$10,800 for this strategy

$$56,500/2,080 = \$27.16$$
$$27.16 \times 400 = \mathbf{\$18,865 \text{ Expense to Change Medicaid Regulation}}$$

### *Medical Cost Savings*

The figures used to calculate the potential medical cost savings of this strategy are also derived from Washington et al.'s findings that for every 1,000 women who desire an IUD postpartum, \$282,540 is saved over a two year time horizon. First, we needed to identify what our comparable "1,000 women who desire an IUD postpartum" group would be to account for the number of IUDs inserted, then expelled and replaced that are included in the 12,541 LARC use estimate we generated. Immediate postpartum LARC insertion has a higher rate of expulsion than placement at six weeks, about 18% (Washington et al. 2015: 132). Presuming this 18% expulsion rate for the study population, we estimate the number of women in the Wisconsin sample who "desire an IUD postpartum" to be 10,628 by the following logic:

$$(Y)(0.18) = 12,541 - Y$$

**Y = 10,628 Annual Women Who Desired an IUD Postpartum**

This removes women who had an expulsion event and received two IUDs from the sample, allowing us to calculate the cost savings as follows:

$$(10,628/1,000) \times 282,540 = \mathbf{\$3,002,850 \text{ Cost Savings over Two Years}}$$
$$\mathbf{\$4,209,603/2 = \$1,501,425 \text{ Average Yearly Savings}}$$

In the report body we round our cost savings estimate to about \$1.5 million annually, showing substantial savings despite the fact that this population experiences a higher rate of expulsion than the population generally.

## Appendix E

The following data and calculations support the estimates and projections we calculated for the cost and health impact of the *Provider Education* alternative. Much of the data that supports this analysis has come from the experience and impact of Upstream USA, a non-profit organization that provides training on IUD counseling and insertion for providers and support staff at clinics throughout the U.S. Additional evidence on change in LARC uptake and UP prevention after a training-focused intervention comes from a cluster randomized control trial conducted by Harper et al. (2015) and Frost's (2013) report on trends in when and how women access Sexual and Reproductive Health (SRH) care.

### *Women Reached*

We expect that providing education to physicians who practice in a privately owned health care system will impact about 51% of the female population in the state. In the U.S. 71% of women (44 million) age 15-44 see a health care provider annually for some kind of SRH care and 72% of these women use a private provider. This indicates that the total population of women age 15-44 in the U.S. is just under 62 million. Among these, 51% of these women use private providers for their SRH care nationally.

$$(62,000,000)(.71)(.72) = \mathbf{31,680,000 \text{ Women Access SRH through Private Providers}}$$
$$31,680,000/62,000,000 = \mathbf{0.5112 = 51\% \text{ of Women Access SRH through Private Providers}}$$

### *Increase in LARC Uptake*

Harper et al. report that after providing training to clinics, their LARC uptake rate increased from 17% to 28%. The no-training control rate of 17% is much higher than the national average of 7.2% because the Harper study was conducted through reproductive health clinics which specialize in contraceptive care; providers in these clinics are, on average, are better at promoting LARC use among their patients. However, this 11 percentage point increase is consistent with increases that have resulted from other LARC promotion programs in Colorado and Baltimore.

While we anticipate that the participating physicians in the *Provider Education* strategy will be from primary care disciplines and not focused exclusively on SRH, the findings of Harper, et al. are still applicable as a relative ratio for change that may occur in this different setting. In fact the potential for growth due to the training will likely be even larger because current comfort with this technology is so low within the PCP community. Further, although Harper et al. limit their study to include only reproductive health centers, we recognize that women do not exclusively seek out family planning services or contraceptives at reproductive health centers. Thus, our strategy includes additional PCPs. We believe that using these numbers is an appropriate and conservative estimate for how the strategy will impact LARC uptake in Wisconsin.

We project that 51% of women are receiving better contraceptive counseling and services from their private providers, totaling about 561,200 women. Applying the 17% and



28% figures to this population yields an increase of 61,732 LARC devices in the state of Wisconsin or 5.6% of the state's Women age 15-44.

*Cost of Implementation*

By searching the physician directories online of the eight major health care providers in AboutHealth we estimate that there are approximately 1,821 PCP providers who would be trained in this strategy. In this pool we included family medicine physicians, pediatricians, physician's assistants, and nurse practitioners. While OB/GYNs are sometimes lumped in with PCPs, their level of comfort with IUD insertion is estimated above 95% (Ehrental 2016), so this population is not in need of further training on IUD technology.

**Table E1. Calculations on LARC Uptake for Strategy 2**

WI Women 15-44 (2008-2014 AVG)	1,097,809
51% who use a private doctor for SRH	561,199.96
17% pre-training LARC use	95,403.99
28% post-training LARC use	157,135.99
Increase due to training	61,732.00
Increase as a percent of WI Women 15-44	5.6%

**Table E2. Number of Providers by Discipline and Health System**

	Aspirus	Aurora	Bellin	Gundersen	Marshfield	Pro Health	ThedaCare	UW-Health	TOTAL
Family Medicine	119	258	59	79	126	69	145	108	963
Pediatrician	19	195	12	22	74	43	22	38	425
Nurse Practitioner*	39	72**	43	29	35	19**	33	8	278
Physician's Asst.*	18	35**	18	26	17	9**	9	23	155
<b>TOTAL</b>	<b>195</b>	<b>560</b>	<b>132</b>	<b>156</b>	<b>252</b>	<b>140</b>	<b>209</b>	<b>177</b>	<b>1821</b>

\*Includes both pediatrics and physicians assistants

\*\* No data available. Number of providers in this discipline projected off of ratio between Marshfield and the system in question's family medicine providers.

Once we established the population of physicians, we estimated the cost of providing LARC training to them. There is a lot of uncertainty in this process because the costs vary widely based upon who provides the training. Many pharmaceutical companies send instructors around to clinics and other medical centers to host trainings on inserting IUDs and arm implants for free because they have an interest in having more doctors inserting their products. The Family Planning National Clinical Training Center also offers trainings in insertion methods and charges a \$75 fee per trainee for IUD insertion trainings, arm implant trainings are free. In order to develop a low end estimate we estimate that using free pharmaceutical trainings for insertions and then \$100 a head for providing a half-day training on contraceptive counseling with free materials from One Key Question and Bedsider. For about 1,800 providers the training costs would thus be \$180,000.

Our high end estimate of \$20 million dollars was based upon an interview with Peter Belden, co-founder of Upstream USA. This non-profit organization is partnering with Delaware to provide all of their training services to local clinics. They practice a very comprehensive model of intensive in-services where they go into a clinic and shut down their operations for three days to provide comprehensive education to all staff on not only contraceptive counselling and LARC insertion, but also organizing the logistics of scheduling same-day LARC insertions and billing for the devices and procedures to achieve maximum reimbursement. They pay the clinic for the lost revenue for the days during which they close operations in order to do the training. Understandably, this approach is much more expensive, but much more effective.

### *Medical Cost Savings*

From the Harper et al. (2015) randomized control trial we learn that per 100 women who go to clinics that have received training in best practices for family planning visits 7.9 pregnancies will occur in the year after their visit while 15.4 pregnancies occur per every 100 women at clinics with no LARC training.

In order to apply these numbers to our Wisconsin case, we had to first identify a similar Wisconsin population to the Harper et al. design. Their study included only women who did not want to become pregnant in the next year when they were recruited into the trial and the follow-up period to check for pregnancy was one year later. We expect that 100% of pregnancies that resulted in this study were therefore unintended, though some of the women in the sample may have stopped using their birth control method in order to become pregnant. We therefore sought to identify unintended pregnancies among our target population (women who get SRH from private providers), by applying our 51% population estimate to the 25,226 UPs born in WI on average from 2008-14. While we recognize that there may be differences in the distribution of UPs among women who use private versus other forms of provider care, we believe applying the general statewide number to this specific population produces a middle of road estimate. On the one hand UPs are likely concentrated among poorer less established women who rely on community and public clinics to meet their SRH needs, so the number of UPs in this population may be overstated. However, our sample does not consider that in training routine practice doctors like family medicine and pediatric providers they will now be able to start these conversations with patients who previously did not seek SRH on a yearly basis, so the UP estimate is understated for this population as well. This will thus isolate a comparable, if imperfect, population of Wisconsin women in a year who did not want to become pregnant but did anyway that roughly corresponds with the upper bound of 15.4 pregnancies per 100 found in the Harper et al. study.

$$(0.51)(25,226) = \mathbf{12,896 \text{ UPs among Users of Private SRH Care}}$$

Converting the findings of Harper et al. (2015) into per 1000 women units we observe a reduction of 75 UPs per 1000 women who don't want to get pregnant (154-79) or a 49% reduction in UPs. We applied this change to the UPs among our target population and estimated Medicaid cost savings based on the following computations:

$$\begin{aligned} (12,896)(0.49) &= \mathbf{6,280 \text{ Fewer UPs among Users of Private SRH Care}} \\ (6,280.39)(0.6) &= \mathbf{3,768 \text{ of these UPs Paid for by Medicaid}} \\ (3,768.23)(12,677) &= \mathbf{\$47,732,226 \text{ Gross Savings in Medicaid Payments}} \\ \$47,732,226 - [(\$47,732,226)(.07)] &= \mathbf{\$44,390,970.00 \text{ Net Savings after Contraceptive Expenses}} \end{aligned}$$

Using an estimate that providing contraceptive programming costs 6 to 7% of the avoided costs of avoided unintended pregnancy from (Laliberte et al. 2014) we find a potential savings of over \$44 million from the implementation of this strategy.

## Appendix F

The following data and calculations support the estimates and projections we calculated for the cost and health impact of the *Milwaukee* initiative. Much of the evidence we use to build our projections is based upon the experience of cities that have undertaken similar initiatives such as Tulsa and Baltimore. We also reference the evidence from Colorado’s program because, though it is statewide rather than citywide or countywide, the components of the program are very similar to what we propose for a *Milwaukee* initiative.

### *Women Reached*

One of the key benefits of concentrating on Milwaukee County is that it has a very high concentration of the state’s population. Of the over one million women of reproductive age that live in Wisconsin, 204,000 reside in Milwaukee County. Using averages for 2008 to 2014, we find that 18.6% of women age 14-55 in Wisconsin would be reached by a countywide program of this nature.

$$204,026/1,097,809 = .186 = 18.6\%$$

While it is important to recognize that a Milwaukee program cannot possibly reach every single woman 15-44 who lives in the County (nor does it need to as some women prefer or require no contraceptive services) this number represents the percent of the state’s reproductive women who could potentially take advantage of this program.

### *Increase in LARC Uptake*

Evidence from clinics that have placed a greater emphasis on comprehensive contraceptive counseling and provision of LARC methods show increases in LARC use across the board. However, the range of increase that is observed is wide. A clinic on one side of Baltimore report 35% of their service population uses LARCs meanwhile on the other side of Baltimore two clinics report 15% use (Abell Foundation 2015), both higher than the 7.2% national average (CDC 2015). The CDC (2015) reports that for teen Title X clinic patients in Colorado LARC use is about 25%. Based upon this we determined that we would calculate a range of increased uptake at the lower end of these estimates (15 to 25%) to maintain a conservative estimate of the impact of the program.

**Table F1. LARC Uptake Projections for Milwaukee Co.**

% LARC use among Milwaukee Women 15-44 (204,206)	Number of LARC Users	Increase from Baseline	Increase as a % of Total Wisconsin Women 15-44 (1,097,809)
7.2% Baseline <sup>1</sup>	14,700	--	--
15% projection	30,600	15,900	1.4%
20% projection	40,800	26,100	2.4%
25% projection	51,000	36,300	3.3%

<sup>1</sup>From CDC 2015

### *Cost of Implementation*

A base cost of \$700,000 was assumed to provide a LARC stocking subsidy in Milwaukee clinics. This is based on the \$450,000 the George Kaiser Family Foundation invested in the Tulsa take action initiative, multiplied by 1.5 and rounded up since Milwaukee’s population is 150% of Tulsa’s (KFF 2011). This is the bare minimum needed to fund a small-scale program that will ensure women can access LARCs at all participating clinics in the city.

For a larger-scale initiative that includes provider education and broader outreach programs, we estimate needing at least \$5 million to get the program off the ground. Delaware’s statewide program will have an initial budget of \$10 million to help clinics stock LARCs, hold education sessions for providers, and to fund outreach sessions to teach women about the safety and effectiveness of LARCs (Rini 2016). About 80% of the Delaware program is funded by private donors and foundations, and we estimate a Milwaukee program will need a higher percentage of private funding. The provider education portion of the program will reach all of the publicly funded clinics and the largest providers in the state (Upstream USA Web).

Delaware has six family planning clinics that are operated with Title X funds through their Division of Public Health (Office of Population Affairs 2016; State of Delaware Web 2015). There are also six Title X clinics in Milwaukee County. Delaware and Milwaukee County also have similar total populations (See Table F2). This makes the cost of Delaware’s program roughly comparable to what a similar comprehensive program may cost in Milwaukee County, though based upon combining free insertion training with counseling training,<sup>18</sup> limiting groups to target for provider education, or limiting or eliminating community outreach would significantly lower these costs, leading us to our lower end \$5 million estimate for a Milwaukee County program that includes some LARC subsidies. This estimate was further confirmed as a reasonable projection with founder Peter Belden of Upstream USA.

**Table F2. Comparison of Delaware and Milwaukee County**

	Delaware	Milwaukee County
Title X Clinics	6	6
Population	916,775 <sup>1</sup>	947,077 <sup>2</sup>

<sup>1</sup>From CENSUS 2010 & 2014 Average

<sup>2</sup>WISH 2008-14 Average

Based on the range of programmatic elements that the leaders wish to include we therefore predict a program budget of \$0.7 to \$10 million dollars depending on how many elements are incorporated into the program.

### *Medical Cost Savings*

From cost benefit analyses conducted in the literature (Frost et al. 2014; Greene Foster et al. 2009) we know that the rate of return on investing \$1 in LARC returns \$7 of medical cost savings. If Milwaukee County implemented a bare bones \$700,000 program (annually) to subsidize the purchase cost of LARCs for clinics, this translates to a nearly \$4.2 million dollar return after expenses as all of the LARC devices are used; though based on the nature of the program with no education or outreach component the expected increase in uptake would likely be on the lower 15% LARC use we estimated in the previous paragraphs.

<sup>18</sup> See budget analysis in Appendix D

However, from the experience of places like Colorado, we know that including an education element for a more comprehensive program returned less in immediate savings at \$5.85 returned over three years for every \$1 spent. A \$5 million bare bones combination program would thus return nearly \$8.1 million in average annual savings and a full Delaware-style \$10 million dollar program would return \$16.2 million. Over a longer three year time horizon these costs jump even higher to about \$24 million and \$49 million respectively while the returns from the LARC subsidy approach stays the same because

**Table F3. Cost Savings from Three Program Models in Millions of Dollars**

Program Description	Budget	Gross Cost Savings	Annual Net Cost Savings (Gross – Budget)	Three Year Net Cost Savings (Gross – Budget)
LARC Subsidy Only	\$0.7	\$4.9	\$4.2	\$4.2
Limited Combination Program	\$5	\$9.75	\$8.1	\$24.3
Comprehensive Combination Program	\$10	\$19.5	\$16.2	\$48.5

## Appendix G

This Appendix provides a visual summary of our analyses of the three strategies we present.

**Table G1. Extended Summary of Policy Analysis**

	Medicaid Unbundling	Provider Education	Private/Public Milwaukee Co.	
Health	Women's access to information on contraceptive care	<b>Low/Medium:</b> Providers have incentive to talk to pregnant women about LARCS, misses people who aren't pregnant	<b>High:</b> Providers have increased knowledge and skills to talk to women about LARCS and other contraceptive methods	<b>Low/High:</b> High estimate contingent on comprehensive program design that includes education and outreach
	Percent of WI Women (15-44) reached by this program	2.7%	51.1%	18.6%
	Projected increase in LARC uptake as a % of all women (15-44) in WI	0.6% (6,700 devices)	5.1% (55,600 devices)	1.4% - 3.3% (16,000-36,000 devices)
Costs	Budget for intervention implementation	\$18,900	\$180,000 - \$20 Million	\$0.7 – 10 Million
	Net Savings to Public Medical Costs (annual average)	\$1.5 million	\$44.4 Million	\$4.2 – 16.2 Million
Feasibility	Funding/Political Feasibility	<b>Low:</b> No legislative approval required. Success in both traditionally liberal and conservative states shows policy changes is possible	<b>Medium:</b> No legislative approval required. Indication that large health care systems in WI are on board. Trainings can be relatively low cost.	<b>High:</b> Most successful programs have had public funding will need many grants, donors. Supporters exist, need to bring together.
	Compatibility with Provider Culture	<b>Low:</b> Postpartum insertion is not currently a widespread practice and misperceptions exist re: appropriate postpartum insertion practices.	<b>Medium:</b> Providers cite registration costs as an important factor in completing continuing medical education (CME). Our proposed fee is on the low end but attitudes are mixed about commercial support of CME, which we include.	<b>Low/Medium:</b> Training in insertion and counseling should address misconceptions some providers have about LARC methods. Feasibility depends on comprehensiveness of program.

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