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Review article

Access Barriers to Long-Acting Reversible Contraceptives for Adolescents

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A B S T R A C T

The United States continues to have the highest adolescent birth rate of any industrialized country. Recently published guidelines by the American Academy of Pediatrics create a new consensus among professional organizations around the suitability of long-acting reversible contraceptives as first-line contraception for adolescents. Through a narrative review of U.S. studies published after 2000, this study seeks to summarize existing access barriers to long-acting reversible contraceptives for adolescents and highlight areas that warrant further intervention so that the recommendations of these professional organizations can be effectively integrated into clinical practice. Existing barriers include costs for institutions providing contraceptive care and for recipients; consent and confidentiality for adolescent patients; providers' attitudes, misconceptions and limited training; and patients' lack of awareness or misconceptions. Systemic policy interventions are required to address cost and confidentiality, such as the Affordable Care Act's mandate that contraceptive coverage be a part of essential health benefits for all insurance providers. Individual-level access barriers such as providers' misconceptions and gaps in technical training as well as patients' lack of awareness can be addressed directly by professional medical organizations, health care training programs, and other interventions.

IMPLICATIONS AND CONTRIBUTION

After the recent consensus by professional medical organizations around long-acting reversible contraceptives (LARC) as first-line contraception for adolescents, this review consolidates literature on existing access barriers to LARC for adolescents to foster thoughtful interventions that ensure this shift in guidelines leads to increased utilization of LARC.

Rates of unintended pregnancy in the United States are approximately twice that of many other developed countries, and adolescents are at particularly high risk [1,2]. In 2010, the teen pregnancy rate in the United States was 57.4 pregnancies per 1,000 teen girls [3]. Although this rate has sharply decreased from 1990 to 2010, the United States continues to have the highest adolescent birth rate out of any industrialized country [4], estimated as 26.5 births per 1,000 teens in 2013 [5]. In 2006, 82% of adolescent pregnancies were unintended, compared to 48% for women in general [6]. Meanwhile, adolescents are less likely to adhere to short-term contraceptives, such as oral contraceptive pills, than their adult counterparts [7].

Long-acting reversible contraceptives (LARC), specifically the intrauterine device (IUD) and the implant, are the most effective reversible contraceptive methods currently in existence. While much of contraceptive failure is attributed to lack of adherence by patients—for example, accidentally missing a daily dose of oral contraceptives—the efficacy of LARC is not user dependent. The one-time insertion is conducted by a trained medical provider and the methods last at least 3 years and do not require the users' actions to maintain [8]. Thus, the difference between perfect use and typical use of these contraceptive methods is

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virtually nonexistent and the chances of an unintended pregnancy are close to nil. This is reflected in the failure rates of LARC, which are less than 1% [9]. LARC, for adolescents, provide an ideal option for user-independent pregnancy prevention.

Within the medical community, guidelines have been rapidly shifting to support LARC as ideal for adolescents. In 2012, the American Congress of Obstetricians and Gynecologists (ACOG) recommended that LARC be used as first-line methods for nulliparous adolescents [10]. In October 2014, the American Academy of Pediatrics (AAP) published new guidelines that aligned with ACOG, synchronizing best clinical practices by obstetrician gynecologists and pediatricians, two of the specialties likely to provide reproductive care or counseling to adolescents [11]. Given the efficacy of LARC relative to other methods, the recommendations by the AAP and ACOG are undoubtedly steps in the right direction to support optimal sexual health and prevent pregnancy among adolescents in the United States.

However, utilization of LARC by adolescents is extremely low relative to short-acting methods [12]. Only 3% of adolescents ages 15–19 who had intercourse at least once used an IUD in 2011–2013 compared to 6.4% of the total population of women ages 15–44 [13,14]. Meanwhile, 2% of adolescents who had intercourse at least once reported using the implant compared with .8% of women ages 15–44. Although adolescents' use of the implant appears to be higher than that of the overall population of reproductive-aged women, their use of either implants or IUDs is far less prevalent than their use of shorter acting methods. Ninety-seven percent of adolescents who had intercourse at least once had used a condom and 54% had used the pill [14]. Updated, consistent guidelines should help to shift this trend in a positive direction, but numerous barriers impeding adolescents' access to IUDs and implants persist within the existing health care system. Through a narrative review of U.S studies published after 2000, this study seeks to summarize existing access barriers to LARC for adolescents to highlight areas that merit further attention and intervention from physicians so that the new consensus of AAP and ACOG recommendations can be effectively integrated into clinical practice.

Access Barriers to LARC for Adolescents

Multiple factors influence adolescents' access to resources for sexual health in the United States. Although federal laws afford some level of universality of access to LARC for this age group, research has documented barriers at both the institutional and the individual level of care provision, including but not limited to financial constraints, unclear or confusing legal frameworks around confidentiality for minors, providers' attitudes toward and misconceptions about LARC, and limited patient awareness of LARC.

Cost (insurance coverage and institutional burden)

IUDs and implants alike, while more cost-effective than other contraceptives in the long term, have significant upfront costs, which can be a barrier for patients whose insurance will not cover contraceptive expenses or for patients who are uninsured. The total bill for a patient to initiate LARC generally exceeds $1,000 [15]. Currently, almost all insurance plans cover prescription drugs (i.e., oral contraceptive pills), but only 28 states mandate insurance coverage of all Food and Drug Administration (FDA)-approved contraceptives, including IUDs and implants. Of the 28 states with contraceptive mandates, 17 require insurance coverage of related outpatient services. Although the Affordable Care Act (ACA) has guaranteed insurance coverage of FDA-approved contraceptives, including the IUD and implant, the act allows older plans to be grandfathered into the new health care system under their existing coverage plans. Eventually, many older plans will be forced to comply with the new mandates as cost sharing and benefit structures change, but this process will take several years, according to estimates by the U.S. Department of Health and Human Services [16]. In addition, recent legislation has also allowed for religious exemptions from the ACA for certain employer-based plans, which limits the potential number of women who will benefit from complete insurance coverage of contraceptives, including LARC.

Within the literature, several studies point to the cost of IUDs and implants as a significant concern for clinic administrators in providing contraceptive services to adolescents and young adults [17]. In one study, key informant interviews of clinic staff attributed uptake of long-term methods by adolescents to grant funding for IUDs and implant provision that provided these methods free of charge [18]. Meanwhile, interventions such as the Contraceptive CHOICE Project in Missouri (Project CHOICE), the Taking Charge intervention in school-based health centers in Seattle, and the Colorado Family Planning Initiative have demonstrated impressive increases in use of LARC when these methods are provided to patients free of charge, thus removing cost as a barrier to access [19–21]. In Project CHOICE, the elimination of the cost to patients, as well as effective counseling, resulted in 62% of adolescents aged 14–20 (69% of 14–17 year olds and 61% of 18–20 year olds) utilizing LARC, proving that cost as well as accurate clinical information are significant determinants of access to IUDs and implants [22].

Another constraint for clinic administrators was the institutional burden of LARC provision, which can incur additional costs for institutions and patients. A survey of family planning clinic directors found that providing IUDs and implants required increased time from physicians compared to other methods, including more extensive counseling, an insertion procedure and follow-up visits, which can be a constraint on LARC provision [18]. A 2008 study shows that maintaining the medical equipment required to insert IUDs also introduces an additional burden on clinical practices [23].

Consent and confidentiality

Consent and confidentiality for minors seeking sexual health resources are challenging ethical and legal issues. The opportunity for independent consent by minors is an essential component of effective contraceptive care, as is the opportunity for that care to be confidential if needed. Patient confidentiality from parents is a key determinant of utilization of contraceptive care for adolescents [17]; in a 2002 study of adolescents receiving care at a family planning clinic, only 1% would stop having vaginal sex but 59% would stop receiving all services at the clinic if parental notification of contraceptive care was mandatory [24]. Of note, a study of parental acceptability of contraceptive methods indicates that parents are most comfortable with oral contraceptives and least comfortable with IUDs. While on one hand, this points to the importance of increased parental awareness and education about LARC for teens, it also highlights

the importance of offering confidential LARC services to which minors can consent independently [25].

Federal regulations state that minors can seek contraceptive care from federal sources without parental consent, which affects care provision for the 2 million adolescents who receive care at Title X clinics each year as well as adolescents insured by Medicaid [26]. On the other hand, issues of consent for adolescents covered by private insurance are governed by state laws, which vary considerably. Twenty-one states explicitly stipulate that adolescents may seek family planning services without parental consent; 25 states allow it under certain circumstances and four states have no specific policy regarding this issue [27].

While adolescents may be able, independently, to consent to contraceptive care in many states, this does not necessarily guarantee confidentiality. Parents are generally considered the "personal representative" of their children when it comes to receipt of health information [28]. The Health Insurance Portability and Accountability Act of 1996, which is the primary federal law regulating the privacy of individuals' medical information, contains special provisions for minors protecting their confidentiality when they are able to independently consent to care. However, the Health Insurance Portability and Accountability Act privacy rule defers to "state or other applicable law," which may require or prohibit disclosure of information about minors' contraceptive care to parents [28,29]. In addition, the regulatory mechanisms governing confidentiality of information contained within electronic medical records of adolescents are still being developed [30], creating unique challenges for delivery of confidential contraceptive care. To protect themselves from liability, providers must familiarize themselves with the laws and recordkeeping practices that apply to their specific clinical practice.

Confidentiality is of particular concern with commercial insurance plans. Private insurers often send an explanation of benefits to the primary payer after receipt of services, which is typically the parent in the case of an adolescent patient [31]. One way for adolescents to avoid the problems with maintaining confidentiality with private insurance coverage is by paying for contraceptive methods out of pocket. However, this strategy is far less feasible for LARC, which have a high upfront cost, than for shorter acting methods. Publicly funded Title X clinics provide a way for adolescents to access LARC without using private insurance coverage, but these clinics may not be easily accessible to younger patients unable to drive and/or enrolled in school full time.

Providers' attitudes, medical concerns, and training

Much of the literature surrounding access barriers to LARC for adolescents focuses on medical care providers, who are arguably the most significant gatekeepers to LARC for adolescents. Their counseling influences teenagers' contraceptive decision-making more than media, friends, or other sources; in fact, young women who heard about IUDs from physicians were 2.7 times more likely to be interested in the method [32]. Another study of women ages 18–50 found that the odds of women choosing an IUD or implant were 18.5 times larger among women who had received effective counseling from their physician compared with women who had not [33].

Providers' attitudes toward use of LARC among adolescents, which guide their counseling and willingness to provide these methods to their adolescent patients, are shaped by their conceptions about the medical safety of IUDs, their beliefs about adolescent decision-making around LARC, and their degree of training and comfort with LARC. Physicians' opinions about use of LARC among adolescents vary widely by specialty. Studies of pediatricians' attitudes have examined counseling practices related to both IUDs and implants. A study of 167 pediatricians practicing in Massachusetts showed that they conducted contraceptive counseling at only 48% of adolescent well-patient visits. Only 11% of these pediatricians recommended IUDs and 9% recommended implants as the top five contraceptive options for their adolescent patients, and no pediatrician reported placing IUDs in their practice [34]. Another study of 120 pediatricians in Chicago showed that 22% thought IUDs were appropriate and 26% thought implants were appropriate for their patients. Only five physicians had actually prescribed IUDs to their patients; eight had prescribed implants [35]. Meanwhile, other studies of providers' practices and attitudes have focused on IUDs specifically. A survey of 816 health care providers, including 399 physicians from a wide array of specialties such as pediatrics, obstetrics and gynecology (OB), internal medicine (IM), and family medicine (FM), found that fewer than half of physicians overall felt that nulliparous women or teenagers were appropriate candidates for IUDs [23]. A separate study examining contraceptive provision practices by obstetrician-gynecologists specifically found that 66.8% would consider IUDs appropriate for nulliparous women and 43.0% would consider IUDs appropriate for adolescents [36]. A national survey comparing contraception provision practices by specialty found that 52% of obstetrician-gynecologists and 30% of FM practitioners would provide IUDs to adolescent patients, whereas 71% of obstetrician-gynecologists and 43% of FM practitioners would provide them to nulliparous patients [37].

Misconceptions about IUD safety for nulliparous women or adolescents are rampant in the medical community. A study of 635 office-based and 1,323 Title X clinic–based health care providers between 2009 and 2010, 14.7% of obstetrician-gynecologists, 36.7% of FM physicians, and 24.7% of adolescent medicine physicians believed copper IUDs were unsafe for nulliparous women [38]. The proportions of physicians who believed that levonorgestrel IUDs were appropriate for nulliparous women were slightly higher (15.7% of obstetrician-gynecologists, 44.2% of FM physicians, and 31.6% of adolescent medicine physicians), leading to a lower rate of reluctance to provide this method (67% of physicians overall). Of a cohort of 120 pediatricians in Chicago, 29% were concerned about future infertility with IUDs, and 11% were concerned about the potential for infertility when prescribing implants [35].

Many of physicians' misconceptions about safety derive from beliefs about an older IUD, the Dalkon Shield, and from historical research on the risk of ectopic pregnancy associated with IUDs. The Dalkon Shield increased the risk of pelvic inflammatory disease (PID) and infertility because of its multifilament string and overall design. But the incidence of PID among users of IUDs currently on the market is equivalent to that of the general population after the first 3 weeks post insertion [39]. Historically, IUDs were also thought to cause increased risk of ectopic pregnancy, but this theory was debunked by further research in the 1980s [23,40]. Current IUDs are not tied to increased risk of PID or ectopic pregnancy [41].

In addition to medical concerns, providers' beliefs about adolescents' decision-making also affect their attitudes toward counseling patients. Studies have shown that physicians believe

that adolescents are more likely to become impatient with side effects and discontinue LARC [18]. However, research has indicated that adolescents are no more likely to discontinue LARC than their adult counterparts and that continuation rates for adolescents are higher with LARC than with short-term contraceptive methods [8,18,39,41].

Finally, physicians' lack of training and limited comfort with contraceptive methods can also promote underutilization of LARC. A study of 430 physicians across the United States trained in pediatrics, IM, FM, and OB found that 88% of FM/OB physicians reported providing either IUDs or implants to their patients compared to only 26% of pediatrics/IM physicians, a difference which was attributed to FM/OB physicians' exposure to procedural women's health training during their education [42]. For implants, 47% of FM/OB physicians provided this form of LARC compared with only 24% of the pediatrics/IM physicians. For IUDs, there was an even larger difference between the two groups of specialties. Multiple commentary and review articles discuss the lack of adequate training within residency programs as a driving factor limiting provision of LARC by physicians who have not specialized in OB such as pediatricians or FM practitioners [42–44]. A survey of 167 pediatricians in Massachusetts asking about barriers to IUD counseling found that 73% of respondents thought lack of training was a barrier and 40% cited limited experience [34]. In a survey of 120 pediatricians in Chicago, half of those who had never prescribed contraceptives to patients attributed that gap in care to lack of personal knowledge about contraceptives. Although no pediatrician in this survey inserted IUDs as part of their clinical practice, 12% were interested in receiving training to do so [35].

Patients' awareness of and beliefs about LARC

Multiple studies have shown that awareness of LARC among adolescents is low [45]. A study of 106 adolescents ages 14–19 found that only 21.1% of adolescents were aware of IUDs as a contraceptive method, whereas 76.4% were sexually active [46]. In 2006, a study of 190 women ages 14–25 years showed that only 50% had heard of IUDs [47]. Only 20% of those women had heard of both kinds of IUDs; 58% were unsure of the method's efficacy, and 71% were unsure as to the methods' safety. Another study of 252 women ages 14–27 years found that only 45% were aware of IUDs [32]. A study of women ages 10–24 found that only 41.1% of study participants had ever heard of the implant, and only 47% of those women believed it was an appropriate method for nulliparous women [48]. Limited awareness of LARC affects patients' ability to advocate for their own access to these contraceptive options outside specific counseling by their physicians.

Awareness of LARC appeared to differ by age in older studies; however, this pattern may be changing with time. In 2008, a study of women ages 14–24 years found that 19% of 14–18 year olds were aware of the IUD, compared to 60% of 19–24 year olds [49]. Meanwhile, a study from 2015 showed there were no significant difference in awareness or knowledge about the method between women ages 10–19 and women ages 20–24, although overall awareness was still less than 50% among both groups [48]. This indicates that awareness about LARC may be increasing among younger adolescents relative to their older counterparts.

Adolescent patients' pre-existing misconceptions about LARC can also affect their contraceptive decision-making. Patients are concerned about the duration of both the IUD and the implant, calling them "too serious," and mentioning the pain associated with insertion and the perceived disadvantage of having a foreign object inside of one's body, along with the associated worry that others could see or feel these devices [18]. Several studies have also revealed patients' beliefs that the IUD specifically is inappropriate for nulliparous young women, citing media portrayals as a contributing factor to their opinion [18,50]. In one investigation, one quarter of patients believed that their young age deemed them ineligible for IUDs. To address these concerns, careful counseling about the reversibility and safety of this method for teens and details about its mechanisms of action and insertion are essential to educating patients about the suitability of LARC for delaying initial childbirth rather than solely for older multiparous women [18,50]. Another study has shown that younger adolescents may prefer the implant to the IUD, though the motivations driving their choice were not elucidated; when LARC was provided free of charge to adolescents, 63% of teenagers aged 14–17 chose the implant over the IUD compared to only 29% of the 18–20 year olds [22].

Discussion

The new guidelines released by the AAP bring contraceptive recommendations for adolescents to a national consensus, but much work needs to be done to ensure that these recommendations are effectively executed across the country. Many barriers associated with access to LARC by adolescents—cost and insurance coverage, consent, and confidentiality—are tied to legal and social frameworks outside the domain of physicians' clinical practices. But an equal number—physician awareness, comfort, and training as well as patient education—can be addressed within professional medical communities. With growing momentum building behind the effectiveness of LARC as a first-line contraceptive for adolescents, there is no better time to address these barriers within our professional communities. By starting with an overarching understanding of the underlying access barriers to LARC for adolescents and strategizing to accomplish the most feasible goals first, health care providers, professional medical organizations, health care institutions, and governmental agencies should collaborate to expand access to LARC for adolescents in the most effective, efficient manner possible.

Although outside the domain of physicians' clinical practice, advocacy should be the primary strategy for expanding adolescents' access to LARC. Rapid implementation of the new ACA mandate requiring cost coverage of all FDA-approved contraceptives by private insurers is an essential part of supporting adolescents seeking to use LARC. Encouraging institutions and insurers to consider and design creative solutions to better address issues of confidentiality within reimbursement systems and electronic medical records will also serve to further reduce barriers to accessing LARC for adolescents. Although the process of creating and adopting system-wide solutions may be slow and outside many health care providers' control, physicians and other professionals working with adolescents can immediately familiarize themselves with Title X centers near their geographic area of practice, as these centers can guarantee confidentiality of contraceptive care for adolescents under federal law.

The access barriers to LARC for adolescents that are directly within the domain of physicians' clinical practices include physicians' attitudes, misconceptions, and lack of comfort with LARC. Education of physicians on counseling about and insertion of

LARC will be an essential component of expanding adolescents' access. The recently updated AAP guidelines call for further training and education of physicians, stating "pediatricians should be familiar with counseling, insertion, and/or referral for LARCs" [11]. For physicians already in the workforce, extensive outreach will be required to increase their comfort in counseling about and insertion of these devices for their patients. Workshops hosted by professional conferences or run by independent organizations are a helpful vehicle to disseminate information and technical training to these physicians. Meanwhile, the biggest systemic impact related to physician education can and should occur at the level of residency training programs. Contraception is an essential part of primary care for both adult and adolescent women. Thus, training on counseling about and insertion of LARC should be a part of the core curriculum for residency programs in pediatrics, IM, FM, and OB.

Patient and family education is also a significant concern that can be addressed by physicians. Luckily, the training and education of adolescents' primary care physicians about contraceptive methods and specifically LARC should have a trickle-down effect on adolescent awareness, as research has shown that adolescents are significantly influenced by their providers' opinions of contraceptive methods. Meanwhile, direct outreach from professional organizations such as the AAP, ACOG, and the American Academy of Family Physicians (AAFP) in the form of printed educational materials or media campaigns may also be considered. Public endorsement of these methods for all adolescents by reputable figures in television, radio, or other easily accessible forums may be important for increasing support from parents and communities for provision of LARC to adolescents. Finally, physician advocacy to augment the education about LARC available within school-based sexual education programs in communities that do not have abstinence-based education mandates could also help to expand adolescents' awareness of and desire to use LARC.

Of note, in some primary care offices, it may be easier to expand access to the implant rather than the IUD. The equipment and clinical skills required to provide implants to patients are more attainable than those required for IUDs. As previously mentioned in this review, it seems that some patients and physicians are more comfortable with implants in clinical practice. A study providing free LARC to adolescents showed that younger teenagers aged 14–17 preferred implants over IUDs [22]. The preference of younger adolescents for the implant is mirrored by beliefs of current family planning providers, who, as a group, believe IUDs pose more clinical and logistical challenges than implants do for younger patients [18].

Summary and Implications

The United States continues to have the highest adolescent birth rate out of any industrialized country. The new AAP guidelines mark a landmark shift in the professional ethos around contraceptive care for adolescents in the United States. However, a significant number of access barriers to LARC persist for adolescents such as logistical barriers involved in provision; physicians' attitudes, misconceptions, and training; and patients' awareness and acceptance of these methods. Confidentiality can be addressed through policy and education of health providers and systemic changes in health care recordkeeping. The ACA contraceptive mandate has made great strides in breaking down the cost barrier, but some pockets of lack of coverage remain. Meanwhile, systematic, coordinated efforts by health care institutions, professional organizations, and governmental agencies are essential steps to address the remaining barriers to access of LARC for adolescents and allow for effective implementation of the new consensus of ACOG, AAFP, and AAP guidelines around LARC as first-line contraceptive methods for adolescents.

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