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LONG-ACTING REVERSIBLE CONTRACEPTION LITERATURE REVIEW

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Introduction

This literature review assesses long-acting reversible contraception (LARC) utilization in the U.S. and highlights strategies that Arkansas could consider to increase the use of this contraception method. LARCs, which include both contraceptive implants and intrauterine devices (IUDs), are the most effective form of reversible birth control available and are more than 99% effective in preventing unintended pregnancy.[1] While LARC use has increased in recent years, significant gaps persist among certain populations, including adolescents, low-income women, and postpartum women.

Methods

PubMed, OVID, and Web of Science were the primary databases used to obtain peer-reviewed literature for analysis. The following search terms were used to compile relevant articles for inclusion: Long-acting reversible contraception (LARC) utilization, LARC access, LARC provider(s), LARC patient(s), LARC barriers, LARC facilitators, and LARC state initiatives. National data sources used in this review include the National Survey of Family Growth and the Pregnancy Risk Assessment Monitoring System. Additionally, grey literature was explored, including state and federal government reports and analyses from national health policy organizations.

Findings

LONG-ACTING REVERSIBLE CONTRACEPTION UTILIZATION

The National Survey of Family Growth (NSFG) is a nationally representative survey conducted by the Centers for Disease Control and Prevention with support from other federal health agencies. Data from the 2017-2019 NSFG found that 65.3% of women aged 15-49 were currently (at the time of the survey) using any form of contraceptives, with 10.4% reporting using LARCs.

Among women using LARCs, use was highest among those aged 20-29 (13.7%) and 30-39 (12.7%), with lower rates among women aged 15-19 (5.8%) and women aged 40-49 (6.6%). LARC use was higher among women with a bachelor's or higher degree (13.1%), followed by women with some college but no degree (12.5%), women with no high school diploma or GED (9.3%), and women with a high school diploma or GED (7.9%).[2] Among respondents who reported discontinuing a contraceptive method due to dissatisfaction, 33.1% had been using an IUD, with the leading reason for discontinuing its use being side effects (65.3%).[3]

Rates of any contraception use in the postpartum period in Arkansas have trended downward since 2016, based on data from the Pregnancy Risk Assessment Monitoring System (PRAMS). In 2021, 77.1% of postpartum mothers in Arkansas reported using any form of contraception in the postpartum period (two to four months after delivery), a 6.3 percentage point decrease from 83.4% in 2016. Only 16.4% of postpartum mothers in Arkansas reported using long-acting reversible contraception in 2021, an increase of less than 1 percentage point from 15.5% in 2016.[4]

Data on LARC utilization in rural vs. urban areas are limited. However, the few relevant studies identified in the literature search suggest that rurality itself has not necessarily been a barrier to LARC access. A study using claims data from approximately 240,000 Oregon Medicaid beneficiaries between 2015 and 2017 found that 11.6% had at least one claim indicating LARC use, with no significant rural-urban difference overall. However, women residing in urban areas were slightly more likely to have an IUD, and areas with more women's health specialists also experienced slightly higher use of IUDs.[5] An older state-specific study, using Michigan PRAMS data from 2004-2008, found low rates of LARC use overall (6.7%), with no significant differences between rural and urban women.[6] A study using PRAMS data from 2015-2018 from 20 states and jurisdictions found that 1 in 5 women were using LARC in the postpartum period. While the primary focus of the study was on the role of insurance in postpartum contraceptive use, after adjusting for insurance status and other factors, the study found that women residing in rural areas were about 1.3 times more likely to use LARC compared to women in urban areas.[7]

BARRIERS TO THE UPTAKE OF LONG-ACTING REVERSIBLE CONTRACEPTION

Peer-reviewed literature identifies barriers to LARC uptake at the healthcare system, provider, and patient levels.

System-Level Barriers

Patient access to LARC is often shaped by system-level barriers. Factors include how services are reimbursed, whether clinics can afford to stock LARC devices, and institutional protocols, or the lack thereof, that impact the provision of LARC.

The Affordable Care Act requires health plans to cover the cost of all approved contraceptive methods, with no cost-sharing requirements for patients. Additionally, federal guidelines require state Medicaid programs to cover LARC removal and insertion costs.[8] While these rules address patient-related cost concerns, cost hurdles remain at the provider and clinic levels.

Peer-reviewed literature consistently identifies cost challenges as major system-level barriers.[9,10] A study assessing the results of the Increasing Access to Contraception Learning Community initiative, a national program that sought to improve access to contraception in 26 states and one U.S. territory, found that 89% of those involved with the initiative identified system-level barriers to LARC access. These barriers included reimbursement complexities, high costs for acquisition and stocking of LARC devices, and a lack of billing and stocking protocols at delivery facilities.[9] The high upfront costs associated with the acquisition of LARC devices can be particularly impactful among safety-net clinics with limited resources. Additionally, low-income women perceive greater barriers to LARC access and hold more negative perceptions of LARC compared to higher-income women.[11]

Cost constraints at the system level also create logistical barriers for patients. Because many clinics cannot afford to purchase and maintain a stock of LARC devices, this limits opportunities for same-day insertion (i.e., insertion during the same visit in which a patient requests a LARC device). The American College of Obstetricians and Gynecologists

recommends same-day insertion of LARC when possible, a practice that has been demonstrated to improve the uptake of LARC by removing the need for a second visit following contraceptive consultation.[12] When patients have to make a second appointment for insertion, there is a significant decrease in follow-through.[13] Nevertheless, some clinics require a second visit for a patient to receive a LARC device.[11] Barriers to same-day insertion may also result from insurance hurdles such as prior authorization requirements.

Some studies highlight how system-level barriers play out in clinical practice. A 2020 study of 363 providers in a large academic health system found that fewer than half of providers offered LARC in a single visit. The inability to provide LARC in a single visit was attributed to scheduling constraints, insurance and billing concerns, and device stocking practices.[14] A 2020 mystery shopper survey of 50 gynecology practices in western Pennsylvania found that adolescents encountered barriers when seeking IUDs, including being required to make multiple visits. The survey also found that some gynecology practices had policies that conflicted with professional guidelines, such as requiring testing for sexually transmitted infection prior to provision of services. Additionally, half of the practices identified in the study required parental presence during LARC insertion, despite a state law permitting minors over age 14 to consent to contraceptive services.[15] This issue was also identified in a broader review conducted by Kumar & Brown.[16]

A 2025 study assessed the implementation of immediate postpartum LARC programs in Pennsylvania, seven years after the state began reimbursing for immediate postpartum LARC. Survey results found that many hospitals continued to struggle with inconsistent insurance coverage and limited resources to provide LARC. Larger hospital systems and the state's perinatal quality collaborative were found to be essential in helping smaller and more rural hospitals successfully implement programs.[17]

Provider-Level Barriers

Providers play a key role in contraceptive counseling, yet knowledge gaps and misconceptions among providers are frequently cited as barriers to LARC uptake. In this review, "provider" is used as a broad term and reflects literature examining physicians (including obstetrician-gynecologists, or OB-GYNs; family medicine physicians; and pediatricians) as well as nurse practitioners, physician assistants, and certified nurse midwives. A 2018 systematic review by Phillips & Sandu identified three categories of provider-related barriers related to LARC, including deficits in provider education/competency, a lack of hands-on training, and practice-related barriers.[18] Similarly, a 2020 systematic review of healthcare professionals' views found that time constraints during patient appointments, insufficient training on LARC methods, and provider misconceptions regarding potential side effects and patient suitability often limited whether LARC was discussed during patient counseling.[19]

Literature has also explored provider training on LARC within medical school and residency programs. A 2015 study found that despite a requirement that OB-GYN residency programs include family planning training as a condition of accreditation, primary care residents often lack training to counsel or provide IUDs. Research by Zigler et al. showed that provider

comfort and familiarity with LARC strongly influence whether patients ultimately use these methods, emphasizing the importance of training during medical education.[20]

Low uptake among adolescents is also a focus of reviewed studies. A 2020 American Academy of Pediatrics clinical report notes that despite LARC being safe, effective, and appropriate for adolescent use, uptake remains low among this population. The report urges that pediatricians promote uptake through accurate, patient-centered contraception counseling and that they understand barriers to use.[21] A 2018 committee opinion from the American College of Obstetricians and Gynecologists states that LARCs have higher continuation rates compared to short-acting contraceptives among adolescents who choose to use them, and that LARCs have low rates of complications.[22] The opinion also identifies persistent provider barriers, including limited training and misconceptions about adolescent eligibility for LARC. Both organizations emphasize the importance of patient-centered counseling that is non-coercive and presents LARC as one of many viable contraceptive methods.

Patient-Level Barriers

Patient-level barriers to LARC are often attributed in the literature to knowledge gaps and misconceptions about LARC. Studies consistently find that there is low knowledge about and awareness of LARC among adolescents, particularly among certain racial and ethnic groups.[23,24] A study by Hoopes et al. based on a survey of adolescents at a school-based health center found that knowledge of LARC varied widely, with White adolescents having greater awareness of these methods compared to non-White students.[25]

Hall et al. found that a survey of 1,982 college-age women showed misinformation and a lack of awareness of LARC were prevalent. Reasons for not wanting a LARC included not wanting a foreign object in the body, not knowing enough about LARC methods, and preference for a short-acting method of contraception.[26] Other studies note the impact of patient misconceptions regarding the safety of LARC and concerns about pain during LARC insertion, potential impacts on fertility, and potential side effects of LARC methods.[13,27] Confidentiality concerns also discourage some adolescents from seeking LARC, despite many states not requiring parental consent to receive contraceptives.[22]

Socioeconomic status, racial and ethnic disparities, and other social determinants of health also impact patients' ability to access LARC. A review by Henke et al. found an association between income status and perceived barriers to LARC use, noting that lower-income populations perceive more barriers to LARC access and hold more negative perceptions about their use.[11] A 2022 study by Nsiah et al. analyzing Medicaid claims from 17 states examined how county-level social determinants of health — as measured by the Centers for Disease Control and Prevention's Social Vulnerability Index — influence postpartum contraception. In the study, "most or moderately effective" contraception includes sterilization, LARC methods, and shorter-acting methods such as pills, injectables, patches, or rings. The study found that Asian and Hispanic women were far less likely than White women to receive timely access to postpartum contraception. At the community level, women in counties with high socioeconomic or household/disability vulnerability (i.e., high levels of factors that increase susceptibility to harm, such as poverty or households with

older or disabled people) were more likely to receive the most effective or moderately effective contraception, but less likely to receive LARC, compared to women in the least vulnerable counties. Conversely, women in counties with high minority status/language or housing/transportation vulnerability were less likely to receive the most effective or moderately effective contraception compared to those in the least vulnerable counties. However, women in counties with the highest housing/transportation vulnerability were more likely to receive immediate postpartum LARC, suggesting that transportation barriers may lead some women to choose immediate LARC insertion.[28]

Synthesis of Barriers

Although this review examines system-, provider-, and patient-level barriers to LARC separately, these barriers often interact with and reinforce one another. System-level issues including reimbursement practices, issues surrounding device stocking costs, and clinic-level protocols directly affect providers' abilities to offer LARC. These limitations also influence whether providers can confidently offer LARC to their patients and whether same-day insertion is possible, given that these constraints limit provider flexibility to offer timely and evidence-based contraceptive care. Provider barriers also influence how patients both perceive and access LARC methods. If providers lack the training or confidence to discuss LARC with their patients, patients are less likely to pursue LARC as their contraceptive method. If providers lack adequate training or time to engage in patient-centered contraceptive counseling, patient knowledge gaps and misconceptions about LARC may persist.

SUCCESSES AND FACILITATORS

System-Level Successes

Addressing reimbursement and financing issues related to the provision of LARC is identified in the literature as a facilitator of increased use. Kroelinger et al. note the most common facilitators of improved LARC reimbursement include expanded payment methodology options, provider training on coding and billing, removal of prior authorization requirements, coordination of providers and payers on policy changes, and the unbundling of LARC device and insertion costs from the global maternity fee.[9] Facilitators of LARC device acquisition and stocking include developing protocols for purchasing LARC, securing supplemental funding for device acquisition (e.g., federal or jurisdictional grants, foundation grants, donations), and using existing government programs such as Title X, block grants, and the Children's Health Insurance Program to purchase LARC devices.[9]

Access to same-day insertion of LARC is also recognized in the literature as a facilitator of increased uptake. An analysis by McColl et al. using Medicaid claims data found that the Delaware Contraceptive Access Now initiative was associated with a significant increase in same-day LARC placement, noting a 21 percentage point increase compared to control clinics in Maryland.[29] The initiative was a statewide program that included provider and staff training along with funding for on-site device stocking.

Policy and financing efforts further demonstrate that reduced cost barriers can increase LARC uptake. A 2014 study by Ricketts et al. analyzed the Colorado Family Planning Initiative (CFPI), which sought to increase LARC use among low-income women. With private funding from an anonymous foundation, CFPI allowed LARC to be provided at no cost through the state's Title X-funded family planning clinics. From 2009 to 2011, CFPI was associated with declines in fertility rates (a 29% decrease), abortion rates (a 34% decrease among 15-19-year-olds and a 18% decrease among 20-24-year-olds), and high-risk births (a 24% decrease).[30]

The St. Louis CHOICE Project, a large prospective cohort study designed to promote the use of LARC in the St. Louis, Mo., area, is a seminal initiative cited in LARC literature, demonstrating that when cost barriers are addressed and patient education is provided, LARC use increases. Secura et al. found that of approximately 1,400 teenage girls and women enrolled in the program, 72% chose a LARC for birth control purposes and 28% selected another birth control method.[31] Among the program participants enrolled during the period of 2008 to 2013, pregnancy rates were 34 per 1,000 teens, birth rates were 19.4 per 1,000 teens, and the abortion rate was 9.7 per 1,000 teens. All were significantly lower than national rates of pregnancy (158.5 per 1,000 teens), birth (94 per 1,000 teens), and abortion (41.5 per 1,000 teens) experienced by sexually active teens in 2008.

Provider-Level Successes

Targeted provider training and counseling interventions are shown in the literature to mitigate provider knowledge gaps and improve LARC access. A 2018 randomized controlled trial across 40 U.S. health centers found that a half-day training session for providers increased their knowledge about LARC, their confidence in its safety, and their ability to provide LARC counseling to patients. Additionally, the study found that providers at the health centers where the training was provided were 43% more likely to initiate a LARC method compared to those at control sites.[32]

Integrating comprehensive family planning education into residency training can also improve provider perceptions of LARC. Zigler et al. found that obstetrics and gynecology residents who participated in a program focused on family planning training, the Ryan Residency Training Program, were twice as likely to use LARC methods as their own form of contraception compared to residents in non-affiliated programs.[33]

The use of patient decision aids such as brochures, videos, and structured conversation guides have been shown to increase LARC uptake by helping patients better understand contraceptive options and supporting patient autonomy in contraceptive selection.[34, 35] George et. al found that when patient decision aids were added in five family planning clinics in the Southeast, all sites experienced a statistically significant increase in the utilization of LARC among their patients.[36]

Patient-Level Successes

The elimination of patient-related financial barriers is a key intervention to increase LARC uptake. The study of the St. Louis CHOICE Project noted above showed that once system-level barriers were removed, patients strongly favored LARC. Notably, the study also found

higher continuation and satisfaction rates among LARC users compared to participants using short-acting contraceptive methods.[32] A 2018 study by Roth et al. found that the introduction of a low-cost hormonal IUD in seven of Utah's Title X clinics was associated with an increase in LARC use.[36]

Strategies that focus on empowering patients with accessible, high-quality information about LARC have also been successful. As previously noted, George et al. found that patient-centered decision aids help to improve patient knowledge and support informed contraceptive choice.[36] Additionally, mobile health applications and other internet-based resources have emerged as promising tools for patient education. A randomized controlled trial evaluated a mobile application designed to provide information on 10 contraceptive methods, with an emphasis on LARC, and found that among 120 participants, uptake of LARC did not differ significantly between individuals counseled through the mobile application and those counseled by health educators.[37]

Prenatal counseling also represents a key intervention opportunity to increase patient LARC use and increase birth spacing. A 2018 study by Torre et al. assessed the impact of prenatal counseling on postpartum contraceptive selection among a group of high-risk pregnant women at up to 34 weeks gestation and found that prenatal counseling increased the intent to use LARC from 27% in the pre-counseling phase to 42% in the post-counseling phase.[38] Another study, by Kotha et al., analyzed LARC use among women receiving medication-assisted treatment for opioid use disorder and found that structured prenatal contraceptive counseling was associated with prenatal intent to use LARC, though actual receipt of LARC among women with opioid use disorder remained low in the postpartum period. Phaloprakarn et al. found that adding prenatal counseling to routine, early postnatal counseling among pregnant women with gestational diabetes was associated with a 90% increase in the uptake of highly effective contraceptive methods by six weeks postpartum.[39]

Synthesis of Successes/Facilitators

Efforts to improve LARC access are most effective when facilitators at the system, provider, and patient levels align. Policy changes that address reimbursement and device acquisition make it easier for clinics to stock LARC and offer same-day insertion. Additionally, provider training and counseling help patients become better informed and feel supported in weighing their contraceptive options. Finally, when tools such as patient decision aids and prenatal counseling are reinforced by other system- and provider-level improvements, patients who choose LARC can access it without unnecessary delays.

STATE INITIATIVES (GREY LITERATURE)

State Approaches to Financing LARC Initiatives

States have pursued a variety of pathways to increase access to contraception. One approach is to finance contraceptive services through state Medicaid programs for low-income women who meet eligibility criteria. The Title X Family Planning Program, a federal grant program established to provide family planning and preventive services, is another avenue for states to provide contraceptive access. Title X services are often administered by

states and may include contraceptive counseling and provision.[40] Title X helps clinics and providers deliver services at no cost to individuals with incomes at or below 100% of the federal poverty level, with sliding scale fees for individuals with incomes of 101% to 250% of the federal poverty level.[41] Other key populations served through Title X include the uninsured, individuals under age 18, and immigrants (although eligibility varies by state for this population). States have also used other federal funding mechanisms to increase contraceptive care access, including the Title V Maternal and Child Health Block Grants program and the Temporary Assistance for Needy Families program.[40] Within the grey literature, a consistent theme is the need to identify funding mechanisms for LARC acquisition, payment reform (including the unbundling of LARC from the global maternity payment), provider training, and outreach to targeted populations.

Outside of federal and state investment in LARC initiatives, public-private partnerships are also highlighted in the literature. Delaware's success with the Delaware Contraceptive Access Now initiative is one example of this type of funding model. During the initiative, state funds were used to purchase LARC devices, while philanthropic funds were used to provide training and technical assistance to clinics, with the aim of providing same-day access to contraceptive services.[40]

Immediate Postpartum Placement Efforts

Several states, including South Carolina, Illinois, and Louisiana, were early adopters of efforts to unbundle immediate postpartum placement of LARC from the global maternity payment in their Medicaid programs. This unbundling allows a provider to be reimbursed separately for both the LARC device and the insertion procedure, with evidence suggesting that this unbundling leads to higher uptake of LARC in the postpartum period. In 2012, South Carolina became the first state to implement this policy, and between fiscal year 2013 and fiscal year 2015 the state experienced a 110% increase in inpatient LARC utilization.[42] Under a law passed by the Arkansas General Assembly in 2023, Arkansas Medicaid began providing separate reimbursement for LARC placement in January 2024.[43] Like most of the at least 46 states that have unbundled LARC placement from the global maternity payment, Arkansas reimburses for both the device itself and the insertion procedure.

Outpatient Access Efforts

States have also sought to increase LARC utilization by increasing reimbursement rates in outpatient settings. In 2014, the Illinois Department of Healthcare and Family Services increased the reimbursement rate for insertion, removal, and reinsertion of IUDs and implants in outpatient settings.[42] This included a 20% increase of the reimbursement rate for implant insertion and a doubling of the rate for IUD insertions. Illinois also increased the dispensing add-on payment for providers that dispense highly effective contraceptives purchased through the 340B federal drug pricing program.

South Carolina has sought to address the cost of stocking LARC devices by implementing a payment policy that allows a physician to order a LARC device for a specific Medicaid beneficiary and have the device shipped to the physician's office by a specialty pharmacy. The device can be shipped overnight and is billed directly to Medicaid instead of the

ordering physician.[42] Texas has a similar effort, allowing Medicaid providers or those working with the state's women's health program to order LARC devices at no upfront cost. Additionally, Texas providers who obtain LARC through specialty pharmacies can return unused and unopened devices.[44] South Carolina has established a "return-credit" program to allow unused LARC devices to be sent back, with the cost of the device credited back to Medicaid.[42] Illinois has established payment mechanisms which allow federally qualified health centers and rural health clinics to be reimbursed for devices outside of their patient encounter rates.

Virginia launched the Contraception Access Initiative (CAI) as a pilot program in 2018, focusing on increasing hormonal LARC uptake among women in the state with incomes up to 250% of the federal poverty level.[45] The initiative was funded by the Temporary Assistance for Needy Families program with an annual budget of $4 million, and funds were limited to paying for LARC insertions, LARC removals, and contraceptive devices. Administrative costs were funded by the Virginia Health Department's federal Title V Maternal and Child Health Block Grant.[46] The initiative involved a variety of clinical settings, including seven federally qualified health centers, three private women's health clinics, four hospital systems, two free clinics, and two Planned Parenthood-affiliated clinics. The pilot program was extended for two more years in 2020 and was expanded to cover all methods of contraception approved by the U.S. Food and Drug Administration (FDA).

Results from the Virginia initiative were promising, with data collected by the state health department showing a significant increase in contraceptive visits across different public health regions in the state. From October 2018 to June 2023, CAI was associated with 23,683 contraceptive-related visits. Ninety-five percent of women served through the initiative were aged 15 to 44. While the program was available to women with incomes up to 250% of the federal poverty level, over 60% of women served were at or below 100% of the federal poverty level. Notably, contraceptive injection (Depo-Provera) was the most popular method selected, following by contraceptive implant (Nexplanon).[45]

Provider/Patient Education and Outreach Efforts

Provider and patient education efforts represent another area of focus for states seeking to increase LARC uptake. When Illinois increased the dispensing add-on payment for providers that dispense highly effective contraceptives, as noted above, it also required that patients on Medicaid receive education and counseling on all FDA-approved contraceptive methods.[44]

States have also utilized perinatal quality collaborative initiatives to increase the use of LARC. Tennessee created a separate reimbursement for LARC placement within its Medicaid program and simultaneously launched a statewide effort to support LARC uptake. The Tennessee Initiative for Perinatal Quality Care included provider and patient education efforts, contraceptive counseling, and dedicated "LARC champions" who worked with hospitals to increase LARC uptake. An evaluation of the Tennessee initiative found that within one year of its launch, more than 2,000 women in the state had received LARC.[47]

In California, the state Department of Health Care Services developed value-based payment measures for the state's Medicaid program, including incentive payments for providers meeting specific benchmarks. This effort included an incentive payment for postpartum birth control provided within 60 days of delivery.[48]

Current Arkansas Efforts

The University of Arkansas for Medical Sciences launched the Arkansas Immediate Postpartum Long-Acting Reversible Contraceptive (LARC) Initiative in 2024. The effort includes providing LARC training and support to administrators, clinical providers, and billing personnel at birthing hospitals across Arkansas. The aims of the initiative are to increase LARC placement in the immediate postpartum period and ensure reimbursement for providers. The initiative follows a pilot program which provided LARC to more than 700 women in Little Rock and Fort Smith.[49]

A complementary initiative supported by a private philanthropic grant awarded to the UAMS Institute for Community Health Innovation is providing contraceptive services and counseling to women in 14 mostly rural Arkansas counties: Ashley, Carroll, Little River, Lee, Madison, Miller, Ouachita, Phillips, Newton, Sebastian, Sevier, St. Francis, Union, and Washington. The services are provided via mobile health units working alongside community-based organizations. Through the program, UAMS is also providing training in LARC insertion to approximately 50 family medicine residents.[50]

Conclusion

Long-acting reversible contraception is one of the most effective means of reducing unintended pregnancies, but uptake remains uneven in the United States. The literature assessed in this review acknowledges barriers to LARC uptake at the health system, provider, and patient levels. However, the literature also highlights opportunities to increase LARC uptake, including initiatives that enhance provider reimbursement, efforts to improve provider education, and the use of patient-centered decision aids regarding contraceptive choices.

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