



Long-Acting Reversible Contraception: Specific Issues for Adolescents

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Long-acting reversible contraceptives are the most effective methods to prevent pregnancy and also offer noncontraceptive benefits such as reducing menstrual blood flow and dysmenorrhea. The safety and efficacy of long-acting reversible contraception are well established for adolescents, but the rate of use remains low for this population. The pediatrician can play a key role in increasing access to long-acting reversible contraception for adolescents by providing accurate patient-centered contraception counseling and by understanding and addressing the barriers to use.

INTRODUCTION

The safety, efficacy, and long-term cost-benefit factors of long-acting reversible contraception (LARC) use in the adolescent population have been well established.^{1–4} The noncontraceptive benefits, especially treatment of heavy uterine bleeding and dysmenorrhea, are also well accepted.^{5–7} Available LARC methods include 1 progestin subdermal implant and 5 intrauterine devices (IUDs) and are all appropriate for use in the adolescent population.⁴ The progestin subdermal implant works by suppressing ovulation, whereas the copper intrauterine device (Cu-IUD) and the progestin-releasing levonorgestrel intrauterine devices (LNG-IUDs) prevent fertilization.² LARC methods are the most effective forms of contraception, with less than 1% of users becoming pregnant during the first year of use.³ The availability of effective contraception has been associated with declines in unplanned pregnancy, yet rates of LARC use among sexually active adolescents remain low at 2% to 3%.^{8–10} Limitations in patient knowledge, availability of trained providers, and concerns over cost and confidentiality have been recognized as barriers contributing to the relatively low rate of use.^{11–18} The American Academy of Pediatrics (AAP) previously published a policy statement and technical report on contraception for adolescents summarizing the full range of available methods.¹ This clinical report serves to improve the pediatrician's comfort level when providing LARC services and highlights specific adolescent populations that may especially benefit from the

abstract

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noncontraceptive medical therapy provided by LARC methods.

LARC AWARENESS AND ACCEPTABILITY

A wealth of easily accessible online resources including evidence-based guidelines from the Centers for Disease Control and Prevention (CDC), US Medical Eligibility Criteria for Contraceptive Use (US MEC), and statements from the AAP, American College of Obstetricians and Gynecologists (ACOG), and Society for Adolescent Health and Medicine, all endorse the safety of LARC methods in the adolescent population.^{1,3,4,19} This information has not effectively reached the adolescent population, with only 20% to 50% of this age group able to recognize LARCs as birth control methods.^{12–15} Among adolescents aware of LARC methods, unsubstantiated safety concerns related to permanent loss of fertility, misconceptions about the insertion process, and general fears of pain and of having a foreign object in the body contribute heavily to the low use of these methods.^{11,12,14,15} Counseling from a health care provider has been found to effectively improve knowledge in the adolescent population and can significantly impact LARC use.^{13,15,17} Many pediatricians working with adolescents approach contraceptive counseling with the predetermination that this population is neither interested in LARC nor will they tolerate the irregular bleeding pattern that can be associated with these methods.^{13,18} Data have suggested otherwise, as results from the 2011 Contraceptive CHOICE Project reported that 70% of the adolescents surveyed chose LARC when cost was removed as a barrier and accurate counseling was provided.²⁰ In this study, the authors also found continuation rates of LARC to be higher than those of other contraceptive methods at 12 and 24 months of use among adolescents

and young adults, suggesting relatively high acceptability.^{20–22}

LARC SAFETY

The US MEC provides an evidence-based summary assigning a level of safety to each contraceptive method when used in women with various medical conditions (Table 1). The CDC classifies the contraceptive subdermal implant as category 1 regardless of age group or parity status.⁴ Although safe, IUD use in younger and nulliparous women still requires more caution (category 2) than does use in their adult counterparts (category 1) because of concerns related to higher expulsion risk and sexually transmitted infection (STI) rates.⁴ Newer, well-conducted studies have refuted previous concerns associating IUD use and infertility.⁴ A few absolute contraindications to LARC use have been defined but are uncommonly encountered in the adolescent population (Table 2). All LARC methods may be safely used at any point in the postpartum period, although IUD expulsion rates vary depending on the timing of placement relative to delivery.^{2,4,23} Observational studies suggest that LARC does not interfere with lactation, although long-term data used to evaluate the effects on lactation are limited.^{2,23} Given the dearth of evidence, ACOG recommends patients be counseled that hormonal LARC products may theoretically affect breastfeeding, acknowledging there is a lack of supporting data.² The Cu-IUD, LNG-

IUD, and subdermal implant are all safe for immediate placement in a woman who is breastfeeding, with the Cu-IUD classified as a US MEC category 1 and the latter 2 classified as US MEC category 2.^{4,23} There are free resources and tools available online from the CDC and other professional societies to assist in counseling adolescents on the safety of LARC use (Table 3).²⁴

Adolescents with chronic medical conditions have a particular need for in-depth contraception counseling. The importance of providing safe and effective contraception to those with medical comorbidities associated with higher morbidity and mortality rates during pregnancy cannot be overstated. In a 2010 survey of 536 women with congenital heart disease, researchers found that 20% of participants were using a contraindicated contraceptive method and 28% of participants were not using any form of contraception despite stating pregnancy was not desired.²⁵ Although data used to guide contraceptive options are limited for adolescents with significant congenital heart defects, the safety of LARC use has been established in those with cardiomyopathy as well as for those at increased risk for a venous thromboembolic event (either from a known thrombophilia or underlying medical condition).⁴ In a study of 30 adolescents with significant cardiovascular dysfunction, the authors found no complications related to LARC use.²⁶ Drug interactions are also an important

TABLE 1 Medical Eligibility Criteria

Category	Description
1	A condition for which there is no restriction for the use of the contraceptive method
2	A condition for which the advantages of using the method generally outweigh the theoretical or proven risks
3	A condition for which the theoretical or proven risk usually outweighs the advantages of using the method
4	A condition that represents an unacceptable health risk if the contraceptive method is used

Adapted from Curtis KM, Tepper NK, Jatlaoui TC, et al. U.S. medical eligibility criteria for contraceptive use, 2016. *MMWR Recomm Rep*. 2016;65(3):3.

TABLE 2 Conditions Presenting an Absolute Contraindication to LARC Use

	LNG-IUD	Cu-IUD	Subdermal Implant
Distorted uterine cavity	Placement and continuation contraindicated	Placement and continuation contraindicated	Not contraindicated
Current breast cancer	Placement and continuation contraindicated	Not contraindicated	Placement and continuation contraindicated
Untreated cervix cancer	Placement only contraindicated	Placement only contraindicated	Not contraindicated
Endometrial cancer	Placement only contraindicated	Placement only contraindicated	Not contraindicated
Malignant gestational trophoblastic neoplasia with intrauterine disease	Placement only contraindicated	Placement only contraindicated	Not contraindicated
Unexplained vaginal bleeding before evaluation	Placement only contraindicated	Placement only contraindicated	Not contraindicated
Active pelvic infection (pelvic inflammatory disease, current purulent cervicitis, pelvic tuberculosis, or active gonorrhea and/or <i>Chlamydia</i> infection)	Placement only contraindicated	Placement only contraindicated	Not contraindicated
Immediate postseptic abortion, puerperal sepsis	Placement and continuation contraindicated	Placement and continuation contraindicated	Not contraindicated

Adapted from Curtis KM, Tepper NK, Jatlaoui TC, et al. U.S. medical eligibility criteria for contraceptive use, 2016. *MMWR Recomm Rep*. 2016;65(3):5

consideration when providing contraception counseling to adolescents with complex medical conditions. Again, the US MEC provides guidance with virtually no significant drug interaction concerns associated with IUD use.⁴

Safety concerns related to the relationship between the relatively high prevalence of STIs, IUD use, and upper genital tract infection (pelvic inflammatory disease) have historically limited use of this method in adolescents. With new data reflected in the CDC recommendations, researchers have found that the IUD is not significantly associated with upper genital tract infection.⁴ Therefore, screening tests for STIs are not required before placement of an IUD in a woman without risk factors.^{4,27} Testing for STIs can be performed at the time of placement for adolescents requiring

screening.⁴ Delaying IUD placement is only recommended if purulent cervicitis is noted on examination or if a known gonorrhea or *Chlamydia* infection has not been treated (US MEC category 4).⁴ If an STI is diagnosed after placement, the IUD may be left in place while initiating antibiotic treatment.⁴

The relationship between LARC and condom use has also generated interest. Using data from the Youth Risk Behavior Surveillance System, researchers found that condom use was significantly lower in adolescents using a LARC method (16.4%) compared with those using combination oral contraceptive pills (37.3%).²⁸ Theories as to why condom use may differ when using LARC include adolescents feeling more secure about the efficacy of these methods and pediatricians not routinely recommending condom use

to adolescents using LARC.²⁸ Condom use is a complex behavior that changes over time in a relationship. The use of a particular contraceptive method is only one factor that may influence current condom use. Regardless of the reason, it is important to note the trend of reduced condom use among LARC users when providing contraception counseling to adolescents.

TIMING OF LARC PLACEMENT

Offering same-day LARC placement to adolescents has been shown to increase the use of these contraceptives.^{2,29} Despite this benefit, it is common practice to have multiple unnecessary visits for counseling and testing before LARC placement.^{29–31} The 2 major considerations determining if LARC placement can be performed safely are pregnancy and infection. As mentioned previously, delaying IUD placement is recommended if there is an active, untreated infection.⁴ It is also recommended that LARC placement be delayed if pregnancy cannot be excluded with reasonable certainty (Table 4).⁴ Urine pregnancy tests have been shown to detect

TABLE 3 Resources for Determining LARC Safety

http://www.acog.org/About-ACOG/ACOG-Departments/Long-Acting-Reversible-Contraception
http://fpntc.org
http://astho.org
http://larcprogram.ucsf.edu
https://www.cdc.gov/reproductivehealth/contraception/mmwr/mec/summary.html
https://guttmacher.org/united-states/contraception

TABLE 4 How To Be Reasonably Certain That a Woman Is Not Pregnant

A Health Care Provider Can Be Reasonably Certain That a Woman Is Not Pregnant If She Has No Symptoms or Signs of Pregnancy and Meets Any 1 of the Following Criteria
Is ≤ 7 d after the start of normal menses
Has not had sexual intercourse since the start of the last normal menses
Has been correctly and consistently using a reliable method of contraception
Is ≤ 7 d after spontaneous or induced abortion
Is within 4 wk postpartum
Is fully or nearly fully breastfeeding (exclusively breastfeeding or the vast majority [$\geq 85\%$] of feeds are breastfeeds), amenorrheic, and <6 mo postpartum

Centers for Disease Control and Prevention. How to be reasonably certain that a woman is not pregnant. When to start using specific contraceptive methods. Available at: https://www.cdc.gov/reproductivehealth/contraception/pdf/When-To-Start_508Tagged.pdf. Accessed September 24, 2019.

100% of pregnancies when performed 11 days after expected menses.²⁴ Determining the date of the last menstrual period is important for pregnancy evaluation and to guide whether back-up contraception is needed after LARC placement (Table 5). A short-term contraception method can also be used before LARC placement if pregnancy cannot be reliably ruled out. This is particularly important when an adolescent selects an IUD. In the case of the subdermal implant, same-day placement is possible even when pregnancy cannot be excluded because the benefits of starting the subdermal implant likely exceed any risk. In this case, the chance of pregnancy and need for pregnancy testing in the next few weeks are important points to discuss.³² Regardless of the timing of LARC placement, review of the patient's medical history is fundamental to selecting the appropriate and safe contraception method. Similarly, providing expedited LARC services does not

preclude the importance of discussing healthy relationships, providing education and screening for intimate partner violence, and facilitating use of resources if a coercive sexual relationship or sex trafficking activity is suspected.

NONCONTRACEPTIVE USES OF LARC

Using contraception to treat menstrual cycle concerns is well established in clinical practice. An estimated 82% of adolescents use the combination oral contraceptive pill for noncontraceptive reasons.⁵ The LNG-IUD is particularly important in the treatment of heavy menstrual bleeding.^{5,7} Studies involving adolescents have revealed promising results but are limited by small size.^{5,33} In studies that are focused on adult women, researchers have found a reduction in menstrual blood loss of up to 80% using the LNG-IUD.^{5,33}

Adolescents with physical and/or cognitive disabilities and their

primary caregivers often seek options to reduce menstrual blood flow.³⁴ Policies surrounding consent and confidentiality often require review when working with this population of adolescents. Although confidential contraception counseling is often not feasible in this special population, including the adolescent in the discussion when possible is important. Medical therapy has greatly replaced surgical options to treat menstrual concerns in this population because of ethical questions related to consent as well as significantly higher morbidity and mortality risks compared to those of the general population.^{34,35} Depot medroxyprogesterone acetate is a commonly used therapy for menstrual suppression in adolescents with physical and/or cognitive disabilities. However, concerns surrounding weight gain and bone mineral density loss have likely contributed to the increased use of the LNG-IUD in this population.^{6,36,37} Data regarding LNG-IUD use among young women with physical and/or cognitive disabilities are growing and are overall positive. Authors of a 2013 cohort study reported that 26 adolescents with disabilities (95% with cognitive impairment and 5% with physical impairment) undergoing LNG-IUD placement had an amenorrhea rate of 100% after 1 year of use.³⁸ The acceptability of LNG-IUD use in this population is also supported by limited data as authors of another study involving 56 adolescents with developmental disability reported a premature IUD removal rate of 7.4% secondary to pain and irregular bleeding comparable to adults.³⁷

Adolescents with severe anemia attributable to heavy menstrual bleeding often require hormone therapy to limit menstrual blood loss. Although options have been traditionally focused on combination oral contraceptives and depot medroxyprogesterone acetate, the

TABLE 5 Back-up Contraception After LARC Placement

Type of LARC and Timing of Placement	Need for Contraception Backup for 7 d After LARC Placement
LNG-IUD inserted after 7 d of the start of menses	Yes
LNG-IUD inserted within 7 d of the start of menses	No
Subdermal implant inserted after 5 d of the start of menses	Yes
Subdermal implant inserted within 5 d of the start of menses	No
Cu-IUD insertion (anytime)	No

Adapted from Centers for Disease Control and Prevention. Appendix B: When to Start Using Specific Contraceptive Methods. Available at: <https://www.cdc.gov/reproductivehealth/contraception/mmwr/spr/appendixb.html>. Accessed September 24, 2019.

efficacy of using the LNG-IUD to treat heavy menstrual bleeding has been recognized.³ Acceptance of this method is growing, with the National Hemophilia Foundation now recognizing this as a treatment option.³⁹ In a small study of adolescent girls with known bleeding disorders, the authors found that 100% experienced an improvement in heavy menstrual bleeding and 60% experienced amenorrhea after LNG-IUD placement.³³ These findings are consistent with studies conducted in the adult population with reported LNG-IUD associated bleeding pattern satisfaction rates ranging from 68% to 100%.^{40–43} The role of the subdermal implant as a treatment option for adolescents with bleeding disorders is unclear given the higher rate of prolonged irregular bleeding and lower rate of amenorrhea as compared to the LNG-IUD. No studies investigating the efficacy of using the subdermal implant in this population have been reported.

Dysmenorrhea is the most common gynecologic complaint during adolescence and is associated with a relatively high rate (12%) of monthly school absenteeism.⁴⁴ Dysmenorrhea is classified as primary or secondary; the latter is associated with a wide range of anatomic abnormalities. Treatment of dysmenorrhea in the adolescent population is primarily medical, with either nonsteroidal antiinflammatory drugs (NSAIDs) or hormonal contraceptive methods as initial agents.^{44,45} The LNG-IUD and the subdermal implant have been shown to provide effective treatment.^{44,45} Evaluation for causes requiring surgical treatment such as obstructive Müllerian anomalies or ovarian cysts is warranted if medical management is suboptimal, risk factors for congenital anomalies are present, or pain is acyclic.⁴⁴ Even in cases of secondary dysmenorrhea attributable to endometriosis, fibroids, or adenomyosis, the LNG-

IUD and subdermal implant have been found to be effective treatment options.^{44–46}

UNDERSTANDING LARC SIDE EFFECTS

Regardless of the reason for use, pediatricians report discomfort counseling adolescents on expected side effects and answering the multitude of questions surrounding LARC.¹⁹ This discomfort improves after attending formal LARC training sessions.¹⁸ Reviews of US Food and Drug Administration package insert information for the LNG-IUDs reveal that the absolute risk for an adverse event is low: ectopic pregnancy (1 in 1000), upper genital tract infection (0.5%–0.6%), uterine perforation (up to 0.1%), expulsion (3.5%–4.5%), and symptomatic ovarian cysts (3.5%). A large study including 4592 adolescents between 15 and 19 years of age found irregular bleeding to be the only significant side effect of LARC use.⁴⁷ Of note, there was no association with weight gain or mood changes.⁴⁷ Counseling about potential changes in bleeding patterns has been associated with higher LARC continuation when done prior to insertion.⁴⁸ Unscheduled spotting or light bleeding is expected during the first 3 to 6 months of LNG-IUD use and is common with subdermal implant use; this bleeding is not harmful and decreases over time.⁴⁹ Review of LARC package information provides detailed information related to expected bleeding patterns. A total of 35% of LNG-IUD (Mirena) users report 4 or more bleeding episodes or 1 episode lasting more than 10 days within the first 3 months of use. These patterns persist in only 4% of users after 1 year of use. Approximately 50% of women using the Mirena IUD report amenorrhea after 2 years of use. Amenorrhea rates after 2 years of Liletta use, another LNG-IUD with similar dosing as Mirena, is reported to be 26%. Review of packaging information for the lower-dose LNG-IUDs (Kyleena

and Skyla) report prolonged or irregular bleeding patterns in 14% to 20% of users at the 90-day mark; this pattern persists in 6% to 18% of users by 1 year of use. Early discontinuation rates for unacceptable bleeding associated with the LNG-IUDs ranges from approximately 1.5% to 5%. Unlike the LNG-IUDs, heavier bleeding may persist after Cu-IUD placement. A discontinuation rate of approximately 12% is reported to be attributable to bleeding or pain concerns. Among subdermal implant users, 17.7% report prolonged bleeding and 6.7% report frequent bleeding, but 75% of women using the implant report fewer days of bleeding and spotting compared to their bleeding pattern before placement.

Bothersome irregular bleeding associated with LARC can be effectively treated with a short course of NSAIDs or oral hormonal therapy.^{24,49,50} Smaller studies suggest that tranexamic acid is associated with reduced blood loss after placement of either the Cu-IUDs or LNG-IUDs.⁵⁰ Because of its ability to suppress metalloprotease activity, doxycycline may also be an effective option for irregular bleeding treatment.⁵⁰ Using this method to treat unscheduled bleeding has been associated with lower LARC discontinuation rates.⁵⁰ The CDC Selective Practice Recommendations for Contraceptive Use provides guidance to providers managing irregular bleeding associated with LARC (Fig 1).³ It is important to consider that persistent bleeding may be attributable to pregnancy, infection, IUD displacement, or new pelvic organ pathology in LARC users.

INCREASING THE NUMBER OF TRAINED PROVIDERS

Although LARC placement is increasing in pediatric primary care clinics, adolescent medicine clinics, and school-based clinics, the lack of trained pediatricians is still a major

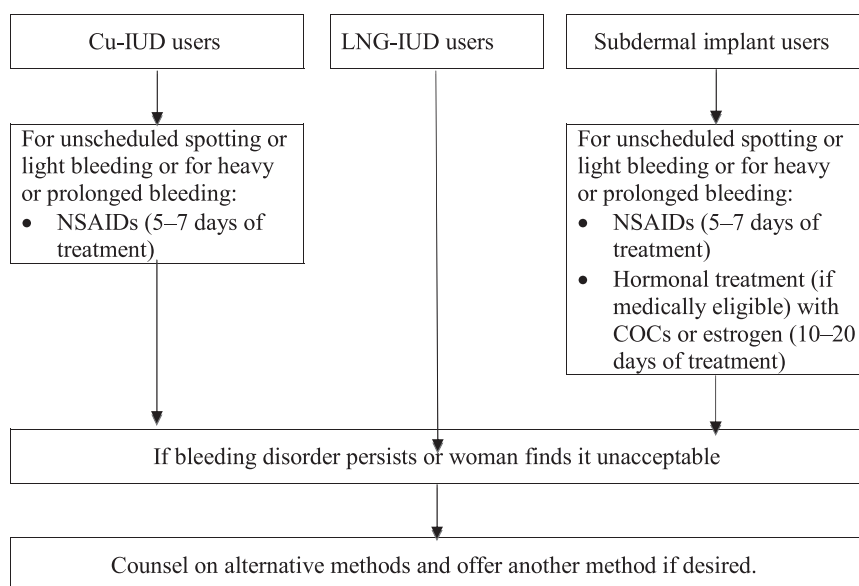


FIGURE 1

Management of women with bleeding irregularities while using LARC. COC, combined oral contraceptive. Adapted from Centers for Disease Control and Prevention. CDC contraceptive guidance for health care providers. US selected practice recommendations for contraceptive use, 2016: implants. Available at: <https://www.cdc.gov/reproductivehealth/contraception/mmwr/spr/implants.html>. Accessed September 24, 2019.

barrier to LARC availability within the adolescent population.^{17,18,51}

Physicians not trained in LARC placement have concerns that IUD placement may cause emotional or physical trauma to the adolescent.^{18,52} These concerns significantly wane after training and successful placement of these devices.¹⁸ The first attempt of IUD placement in nulliparous adolescents reveals success rates (96%) similar to their parous counterparts.⁵³ Similarly, the duration of the IUD placement procedure does not vary between adolescents and adults.⁵⁴ Methods used to improve pain and ease of insertion have been investigated and include preprocedure administration of misoprostol, NSAIDs, paracervical block by using lidocaine, and anxiolytic medication including nitrous oxide.^{55–57} Although a few studies have found some benefit in pain reduction associated with paracervical block with lidocaine use, general review of current data do not support the routine use of these strategies during IUD placement.^{24,55,57,58} In special

circumstances, IUD placement under sedation is appropriate, most commonly in adolescents with physical limitations or cognitive challenges, and can be combined with other procedures requiring sedation, such as dental care.

Placement and removal of the subdermal implant requires a free in-person training session sponsored by the manufacturer of the product.⁵⁹ Frequency of these training sessions varies geographically, and for some clinicians, training can be difficult to access. To improve access, training sessions are often incorporated into clinical meetings held by professional societies that are focused on adolescent and reproductive health. The contraceptive subdermal implant may only be ordered by a licensed physician after completion of the manufacturer-sponsored training.⁵⁹

IUD training is less formalized than that for the subdermal implant. Unlike the subdermal implant, insertion and removal of IUDs does not require the completion of a specific training program. Although

this skill has historically fallen under the domain of the gynecologist or family physician, increased acceptance by both individual pediatricians and professional societies has led to more training opportunities ranging from training sessions at annual clinical meetings to on-site support from pharmaceutical representatives. Access to LARC training for a pediatrician remains a challenge despite the increase in opportunities. Both the ACOG-initiated LARC program (<https://www.acog.org/programs/long-acting-reversible-contraception-larc/activities-initiatives>) and the National Clinical Training Center for Family Planning (<http://www.ctcfp.org/larc/>) provide a list of training opportunities open to all physicians regardless of specialty and professional society affiliation.

COST, CONSENT, AND CONFIDENTIALITY CONCERNS

Adolescents and pediatricians express concerns over cost and confidentiality related to LARC. Adolescents also report uncertainty about how to obtain LARC services.^{13,16} Specific concerns from pediatricians over accurate billing and in-office stocking of LARC and the supplies required for both insertion and removal have had a negative impact on LARC availability.^{13,17,18} Billing for LARC services is complex and multilayered, requiring a *Current Procedural Terminology* code for the placement or removal procedure charge, a Healthcare Common Procedure Coding System code for the actual LARC device charge, and an *International Classification of Diseases, 10th Revision* code for the diagnosis (Table 6). Importantly, there are codes for failed placement that can help with device replacement from pharmaceutical companies if malfunction occurs. Resources to guide LARC billing practices have been compiled by

TABLE 6 Common Billing Codes for LARC Services

Procedure Code (CPT)	Medication Code (HCPCS)	Diagnosis Code (ICD-10)
11981 insertion of implant	J7307 etonogestrel implant	Z30.018 encounter for other contraception (implant insertion)
11982 removal of implant	J7298 LNG-IUD (Mirena)	Z30.49 check, reinsert, or removal of implant
5300 IUD insertion	J7297 LNG-IUD (Liletta)	Z30.430 IUD insertion
53801 IUD removal	J7301 LNG-IUD (Skyla)	Z30.432 IUD removal
	J7296 LNG-IUD (Kyleena)	Z30.433 IUD removal and reinsertion
	J7300 Cu-IUD (Paragard)	Z30.431 IUD routine check

CPT, *Current Procedural Terminology*; HCPCS, Healthcare Common Procedure Coding System; ICD-10, *International Classification of Diseases, 10th Revision*.

multiple agencies and are widely available (Table 7).

Although the Patient Protection and Affordable Care Act contains provisions designed to expand coverage of LARC and other contraceptives, gaps in access still exist. The Title X Family Planning Program is important and may help fill these gaps. This program, established in the 1970s, provides family planning for anyone desiring services, with priority given to individuals from low-income families. State government public health programs (eg, the New York State Family Planning Benefit Program and the California Department of Health Care Services Family Planning, Access, Care, and Treatment [PACT] program) and cost-assistance programs administered by pharmaceutical companies may also help cover costs.⁶⁰ Potential cuts to the Title X Family Planning Program and the uncertainty of the Patient Protection and Affordable Care Act make it difficult to forecast future coverage of LARC.

An adolescent's ability to provide consent for LARC services is dependent on state law. A minimum age of consent for reproductive health services, which includes LARC placement and removal, is explicitly defined by some states. Other states follow the mature minor principle, by which an adolescent under the age of majority and still dependent on parents or guardians can independently consent to reproductive health care services if cognitive maturity is demonstrated.⁶¹ The Guttmacher Institute provides a helpful online resource for issues of consent.⁶²

The right to consent does not guarantee confidentiality. The goal upheld by various professional societies such as the AAP, Society for Adolescent Health and Medicine, and ACOG is to consider the medical record as confidential when caring for minors able to consent for reproductive health care services, including LARC.^{1,61} Breaches in confidentiality often stem from standard practices surrounding

electronic health records. The electronic health record has posed multiple challenges that have yet to be adequately addressed, ranging from inability to limit sensitive health information when parents or guardians request medical records to the automated creation of discharge summaries, appointment notifications, and medication lists, which include contraception.⁶³ These concerns may affect the ability to provide LARC services confidentially even when state laws allow for confidential reproductive health care for adolescents.

The complexity of consent and confidentiality is amplified when working with adolescents in the child welfare and justice systems. These adolescents experience unplanned pregnancies at a higher rate than their peers, suggesting that these are special populations with higher rates of unmet reproductive health care needs.^{64,65} The AAP and the National Commission on Correctional Health Care recommend that these groups of adolescents have access to appropriate reproductive health care services including contraception.^{65,66} Disclosing reproductive health information is inevitable when obtaining consent for LARC services for adolescents who are unable to provide independent consent. Pediatricians may find themselves navigating between a state law that allows an adolescent to provide independent consent and a welfare agency regulation that restricts this.⁶⁴ In addition to questions of consent, incarcerated adolescents may also face an additional cost barrier because state-funded health insurance may be suspended during incarceration.⁶⁵

Billing for LARC services also limits the ability to provide confidentiality. Groups advocating for better confidential care practices have suggested a more generic insurance bill be generated when adolescents are using parent or guardian insurance to cover reproductive

TABLE 7 Resources for Determining IUD Coverage

	Resource Link
University of California, San Francisco	http://larcprogram.ucsf.edu
National Women's Law Center CoverHer project	https://nwlc.org/coverher/
Kaiser Family Foundation	http://kff.org/womens-health-policy/report/medicaid-coverage-of-family-planning-benefits-results-from-a-state-survey/
Department of Health and Human Services	https://www.medicare.gov/federal-policy-guidance/downloads/cib040816.pdf
ACOG	https://www.acog.org/programs/long-acting-reversible-contraception-larc/activities-initiatives

health care services.⁶³ The Title X Family Planning Program is unique in that a detailed bill of services is not generated and sent to the parent or guardian. The Title X Family Planning Program improves confidential care by allowing the adolescent to provide consent for reproductive health care independent of a parent or guardian. However, consent policies for procedures set by an individual health care facility may still need to be considered in some cases.⁶⁷

PATIENT-CENTERED LARC COUNSELING

Pediatricians may unintentionally engage in directive counseling leading patients to select LARC methods when providing contraception care because of the overwhelmingly favorable attention these methods have received from multiple professional societies.^{1-3,19} Resisting coercive counseling practice is essential when providing reproductive health care. The reproductive justice movement is focused on the human right to maintain bodily autonomy, to have and not have children, and to raise children in safe and sustainable communities.⁶⁸ Although this report endorses the demonstrable safety of LARC and supports providers caring for adolescents to incorporate LARC counseling, placement, or referral services into practice, the importance of counseling within the framework of reproductive justice is clear. Focusing contraception counseling on the priorities of the adolescent patient helps keep the discussion patient centered and the decision-making shared (Table 8). Efficacy of pregnancy prevention may not be the sole factor, or even the most important factor, influencing a patient’s choice of contraception.^{69,70} Cultural beliefs surrounding future fertility or bleeding patterns and side-effect profile may heavily influence the patient’s contraceptive choice.^{69,70} Just as cultural beliefs held by

TABLE 8 Steps for Patient-Centered Approach to Contraception Counseling

Patient-Centered Contraception Counseling
Review the patient’s general thoughts, fears, and questions related to birth control methods
Understand the patient goals for contraception: when pregnancy is desired, whether reduction of menstrual bleeding or cramping is desired
Present all birth control options with information on efficacy, mechanism of action, safety of use, administration details, and side-effect profile
Review medical eligibility criteria and clearly discuss whether there is a contraindication to a specific birth control method
If the patient is ready to make a selection, encourage questions on the safety, efficacy, administration details, and side effect profile to ensure comfort with all aspects of the chosen method
Counsel on expected changes in bleeding
Assess need for back-up contraception and provide STI prevention education

patients may impact LARC use, cultural beliefs held by providers may impact LARC availability to adolescents. The AAP and ACOG support conscientious objection by the provider as long patients receive complete information of all services (even those the health care provider is not willing to deliver) and a timely referral to another provider.^{71,72}

Proponents of setting LARC within a reproductive justice framework do not discourage use of these methods. Rather, this framework advocates for active prevention of reproductive right abuses. Programs involving the previously available subdermal implant (Norplant) reflected aggressive marketing to poor women, women of color, and young urban women, and in some cases, offered cash incentive programs.^{69,73} A recent survey of 100 LARC leading experts found that 77% of participants opposed incentive programs surrounding LARC. The majority of participants commented that incentive-based programming is coercive and described this type of policy as “wrong” and “very disturbing.”⁵¹

The disparity of pregnancy incidence between adolescents from different socioeconomic and racial groups is clear. Pediatricians working with adolescents may feel compelled to deliver clear, directive counseling especially with the growing acceptance of LARC.^{74,75} When pediatricians acknowledge that women in particular socioeconomic and racial

groups have been the target of unethical contraceptive marketing or campaigns in the past, there is a natural recognition of the critical importance that patients choose their contraception free of coercion.^{69,74} LARC counseling within the reproductive justice framework enables women to have equal access to LARC methods and allows for the removal of these devices when desired. Structuring LARC counseling within this framework focuses providers on enhancing the well-being of adolescent patients by increasing LARC availability and not on simply increasing LARC use.

RECOMMENDATIONS

- In an effort to increase access to LARC by adolescents, pediatricians should do the following:
1. Recognize LARCs as safe options for adolescents. The US MEC can help clarify questions related to safety of use in a variety of complex medical conditions.
 2. Have a clear discussion of expected side effects with their adolescent patients, including expected changes in bleeding patterns, as part of LARC counseling. Providing this type of information and understanding the short-term options to control abnormal uterine bleeding are associated with higher LARC continuation.
 3. Recognize LNG-IUD as a promising option for reducing menses, particularly in those

with cognitive or physical disabilities or those with a diagnosis of anemia attributable to heavy menstrual bleeding.

4. Seek and obtain the required training for placement and removal of LARCs.
5. Understand that LARC placement does not need to be delayed for STI screening. IUD placement should be delayed if purulent cervicitis is noted or if an untreated gonorrhea or *Chlamydia* infection is present.
6. Emphasize dual therapy with condoms in LARC users to prevent STIs.
7. Be aware that confidentiality can be compromised when delivering LARC services during the consent process and inadvertently by insurance billing and various automated features of the electronic health record. Understand state laws surrounding reproductive health and the financial options available to cover LARC services.
8. When providing same-day LARC services, care must be taken to ensure all available contraceptive methods are reviewed, medical eligibility is considered, side effects are discussed, and personal safety related to intimate partner violence and coerced sexual activity is assessed.
9. Provide LARC counseling within the reproductive justice framework to prevent directive and potentially coercive counseling.
10. Focus on an end goal of improving the availability of LARC services to adolescents and not on increasing adolescent use of LARC methods.

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ABBREVIATIONS

AAP: American Academy of Pediatrics
 ACOG: American College of Obstetricians and Gynecologists
 CDC: Centers for Disease Control and Prevention
 Cu-IUD: copper intrauterine device
 IUD: intrauterine device
 LARC: long-acting reversible contraception
 LNG-IUD: levonorgestrel intrauterine device
 NSAID: nonsteroidal antiinflammatory drug
 STI: sexually transmitted infection
 US MEC: US Medical Eligibility Criteria for Contraceptive Use

REFERENCES

1. Committee on Adolescence. Contraception for adolescents.

Pediatrics. 2014;134(4). Available at: www.pediatrics.org/cgi/content/full/134/4/e1244

2. Committee on Practice Bulletins-Gynecology, Long-Acting Reversible Contraception Work Group. Practice Bulletin No. 186: long-acting reversible contraception: implants and intrauterine devices. *Obstet Gynecol*. 2017;130(5):e251–e269
3. Committee on Adolescent Health Care Long-Acting Reversible Contraception Work Group. ACOG Committee Opinion No. 735: adolescents and long-acting reversible contraception: implants and intrauterine devices. *Obstet Gynecol*. 2018;131(5):e130–e139
4. Curtis KM, Tepper NK, Jatlaoui TC, et al. US medical eligibility criteria for contraceptive use, 2016. *MMWR Recomm Rep*. 2016;65(3):1–103
5. Bayer LL, Hillard PJA. Use of levonorgestrel intrauterine system for medical indications in adolescents. *J Adolesc Health*. 2013;52(suppl 4):S54–S58
6. Kantartzis KL, Sucato GS. Menstrual suppression in the adolescent. *J Pediatr Adolesc Gynecol*. 2013;26(3):132–137
7. Hubacher D, Grimes DA. Noncontraceptive health benefits of intrauterine devices: a systematic review. *Obstet Gynecol Surv*. 2002;57(2):120–128
8. Lindberg L, Santelli J, Desai S. Understanding the decline in adolescent fertility in the United States, 2007–2012. *J Adolesc Health*. 2016;59(5):577–583
9. Martinez GM, Abma JC. Sexual activity, contraceptive use, and childbearing of teenagers aged 15–19 in the United States. *NCHS Data Brief*. 2015;(209):1–8
10. Santelli JS, Lindberg LD, Finer LB, Singh S. Explaining recent declines in adolescent pregnancy in the United States: the contribution of abstinence and improved contraceptive use. *Am J Public Health*. 2007;97(1):150–156
11. Parks C, Peipert JF. Eliminating health disparities in unintended pregnancy with long-acting reversible contraception (LARC). *Am J Obstet Gynecol*. 2016;214(6):681–688

12. Barrett M, Soon R, Whitaker AK, Takekawa S, Kaneshiro B. Awareness and knowledge of the intrauterine device in adolescents. *J Pediatr Adolesc Gynecol*. 2012;25(1):39–42
13. Kumar N, Brown JD. Access barriers to long-acting reversible contraceptives for adolescents. *J Adolesc Health*. 2016; 59(3):248–253
14. Teal SB, Romer SE. Awareness of long-acting reversible contraception among teens and young adults. *J Adolesc Health*. 2013;52(suppl 4):S35–S39
15. Russo JA, Miller E, Gold MA. Myths and misconceptions about long-acting reversible contraception (LARC). *J Adolesc Health*. 2013;52(suppl 4): S14–S21
16. Potter J, Rubin SE, Sherman P. Fear of intrauterine contraception among adolescents in New York City. *Contraception*. 2014;89(5):446–450
17. Pritt NM, Norris AH, Berlan ED. Barriers and facilitators to adolescents' use of long-acting reversible contraceptives. *J Pediatr Adolesc Gynecol*. 2017;30(1): 18–22
18. Murphy MK, Stoffel C, Nolan M, Haider S. Interdependent barriers to providing adolescents with long-acting reversible contraception: qualitative insights from providers. *J Pediatr Adolesc Gynecol*. 2016;29(5):436–442
19. Society for Adolescent Health and Medicine. Improving knowledge about, access to, and utilization of long-acting reversible contraception among adolescents and young adults. *J Adolesc Health*. 2017;60(4): 472–474
20. Mestad R, Secura G, Allsworth JE, Madden T, Zhao Q, Peipert JF. Acceptance of long-acting reversible contraceptive methods by adolescent participants in the Contraceptive CHOICE Project. *Contraception*. 2011; 84(5):493–498
21. Usinger KM, Gola SB, Weis M, Smaldone A. Intrauterine contraception continuation in adolescents and young women: a systematic review. *J Pediatr Adolesc Gynecol*. 2016;29(6):659–667
22. O'neil-Callahan M, Peipert JF, Zhao Q, Madden T, Secura G. Twenty-four-month continuation of reversible contraception. *Obstet Gynecol*. 2013; 122(5):1083–1091
23. American College of Obstetricians and Gynecologists' Committee on Obstetric Practice. Committee Opinion No. 670: immediate postpartum long-acting reversible contraception. *Obstet Gynecol*. 2016;128(2):e32–e37
24. Curtis KM, Jatlaoui TC, Tepper NK, et al. US selected practice recommendations for contraceptive use, 2016. *MMWR Recomm Rep*. 2016;65(4):1–66
25. Vigil M, Kaemmerer M, Seifert-Klauss V, et al. Contraception in women with congenital heart disease. *Am J Cardiol*. 2010;106(9):1317–1321
26. Amies Oelschlaeger A-M, Micks EA, Debiec KE, Nizamic T, Mantrala MD, Prager SW. Long acting reversible contraception in adolescents with cardiovascular conditions. *J Pediatr Adolesc Gynecol*. 2014;27(6):353–355
27. Sufrin CB, Postlethwaite D, Armstrong MA, Merchant M, Wendt JM, Steinauer JE. *Neisseria gonorrhoea* and *Chlamydia trachomatis* screening at intrauterine device insertion and pelvic inflammatory disease. *Obstet Gynecol*. 2012;120(6):1314–1321
28. Steiner RJ, Liddon N, Swartzendruber AL, Rasberry CN, Sales JM. Long-acting reversible contraception and condom use among female US high school students: implications for sexually transmitted infection prevention. *JAMA Pediatr*. 2016;170(5):428–434
29. Biggs MA, Arons A, Turner R, Brindis CD. Same-day LARC insertion attitudes and practices. *Contraception*. 2013;88(5): 629–635
30. Biggs MA, Harper CC, Brindis CD. California family planning health care providers' challenges to same-day long-acting reversible contraception provision. *Obstet Gynecol*. 2015;126(2): 338–345
31. Luchowski AT, Anderson BL, Power ML, Raglan GB, Espey E, Schulkin J. Obstetrician-gynecologists and contraception: long-acting reversible contraception practices and education. *Contraception*. 2014;89(6):578–583
32. Centers for Disease Control and Prevention. CDC contraceptive guidance for health care providers. US selected practice recommendations for contraceptive use, 2016: implants. Available at: <https://www.cdc.gov/reproductivehealth/contraception/mmwr/spr/implants.html>. Accessed September 24, 2019
33. Adeyemi-Fowode OA, Santos XM, Dietrich JE, Srivaths L. Levonorgestrel-releasing intrauterine device use in female adolescents with heavy menstrual bleeding and bleeding disorders: single institution review. *J Pediatr Adolesc Gynecol*. 2017;30(4): 479–483
34. Quint EH, O'Brien RF; Committee on Adolescence; North American Society for Pediatric and Adolescent Gynecology. Menstrual management for adolescents with disabilities. *Pediatrics*. 2016;137(4):e21060295
35. Rivera Drew JA. Hysterectomy and disability among US women. *Perspect Sex Reprod Health*. 2013; 45(3):157–163
36. Albanese A, Hopper NW. Suppression of menstruation in adolescents with severe learning disabilities. *Arch Dis Child*. 2007;92(7):629–632
37. Savasi I, Jayasinghe K, Moore P, Jayasinghe Y, Grover SR. Complication rates associated with levonorgestrel intrauterine system use in adolescents with developmental disabilities. *J Pediatr Adolesc Gynecol*. 2014;27(1): 25–28
38. Kirkham YA, Allen L, Kives S, Caccia N, Spitzer RF, Ornstein MP. Trends in menstrual concerns and suppression in adolescents with developmental disabilities. *J Adolesc Health*. 2013; 53(3):407–412
39. Hayes P. Contraceptive helps decrease bleeding in women. 2009. Available at: <https://hemaware.org/story/contraceptive-helps-decrease-bleeding-women>. Accessed September 24, 2019
40. Kadir RA, Chi C. Levonorgestrel intrauterine system: bleeding disorders and anticoagulant therapy. *Contraception*. 2007;75(suppl 6): S123–S129
41. Kingman CEC, Kadir RA, Lee CA, Economides DL. The use of levonorgestrel-releasing intrauterine system for treatment of menorrhagia in women with inherited bleeding

- disorders. *BJOG*. 2004;111(12):1425–1428
42. Lukes AS, Reardon B, Arepally G. Use of the levonorgestrel-releasing intrauterine system in women with hemostatic disorders. *Fertil Steril*. 2008;90(3):673–677
 43. Schaedel ZE, Dolan G, Powell MC. The use of the levonorgestrel-releasing intrauterine system in the management of menorrhagia in women with hemostatic disorders. *Am J Obstet Gynecol*. 2005;193(4):1361–1363
 44. Committee on Adolescent Health Care. ACOG Committee Opinion No. 760: dysmenorrhea and endometriosis in the adolescent. *Obstet Gynecol*. 2018;132(6):e249–e258
 45. Ryan SA. The treatment of dysmenorrhea. *Pediatr Clin North Am*. 2017;64(2):331–342
 46. Nelson AL, Massoudi N. New developments in intrauterine device use: focus on the US. *Open Access J Contracept*. 2016;7:127–141
 47. Berenson AB, Tan A, Hirth JM. Complications and continuation rates associated with 2 types of long-acting contraception. *Am J Obstet Gynecol*. 2015;212(6):761.e1
 48. Villavicencio J, Allen RH. Unscheduled bleeding and contraceptive choice: increasing satisfaction and continuation rates. *Open Access J Contracept*. 2016;7:43–52
 49. Casey PM, Long ME, Drozdowicz LB, Marnach ML, Weaver AL. Management of etonogestrel subdermal implant-related bleeding. *J Reprod Med*. 2014;59(5–6):306–312
 50. Friedlander E, Kaneshiro B. Therapeutic options for unscheduled bleeding associated with long-acting reversible contraception. *Obstet Gynecol Clin North Am*. 2015;42(4):593–603
 51. Foster DG, Barar R, Gould H, Gomez I, Nguyen D, Biggs MA. Projections and opinions from 100 experts in long-acting reversible contraception. *Contraception*. 2015;92(6):543–552
 52. Berlan ED, Pritt NM, Norris AH. Pediatricians' attitudes and beliefs about long-acting reversible contraceptives influence counseling. *J Pediatr Adolesc Gynecol*. 2017;30(1):47–52
 53. Teal SB, Romer SE, Goldthwaite LM, Peters MG, Kaplan DW, Sheeder J. Insertion characteristics of intrauterine devices in adolescents and young women: success, ancillary measures, and complications. *Am J Obstet Gynecol*. 2015;213(4):515.e1
 54. O'Flynn O'Brien KL, Akers AY, Perriera LK, Schreiber CA, Garcia-Espana JF, Sonalkar S. Intrauterine device insertion procedure duration in adolescent and young adult women. *J Pediatr Adolesc Gynecol*. 2019;32(3):312–315
 55. Zapata LB, Jatlaoui TC, Marchbanks PA, Curtis KM. Medications to ease intrauterine device insertion: a systematic review. *Contraception*. 2016;94(6):739–759
 56. Singh RH, Thaxton L, Carr S, Leeman L, Schneider E, Espey E. A randomized controlled trial of nitrous oxide for intrauterine device insertion in nulliparous women. *Int J Gynaecol Obstet*. 2016;135(2):145–148
 57. Akers AY, Steinway C, Sonalkar S, et al. Reducing pain during intrauterine device insertion: a randomized controlled trial in adolescents and young women. *Obstet Gynecol*. 2017;130(4):795–802
 58. Lopez LM, Bernholc A, Zeng Y, et al. Interventions for pain with intrauterine device insertion. *Cochrane Database Syst Rev*. 2015;(7):CD007373
 59. Merck Sharp and Dohme Corporation. Nexplanon: dosing and administration. Available at: <https://www.merckconnect.com/nexplanon/dosing-administration/>. Accessed September 24, 2019
 60. Angelini K. A lower-cost option for intrauterine contraception. *Nurs Womens Health*. 2016;20(2):197–202
 61. Committee on Adolescent Health Care. ACOG Committee Opinion No. 599: Committee on adolescent health care: Adolescent confidentiality and electronic health records. *Obstet Gynecol*. 2014;123(5):1148–1159
 62. Guttmacher Institute. An overview of consent to reproductive health services by young people. 2019. Available at: <https://www.guttmacher.org/state-policy/explore/overview-minors-consent-law>. Accessed September 24, 2019
 63. Anoshiravani A, Gaskin GL, Groshek MR, Kuelbs C, Longhurst CA. Special requirements for electronic medical records in adolescent medicine. *J Adolesc Health*. 2012;51(5):409–414
 64. Council on Foster Care, Adoption, and Kinship Care; Committee on Adolescence; Council on Early Childhood. Health care issues for children and adolescents in foster care and kinship care. *Pediatrics*. 2015;136(4). Available at: www.pediatrics.org/cgi/content/full/136/4/e1131
 65. Barnert ES, Perry R, Morris RE. Juvenile incarceration and health. *Acad Pediatr*. 2016;16(2):99–109
 66. Committee on Adolescence. Health care for youth in the juvenile justice system. *Pediatrics*. 2011;128(6):1219–1235
 67. US Department of Health and Human Services; Office of Population Affairs. Program requirements for Title X funded family planning projects. Available at: <https://www.hhs.gov/opa/guidelines/program-guidelines/program-requirements/index.html>. Accessed June 13, 2018
 68. SisterSong. Reproductive justice. Available at: <https://www.sistersong.net/reproductive-justice>. Accessed March 9, 2020
 69. Higgins JA. Celebration meets caution: LARC's boons, potential busts, and the benefits of a reproductive justice approach. *Contraception*. 2014;89(4):237–241
 70. Gomez AM, Fuentes L, Allina A. Women or LARC first? Reproductive autonomy and the promotion of long-acting reversible contraceptive methods. *Perspect Sex Reprod Health*. 2014;46(3):171–175
 71. American College of Obstetricians and Gynecologists. ACOG Committee Opinion No. 385 November 2007: the limits of conscientious refusal in reproductive medicine. *Obstet Gynecol*. 2007;110(5):1203–1208
 72. Committee on Bioethics. Policy statement-Physician refusal to provide information or treatment on the basis of claims of conscience.

Pediatrics. 2009;124(6):
1689–1693

73. Gold RB. Guarding against coercion while ensuring access: a delicate balance. *Guttmacher Policy Review*. 2014;17(3):8–14
74. Higgins JA, Kramer RD, Ryder KM. Provider bias in long-acting reversible contraception (LARC) promotion and removal: perceptions of young adult women. *Am J Public Health*. 2016;106(11):1932–1937
75. Gubrium AC, Mann ES, Borrero S, et al. Realizing reproductive health equity needs more than long-acting reversible contraception (LARC). *Am J Public Health*. 2016;106(1):18–19