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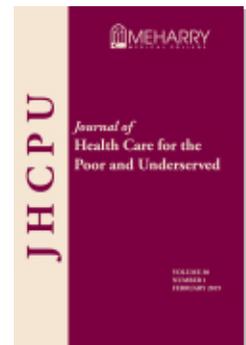
Community Women and Reproductive Autonomy: Building an
Infrastructure for Long-Acting Reversible Contraception
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Community Women and Reproductive Autonomy: Building an Infrastructure for Long-Acting Reversible Contraception (LARC) Services in a Mobile Health Clinic

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Summary: This article describes implementation of a long-acting reversible contraception (LARC) program in a free primary care clinic in central Florida. A background of LARC is presented, along with a description of the infrastructure built by the University of Florida Mobile Outreach Clinic, in an effort to share a framework for the provision of LARC services with other resource-limited settings.

Key words: Long-acting reversible contraception, LARC, contraception, medically uninsured reproductive health, family planning services, vulnerable populations.

Approximately 50% of pregnancies every year in the United States are unintended, however, this trend of unintended pregnancies and their sequelae does not affect all American women equally.¹ Marked variation occurs in recent rates of unintended pregnancy when women are analyzed by age, race, and socioeconomic status (SES): low-income women's unintended pregnancy rate has increased substantially since 2001, while rates for higher-income women have decreased to less than half of the national average.^{2,3} Additionally, women of color and young women aged 18–24 experience unintended pregnancy at a higher rate than non-Hispanic White women and older women.^{3,4} Unintended and rapid succession pregnancies are associated with higher levels of long-term health consequences such as maternal depression, intimate partner violence, lower prevalence of breastfeeding, decreased educational achievement, and overall worse outcomes in the mental and physical wellbeing of children.⁵

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Long-acting reversible contraception (LARC), including the intrauterine device (IUD) and etonogestrel implant, presents a highly effective and user-friendly contraceptive choice that is poised to change the landscape of unintended pregnancy in the United States and elsewhere.⁶ With no effort required for maintenance and rates of efficacy that rival those of permanent sterilization,⁷ IUDs and implants are recommended by the American College of Obstetricians and Gynecologists to be offered routinely as first-line contraceptive methods, noting that, with few contraindications, almost all women are eligible for the implant or an IUD.⁸

Barriers to Use of LARC in Low-SES Groups

Many women who would otherwise benefit from an IUD or implant are unable to do so and often end up cycling on and off short-acting hormonal methods (e.g., oral contraceptives and injectables) with much higher failure rates.¹ Commonly encountered barriers for uninsured and low SES women accessing these devices include high out-of-pocket cost, limited resources including lack of transportation to appointments, and lack of information regarding LARC options.^{9,10,11}

LARC Insertions in Resource-limited Settings

A delivery mechanism with the potential to overcome some of these barriers is the use of mobile health clinics to expand family planning services.^{12,13} In the international literature, this process was documented by Marie Stopes in Tanzania, who used motorized rickshaws known as “bajajis” as a core part of their efforts to expand family planning services in rural Tanzania by reducing cultural and transportation barriers and making service delivery more flexible.¹³ A domestic example in Baltimore, Maryland effectively utilized mobile clinics to provide reproductive health services, including distribution of contraceptives to exotic dancers.¹⁴

The Mobile Outreach Clinic and Its Surrounding Community

The University of Florida (UF) Mobile Outreach Clinic (MOC) is a mobile primary care clinic providing free medical services to uninsured and underserved citizens of Gainesville, Florida. Founded in 2010, the MOC serves five local neighborhoods, locations whose selection was data-driven in an attempt to maximize access to medical services for the areas with the highest rates of racial/ethnic health disparities. The clinic operates five days per week and is staffed largely by volunteer clinicians, with paid staff including one full-time registered nurse and one full-time nurse practitioner position. Each of the five neighborhoods served by the MOC receives services on a weekly basis, and on a consistent day of the week to enhance patient trust and to function as a reliable and easily accessible source of medical care. Funding sources include grants as well as support from the UF College of Medicine and the UF Department of Community and Family Medicine, as the clinic provides a service-learning site for medical and physician assistant student clinical rotations. Physically, the clinic is located on a

renovated, Blue Bird bus that has been retrofitted with two exam rooms, private spaces for intake and patient counseling, and a small laboratory station.

Gainesville, Florida is a college town of approximately 131,000 people, surrounded by rural counties. Census tract data of the neighborhoods served by the MOC demonstrate lack of health insurance among adults aged 18–64 to be 23–29%, which is significantly greater than the national prevalence for adults in the same age range (found by the Centers for Disease Control and Prevention [CDC] to be 12.4%).^{15,16} A recently published report of economic well-being in greater Alachua County demonstrated significant racial disparities in the community: the median income for Blacks is about half of non-Hispanic Whites, and approximately 45% of Black children are living in poverty.¹⁷

Community Need for Improved Contraceptive Services

Central Florida offers little access to affordable IUD and implant insertions, with the two local reproductive health clinics often used by low SES women having either prohibitive costs or long wait lists.

Data collected from the MOC electronic medical records indicate 3,231 clinic visits were provided for 1,971 unique patients in 2017. Patients seen in 2017 were largely uninsured (66.9%) and the majority identified as a racial/ethnic minority (68.2%). Five hundred and eighteen women of childbearing age (defined by the CDC as women aged 15–44)¹⁸ were seen in 2017 (Table 1). Although these women of childbearing age may have been seeking care for a variety of medical concerns, the proportion of total MOC patients they account for (26.3%) demonstrates the opportunity to improve the quality of available services related to reproductive life planning and preconception counseling.

A concurrent survey of 93 women of childbearing age seeking services at the MOC clinic sites, initiated as the Mobile Outreach Clinic long-acting reversible contraception (MOC LARC) program took effect, revealed that 36% were not using any method of contraception at the time the survey was completed. Survey respondents' most frequently reported barriers to LARC use included prohibitive cost, lack of knowledge about IUDs and implants, and concerns about side effects. The majority of patients surveyed reported a desire to receive counseling on the full spectrum of contraceptive options by their clinician, regardless of methods offered by the clinic offered at the time.

Prior to the initiation of the MOC LARC program, only short-acting hormonal methods of birth control were offered, including prescriptions for oral contraceptive pills and administration of medroxyprogesterone acetate (Depo-Provera) as well as condoms, all provided free of charge.

Framework for Provision of LARC Services

In beginning to implement a LARC program at the MOC, clinic staff determined multiple needs related to infrastructure and workflow, including equipment, trained providers, LARC devices, development of protocols, and integration of IUD and implant insertion appointments into what has traditionally been a walk-in clinic.

First, several pieces of equipment had to be purchased; a list of the equipment required

Table 1.**DEMOGRAPHIC CHARACTERISTICS OF MOC FEMALE PATIENTS OF CHILDBEARING AGE (15–44), 2017 (N=404^a)**

Characteristic	Patients, No. (%)
Age	
15–17	11 (2.7)
18–24	101 (25.0)
25–34	173 (42.8)
35–44	119 (29.5)
Race/Ethnicity	
Black	183 (45.3)
White	114 (28.2)
Hispanic/Latino	81 (20.0)
Asian	16 (4.1)
Native American	7 (1.7)
Other	3 (0.7)
Insurance Status	
None	275 (68.1)
Medicaid	65 (16.1)
Medicare	7 (1.7)
Private Insurance	57 (14.1)
Income	
Below \$10,000	154 (38.1)
10,000–14,999	43 (10.6)
15,000–19,999	34 (8.4)
20,000–29,999	43 (10.6)
30,000–39,999	21 (5.3)
40,000–49,999	8 (2.1)
50,000–59,999	3 (0.7)
60,000 and above	5 (1.2)
Income Unknown	93 (23.0)

Note

^aClients with missing demographic information were not included in this table (n=114). Demographic information for these 114 clients is missing due to intermittent loss of internet service on our mobile unit.

MOC= Mobile Outreach Clinic

for IUD and implant insertions is available in Box 1. Since several pieces of equipment for IUD insertions were prohibitively expensive for the clinic, MOC partnered with a local initiative charged with improving poor birth outcomes who helped finance the equipment. Collaboration with a local primary care office allowed MOC staff to receive training and access to an autoclave for sterilization of metal equipment; autoclave use is necessary for the equipment associated with IUD insertion, but not for insertion of the etonogestrel implant.

Box 1.

BASIC EQUIPMENT NEEDED FOR LARC INSERTIONS

Etonogestrel Implant	Intrauterine Device
Sterile, preloaded Nexplanon applicator	Sterile, packaged IUD device (copper or levonorgestrel-releasing)
Urine pregnancy test	Urine pregnancy test
Sterile gloves	Sterile gloves
Lidocaine 1%	Antiseptic solution (povidone iodine or chlorhexidine)
25-gauge needle (1.5 inches) attached to 2–5ml syringe	Gonorrhea/chlamydia swab
Antiseptic solution	Single-tooth Tenaculum ^a
Adhesive strip for closure of puncture site	Uterine sound ^{a,b}
Elastic pressure dressing	Graves Speculum ^{a,b}
	Curved, long-handle scissors ^a

Notes

^aRequires sterilization

^bCan purchase disposable option instead of metal

Second, medical providers with training in IUD and implant insertion were also needed. Although the various IUDs share some insertion steps, there are device-specific instructions for the variants in cartridges for the TCU380A (copper) IUD and the various levonorgestrel-releasing IUDs. Merck, the manufacturer of the only available etonogestrel implant Nexplanon, requires that providers attend a formal implant training. Mobile Outreach Clinic providers come from a wide range of disciplines and specialties, so the LARC program has primarily been managed by one nurse practitioner with a background in reproductive health who had already undergone the aforementioned trainings and has several years' experience with both IUD and etonogestrel implant insertion.

Perhaps most importantly, the IUDs and etonogestrel implants themselves were needed. In our resource-limited setting, we have heavily relied on the use of the pharmaceutical Patient Assistance Program known as the Access and Resources in Contraceptive Health (ARCH) for Bayer IUDs. This program provides levonorgestrel IUDs at no cost to uninsured women in the United States who meet financial criteria for assistance. Neither the copper IUD nor the etonogestrel implant are available through a Patient Assistance Program and so have been prohibitively expensive to offer at MOC. For this reason, since the inception of the LARC program in October 2016, 17 levonorgestrel IUDs have been inserted (15 were ordered through the ARCH program for uninsured women) and one Nexplanon has been inserted (provided by a donation).

Finally, it was necessary to integrate LARC insertion appointments into MOC,

which has traditionally been a walk-in clinic where few procedures were performed. Appointments for IUD or implant insertions were necessary due to reliance on Patient Assistance Programs for LARC devices. Education was provided to all MOC providers, regardless of their specialty, to promote current best practices related to reproductive health and to increase their knowledge of comprehensive contraceptive counseling. Informed consent forms and post-procedure instructions were developed in both English and Spanish. A workflow for counseling and insertion was developed (Figure 1). Special care was taken to avoid unnecessary testing or additional visits that would delay insertion of the chosen device (e.g., current best practice states that gonorrhea and chlamydia testing can be performed at the time of IUD insertion, assuming the patient has no overt signs of infection).^{19,20} Additionally, MOC encourages women with recent IUD or implant insertion to return to the clinic at any time to discuss side effects or concerns, however, such a visit is not required if the patient is satisfied with her method.²¹

With this model, and because of MOC's reliance on Patient Assistance Programs, patients typically wait an average of two weeks from the time the application is faxed to receipt of the IUD. In order to promote full reproductive autonomy, appointments are also offered for IUD and implant removal regardless of whether the device was inserted at the MOC or elsewhere.

In addition to provider education, all medical and physician assistant students who rotate with MOC receive information about comprehensive, patient-centered, and tiered contraceptive counseling in accordance with recommendations from the CDC.²² Tiered contraceptive counseling refers to the practice of presenting information on the most effective methods (e.g., IUDs and etonogestrel implants) first before discussing methods with lower efficacy such as short-acting hormonal options and barrier methods. Mobile Outreach Clinic staff have collaborated with medical residents at UF to improve knowledge and skills related to contraceptive counseling and to assist with device insertion training.

Outcomes

Twenty-three women have been referred for IUD or implant insertion since the inception of the MOC LARC program in October 2016. Five women were considered to be lost to follow-up, in that they participated in a clinic visit or phone call where pre-procedure counseling was performed but did not return for their insertion appointment. Three phone call attempts to reschedule were made to patients who did not show up for their insertion appointment, after which the patient was considered to be lost to follow-up. Every uninsured woman who applied for a levonorgestrel IUD through the ARCH Patient Assistance Program was approved and received a device and subsequent insertion free of charge.

After about a year of relatively few insertions, the MOC has seen a substantial increase in IUD and implant insertions over time. Demographic characteristics of the 18 women who received a LARC insertion are available in Table 2. Of these 18, eight women returned for follow-up visits related to their LARC device and nine women were reached by telephone to review satisfaction with their method and address any questions or concerns the patient may have had. One woman was not reached. Only

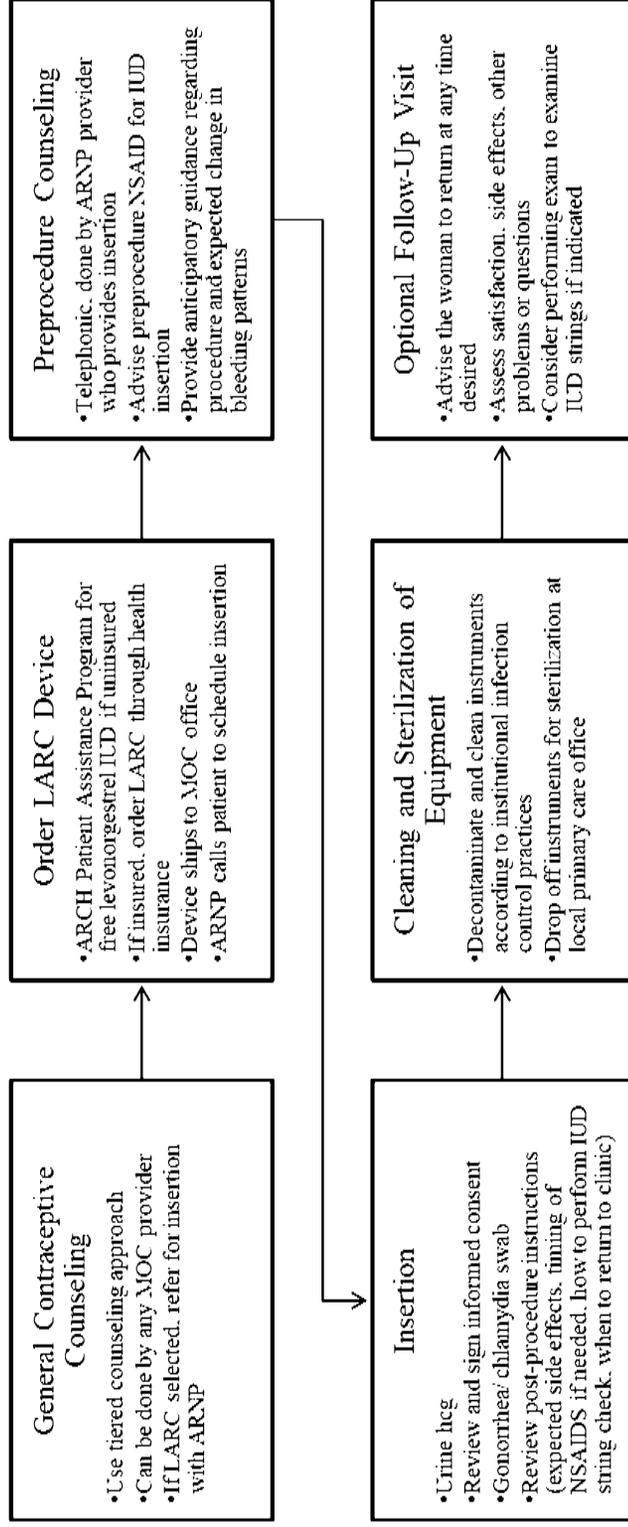


Figure 1. Mobile outreach clinic workflow for LARC program.

Note

LARC= long-acting reversible contraception

Table 2.**DEMOGRAPHIC CHARACTERISTICS OF PATIENTS OF MOC LARC CLINIC, 2016–2018 (N=18)**

Characteristic	Patients, No. (%)
Age	
15–17	1 (6)
18–24	5 (28)
25–34	6 (33)
35–44	6 (33)
Race/Ethnicity	
Black	7 (38)
White	5 (28)
Hispanic/Latino	5 (28)
Asian	1 (6)
Native American	0
Other	0
Insurance Status	
None	16 (89)
Medicaid	2 (11)
Medicare	0
Private Insurance	0
Income	
Below \$10,000	5 (28)
10,000–14,999	4 (22)
15,000–19,999	2 (11)
20,000–29,999	4 (22)
30,000–39,999	2 (11)
40,000–49,999	0
50,000–59,999	1 (6)
60,000 and above	0
Income Unknown	0

Notes

MOC= Mobile Outreach Clinic

LARC= long-acting reversible contraception

one out of the 17 women who either returned for a visit or were reachable by telephone requested removal of her IUD, citing concerns about changes in her bleeding pattern. Her IUD was removed at the MOC shortly thereafter.

Lessons Learned and Future Directions

The MOC LARC program would not have been possible without collaboration and support from multiple local agencies whose missions overlapped with known outcomes

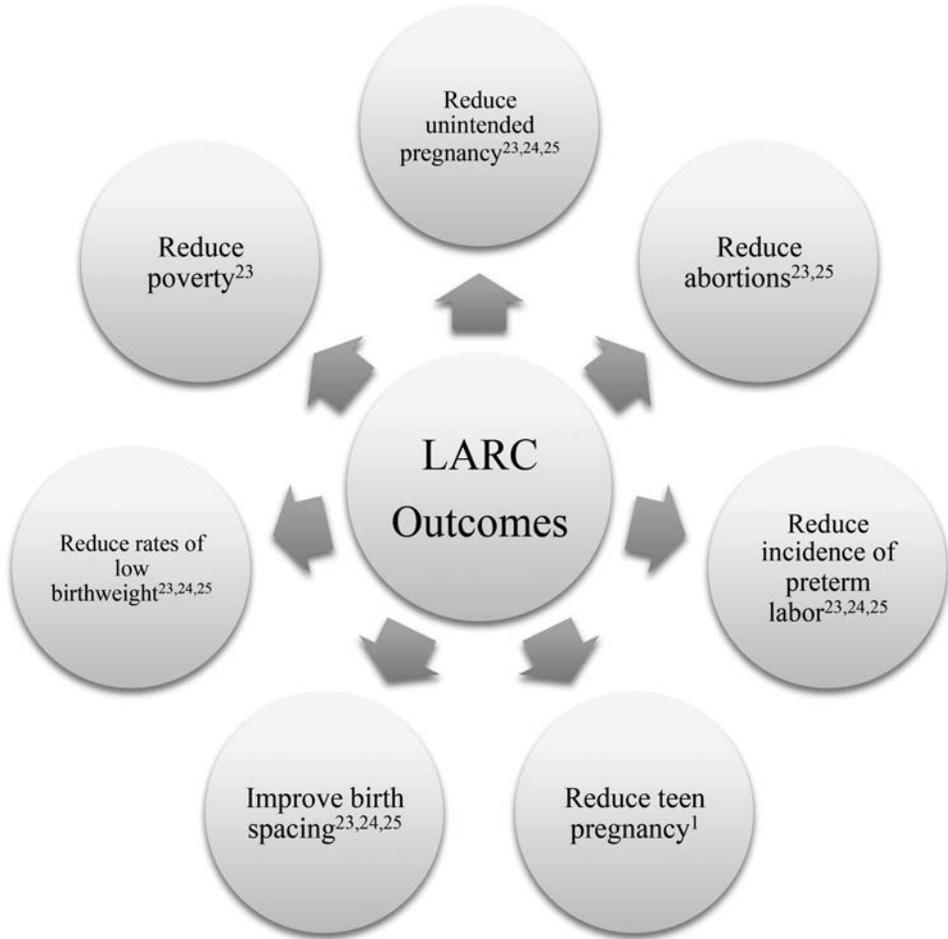


Figure 2. LARC outcomes.

of improving access to IUDs and implants (Figure 2). It is important to leverage those shared institutional goals when looking for funding for equipment, LARC devices, or use of an autoclave. It is also necessary to have strong engagement from all MOC providers, staff, and student, so that opportunities for contraceptive management are not overlooked and so that providers have sufficient knowledge of LARC options for them to feel comfortable referring patients for insertions.

Supplemental funding has been sought to purchase the IUDs and implants outright, so that a full array of contraceptive options can be offered free of charge to patients of MOC. Having these devices in stock will also reduce dependence on the ARCH Patient Assistance Program and allow for same-day insertions. An effort has been made to train additional MOC clinicians in IUD and implant insertion, increasing institutional capacity to offer these services as well as improving sustainability of the MOC LARC program. Finally, the collection of follow-up data regarding patients' experiences, satisfaction, and continuation rates with their IUD or implant will be necessary in order to assess and improve the program in the future.

As threats to funding and accessibility for family planning become more prevalent, it is imperative that mobile clinics such as University of Florida Mobile Outreach Clinic offer a full array of contraceptive options to vulnerable patients at risk for unintended pregnancies.

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References

1. Birgisson NE, Zhao Q, Secura GM, et al. Preventing unintended pregnancy: the contraceptive CHOICE project in review. *J Womens Health (Larchmt)*. 2015 May;24(5):349–53. Epub 2015 Mar 31.
<https://doi.org/10.1089/jwh.2015.5191>
PMid:25825986 PMCID:PMC4441000
2. Finer LB, Henshaw SK. Disparities in rates of unintended pregnancy in the United States, 1994 and 2001. *Perspect Sex Reprod Health*. 2006 Jun;38(2):90–6.
<https://doi.org/10.1363/3809006>
PMid:16772190
3. Finer LB, Zolna MR. Declines in unintended pregnancy in the United States, 2008–2011. *N Engl J Med*. 2016 March 3;374(9):843–52.
<https://doi.org/10.1056/NEJMsa1506575>
PMid:26962904 PMCID:PMC4861155
4. Kim TY, Dagher RK, Chen J. Racial/ethnic differences in unintended pregnancy: evidence from a national sample of U.S. women. *Am J Prev Med*. 2016 April;50(4):427–35. Epub 2015 Nov 23.
<https://doi.org/10.1016/j.amepre.2015.09.027>
PMid:26616306
5. Gipson JD, Koenig MA, Hindin MJ. The effects of unintended pregnancy on infant, child, and parental health: a review of the literature. *Stud Fam Plann*. 2008 Mar;39(1):18–38.
<https://doi.org/10.1111/j.1728-4465.2008.00148.x>
PMid:18540521
6. Kavanaugh ML, Jerman J, Finer LB. Changes in the use of long-acting reversible contraceptive methods among U.S. women, 2009–2012. *Obstet Gynecol*. 2015 Nov;126(5):917–27.
<https://doi.org/10.1097/AOG.0000000000001094>
PMid:26444110 PMCID:PMC4946164
7. Trussell J. Contraceptive failure in the United States. *Contraception*. 2011 May;83(5):397–404. Epub 2011 Mar 12.
<https://doi.org/10.1016/j.contraception.2011.01.021>
PMid:21477680 PMCID:PMC3638209
8. Espey E, Hofler L, Committee on Practice Bulletins—Gynecology, et al. Long-acting reversible contraception: implants and intrauterine devices. ACOG Practice Bulletin No. 186. American College of Obstetricians and Gynecologists. 2017

- Nov;130(5):e252–69. Available at: <https://www.acog.org/-/media/Practice-Bulletins/Committee-on-Practice-Bulletins—Gynecology/Public/pb186.pdf?dmc=1&ts=20171230T1106091735>
9. Secura GM, Allsworth JE, Madden T, et al. The Contraceptive CHOICE Project: reducing barriers to long acting reversible contraception. *Am J Obstet Gynecol*. 2010 Aug;203(2):115.e1–7. Epub 2010 Jun 11. <https://doi.org/10.1016/j.ajog.2010.04.017> PMID:20541171 PMCID:PMC2910826
 10. Russo JA, Miller E, Gold MA. Myths and misconceptions about long-acting reversible contraception (LARC). *J Adolesc Health*. 2013 Apr;52(4 Suppl):S14–21. <https://doi.org/10.1016/j.jadohealth.2013.02.003> PMID:23535052
 11. Simmons KB, Edelman AB, Li H, et al. Personalized contraceptive assistance and uptake of long-acting, reversible contraceptives by postpartum women: a randomized, controlled trial. *Contraception*. 2013 Jul;88(1):45–51. Epub 2012 Dec 4. <https://doi.org/10.1016/j.contraception.2012.10.037> PMID:23218851
 12. Ngo TD, Nuccio O, Pereira SK, et al. Evaluating a LARC expansion program in 14 Sub-Saharan African countries: a service delivery model for meeting FP2020 goals. *J Matern Child Health*. 2017 Sep;21(9):1734–43. <https://doi.org/10.1007/s10995-016-2014-0> PMID:27154524 PMCID:PMC5569118
 13. Marie Stopes International. Innovating mobile service delivery to increase FP choice and access for the peri-urban poor: Marie Stopes Tanzania's bajaji model. London, United Kingdom: Marie Stopes International, 2015. Available at: <https://mariestopes.org/media/2114/mobile-service-delivery-tanzania-bajajis.pdf>.
 14. Moore E, Han J, Serio-Chapman C, et al. Contraception and clean needles: feasibility of combining mobile reproductive health and needle exchange services for female exotic dancers. *Am J Public Health*. 2012 Oct;102(10):1833–6. Epub 2012 Aug 16. <https://doi.org/10.2105/AJPH.2012.300842> PMID:22897527 PMCID:PMC3490651
 15. Centers for Disease Control and Prevention (CDC). 500 cities: local data for better health [census tract data by city, Gainesville, FL, model-based estimates for current lack of health insurance among adults aged 18–64 years—2015]. Atlanta, GA: Centers for Disease Control and Prevention, 2017. Available at: <https://www.cdc.gov/500cities/>.
 16. Clarke TC, Norris T, Schiller JS. Early release of selected estimates based on data from 2016 National Health Interview Survey. Hyattsville, MD: National Center for Health Statistics, 2017. Available at: <https://www.cdc.gov/nchs/data/nhis/earlyrelease/earlyrelease201705.pdf>.
 17. University of Florida Bureau of Economic and Business Research. Understanding racial inequity in Alachua County. Gainesville, FL: University of Florida Bureau of Economic and Business Research, 2018. Available at: https://www.bebr.ufl.edu/sites/default/files/Research%20Reports/ri1_baseline_report.pdf.
 18. Daugherty J, Martinez G. Birth expectations of U.S. women aged 15–44. Hyattsville, MD: National Center for Health Statistics, 2016. Available at: <https://www.cdc.gov/nchs/data/databriefs/db260.pdf>.
 19. Curtis KM, Tepper NK, Jatlaoui TC, et al. U.S. medical eligibility criteria for contraceptive use, 2016. *MMWR Recomm Rep*. 2016 Jul 29;65(3):1–103.

- <https://doi.org/10.15585/mmwr.rr6503a1>
<https://doi.org/10.15585/mmwr.rr6504a1>
20. Caddy S, Yudin MH, Hakim J, et al. Best practices to minimize risk of infection with intrauterine device insertion. *J Obstet Gynaecol Can.* 2014 Mar;36(3):266–74.
[https://doi.org/10.1016/S1701-2163\(15\)30636-8](https://doi.org/10.1016/S1701-2163(15)30636-8)
 21. Curtis KM, Jatlaoui TC, Tepper NK, et al. U.S. selected practice recommendations for contraceptive use, 2016. *MMWR Recomm Rep.* 2016 Jul 29;65(4):1–66.
<https://doi.org/10.15585/mmwr.rr6503a1>
<https://doi.org/10.15585/mmwr.rr6504a1>
 22. Gavin L, Pazol K. Update: providing quality family planning services: recommendations from CDC and the U.S. Office of Population Affairs, 2015. *MMWR Recomm Rep.* 2016;65(9):231–4.
 23. Kaye K, Gootman JA, Ng AS, et al. The benefits of birth control in America: getting the facts straight. Washington DC: The National Campaign to Prevent Teen and Unplanned Pregnancy, 2014. Available at <https://powertodecide.org/sites/default/files/resources/primary-download/benefits-of-birth-control-in-america.pdf>
 24. Goldthwaite LM, Duca L, Johnson RK, et al. Adverse birth outcomes in Colorado: assessing the impact of a statewide initiative to prevent unintended pregnancy. *Am J Public Health.* 2015 Sept;105(9):e60–e66.
 25. Sonfield A. Beyond preventing unplanned pregnancy: the broader benefits of publicly funded family planning services. *Guttmacher Policy Review.* 2014;17(4):2–6. Available at <http://www.guttmacher.org/pubs/gpr/17/4/gpr170402.pdf>