

**FAMILY PLANNING IN SUB-SAHARAN AFRICA:
A REVIEW OF INTERVENTIONS IN PROMOTION OF LONG-ACTING
REVERSIBLE CONTRACEPTION**

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ABSTRACT

International non-governmental organizations (INGOs) in the field of sexual and reproductive health (SRH) consider access to family planning services a universal human right. Family planning programs should strive to effectively provide information, counseling, and contraceptive services to allow women and men the ability to freely determine when and how many children they desire to have.

In developing regions of the world, women are often unable to obtain or use modern contraception (mC) for many reasons relating to both supply and demand side factors. Use of mC is lowest in Sub-Saharan Africa (SSA). Unmet need (i.e., women who desire to delay childbearing but are not using any methods to do so) is highest in this region as well. Higher rates of unintended pregnancy are directly related to low mC use and high unmet need. The public health significance of this relationship is great: unintended pregnancy has grave health implications for maternal and child morbidity and mortality in the developing world.

Women of reproductive age in SSA rely primarily on traditional and short-acting reversible contraception, which are prone to incorrect or inconsistent usage and failure. By contrast, long-acting reversible contraception (LARC) provides up to ten years of highly effective protection against pregnancy. LARC methods are among the safest, most cost-effective, and reliable forms of contraception available today. LARC includes the copper

intrauterine device (IUD), levonorgestrel intrauterine system (LNG-IUS), and contraceptive implant. These methods are appropriate for most women, and can be used to space or limit childbearing until the user is ready to have children.

LARC methods have historically been underutilized in SSA, where they could benefit millions of women seeking to control their fertility. Relatively few interventions exist within the international development field where LARC has been sustainably introduced into the mC method mix in SSA. This paper reviews and examines the literature on published interventions, and provides international development practitioners with useful recommendations for LARC promotion in family planning programs moving forward. These recommendations include decentralizing health care networks, building capacity in service delivery and skills training, and conducting advocacy and education through social and behavioral change communication (SBCC).

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PREFACE

This thesis is the result of a lifetime's worth of support from my family. I would not be where I am today without their unwavering love and encouragement to succeed in my academic pursuits. I would also like to thank my boyfriend, Matt, for his needed humor and ability to provide me with valuable feedback on my writing, all done while balancing the demands of law school. You have all been so important to my academic success!

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1.0 INTRODUCTION

Modern contraception (mC) refers to short-acting, long-acting, and permanent methods of contraception that exclude traditional methods. In 2014, 57 percent of married women in the developing world ages 15 to 49 used mC. Regionally, differences exist with the highest mC rate seen in East Asia (88 percent), and the lowest rate continually seen in Sub-Saharan Africa (SSA) (19 percent) (Singh, Darroch, & Ashford, 2014; Westoff, 2012). Unmet need for mC is the highest in SSA (Singh et al., 2014). The public health implications of this are troubling, as low patterns of regional mC use can result in higher rates of unintended pregnancy (Singh et al., 2014). Unintended pregnancy can produce a range of detrimental effects on health including maternal and infant mortality and morbidity (Cleland, Conde-Agudelo, Peterson, Ross, & Tsui, 2012). Providing family planning (FP) services can improve these proximal maternal and child health (MCH) indicators as well as more distal factors including the education, economic well-being, and social empowerment of the women and families who use them (Casterline, 2010).

Most women in SSA rely on traditional methods or short-acting reversible contraception, such as the oral contraceptive or injectable, to provide desired protection against pregnancy (Mbizvo & Phillips, 2014). These methods are more prone to incorrect or inconsistent usage, and subsequent failure resulting in an unintended pregnancy (American Academy of Pediatrics, 2014). A skewed mC method mix that favors short-acting methods prevents a woman from choosing the best method that suits her unique circumstances and fertility preferences (Sullivan,

Bertrand, Rice, & Shelton, 2006). The skewed mC method mix is in part the result of a variety of supply and demand side barriers that prevent women in SSA from obtaining and using their preferred mC over their reproductive lifetimes (Jacobstein, Bakamjian, Pile & Wickstrom, 2009).

Long-acting reversible contraception, or LARC, has been hailed as one of the most safe and effective methods of mC for any woman looking to avoid pregnancy (American College of Obstetricians and Gynecologists, 2011). LARC methods include the copper intrauterine device (IUD), levonorgestrel intrauterine system (LNG-IUS) and the contraceptive implant. Compared to their short-acting counterparts, LARC methods are more cost-effective and have lower typical and perfect use failure rates over the long-term, meaning that their efficacy in preventing pregnancy is among the highest available (Hathaway, Torres, Vollett-Krech, & Wohltjen, 2014). While LARC has become more popular among medical providers in the industrialized world, it has been slow to gain traction among healthcare systems in SSA (Seiber, Bertrand, & Sullivan, 2007). Few health INGOs or national governments have strongly committed to expanding their mC method mix to include all forms of LARC, although the benefits of its use are widely known among the sexual and reproductive health (SRH) community (Family Planning 2020, 2015b; WHO, 2012). Again, economic, socio-cultural, and sometimes physical barriers prevent women in this region of the world from obtaining LARC (Chandra-Mouli, McCarraher, Phillips, Williamson, & Hainsworth, 2014; Cleland & Machiyama, 2015).

The anticipated benefits of introducing LARC in SSA are compelling enough to warrant further research and consideration among international development (ID) practitioners working in the SRH field. With access to LARC, women can delay childbearing for up to ten years with minimal user adherence or maintenance beyond routine visits with women's health providers (Espey & Ogburn, 2011). In a region of the world where women generally stress their desire for

contraception to space rather than limit total births, LARC can successfully provide the desired window of two years or more between children to better guarantee a healthy child and mom (Pile, Ndede, Ndong, Jacobstein, & Johri, 2007).

The overall objectives of this paper are to (1) examine previously completed family planning interventions in SSA that sought to introduce LARC into the mC method mix; (2) compare obstacles to LARC provision, in addition to the relative strengths, weaknesses, and overall effectiveness of these interventions; and (3) propose a set of recommendations for ID practitioners interested in promoting LARC methods among SSA women. The second chapter provides background information for the reader on the burden of unintended pregnancy both globally and in SSA. This chapter examines the importance of family planning in international development, and concludes with an overview of modern methods of contraception. The third chapter outlines the methodology for the literature review, including search terms and inclusion/exclusion criteria. The fourth chapter reports on the results of the literature review; 20 articles met inclusion criteria, and covered ten family planning interventions conducted in 16 SSA countries. This chapter provides details on both service delivery and behavioral change communication components of each intervention. The fifth chapter discusses major obstacles to LARC provision, overall effectiveness of the interventions, and other considerations. The final sixth chapter concludes with recommendations for future interventions, limitations, and the public health significance of LARC promotion in FP programs for SSA.

2.0 BACKGROUND

2.1 THE BURDEN OF UNINTENDED PREGNANCY

Without access to FP methods to limit fertility, an average woman could have 15 children over the course of her lifetime (Cleland, 2009). Of the estimated 1.6 billion women who are living in the developing world and desire to avoid a pregnancy (i.e., either postpone or stop childbearing altogether), 26 percent of them are not using any form of modern contraception (Singh et al., 2014). More than half of all pregnancies in the world are unplanned; around 80 million unintended pregnancies occur annually in the developing world, and it is estimated that 40 million will result in abortion, 10 million in miscarriage, and 30 million will reach live birth (Bongaarts, 2015; WHO, 2012).

In the developing world, 81 percent of unintended pregnancies are a result of having an unmet need for contraception (i.e., either using no contraception or a traditional method) (Singh et al., 2014). Among the causes of unintended pregnancy, 52 percent are attributed to nonuse of contraceptive method, while 43 percent are attributed to incorrect or inconsistent use of contraceptive method, and just 5 percent to consistent use but method failure (Espey & Ogburn, 2011). The Guttmacher Institute estimates an unintended pregnancy rate of 54 per 1,000 in the developing world among women ages 15 to 44, compared to 44 per 1,000 in more developed regions of the world (Sedgh, Singh, & Hussain, 2014). The chance of maternal death is much

greater in the developing world at one in 51; for women living in Organization for Economic Cooperation and Development (OECD) countries, their chance of death from maternal causes is just one in 4,000 (Snow, Laski, & Mutumba, 2015).

Childbirth in early life is especially dangerous. An estimated 16 million adolescents, ages 15 to 19, give birth each year; in the developing world, the leading cause of death among adolescent females is complications from pregnancy, birth, and unsafe abortion. Among women 25 and younger living in the developing world, maternal sepsis and hemorrhage are common causes of death (Krashin, Tang, Mody, & Lopez, 2015). Adolescent mothers also have infants with a 50 percent higher chance of dying in the first week of life than those who are born to women older than 20; these infants are also more likely to be born preterm and with a low birth weight (Chandra-Mouli et al., 2014; Prata, Weidert, & Sreenivas, 2013). An estimated 33 million adolescents worldwide have an unmet need for contraception (Family Planning 2020, 2015b).

Human development indicators suggest that a high birth rate within a country can compromise the health of both mother and infant through the lifespan (Jacobstein et al., 2009; Prata et al., 2013). Population growth puts ever-increasing pressure on the land to provide enough food and space for shelter (Singh et al., 2014). High population density can be conducive to infectious disease transmission and chronic malnutrition among children (Family Planning 2020, 2015b; Tsui, McDonald-Mosey, & Burke, 2010). Large households with many children face food insecurity and economic hardship if they are dependent upon one income to provide for all (Jacobstein et al., 2009; WHO, 2015a). Families may have to decide which child gets an education and who must work, based on the high price of school uniforms and supplies (Prata et al., 2013). Adolescent women who become pregnant may need to drop out of school

and ultimately be unable to complete their education (McCurdy, Schnatz, Weinbaum, & Zhu, 2014; Singh et al., 2014). Social services are increasingly overburdened as more people fall into extreme poverty (Jacobstein et al., 2009).

2.1.1 Sub-Saharan Africa

Fertility rates have declined tremendously over the past few decades in some parts of the world including North America, Europe, and more recently Asia and Latin America (Snow et al., 2015). Globally, the present total fertility rate (TFR) is 2.5 children per woman; in SSA, the regional total fertility rate is 4.5 children per woman (You, Hug, & Anthony, 2015). In 15 SSA countries, the TFR can be up to six children per woman (Jacobstein et al., 2009). A high fertility rate, defined as a total fertility rate of greater than 5.0 births per woman, has not only a large impact on the population growth rate of a developing country, but on the lifetime health, education, and economic livelihood of the mother and her children as well (Casterline, 2010).

SSA is experiencing rapid demographic growth as a result of high fertility rates, meaning that the total population in this part of the world is expected to double by the year 2050 (Bongaarts, 2015; You et al., 2015). That means 1.7 billion people living in the region in 34 years' time. There is immediate concern that with such population growth global efforts to reduce poverty and hunger may be stymied, as local food production may not be able to meet population demands (Cleland, 2009). Additionally, the number of women of reproductive age is estimated to increase from 280 million in 2015 to 607 million by 2050, which will also result in an increasing number of unintended pregnancies and births (You et al., 2015).

In SSA, an estimated 14 million unintended pregnancies occur each year. The Guttmacher Institute estimates a regional unintended pregnancy rate of 80 per 1,000 women ages

15 to 44 (almost double the developed world rate of 44 per 1,000) (Sedgh et al., 2014). A large proportion of these pregnancies is attributed to poor use of short-term hormonal methods, and almost half occur among women ages 15 to 24 (Hubacher, Mavranezouli, & McGinn, 2008; Williamson, Parkes, Wight, Petticrew, & Hart, 2009). The annual population growth rate of 2.4 percent is the highest in the world (Jacobstein et al., 2009). The proportion of maternal deaths worldwide occurring in SSA increased from 23 to 52 percent from 1980 to 2008 (Cleland et al., 2012). In SSA, pregnancy is recognized as one of the most dangerous health events in a woman's lifetime. Women in this region of the world have a one in 22 lifetime risk of maternal death (Hubacher et al., 2008; Jacobstein et al., 2009).

In 2012, roughly 213 million women living in SSA were of reproductive age (15 to 49 years old). Of this population, 60 percent of women who reported wanting to avoid pregnancy had an unmet need for mC (Darroch & Singh, 2013). An unmet need refers to the situation of women who do not want more children but are not using any methods to prevent pregnancy (Cleland & Machiyama, 2015). Globally, unmet need is highest in SSA (Mbizvo & Phillips, 2014; Singh et al., 2014). Three of the top four countries with highest unmet need are located in SSA: Liberia, Rwanda, and Uganda (Blumenthal, Voedisch, & Gemzell-Danielsson, 2011). The regional unmet need has declined by only 6.5 percent from 1994 to 2014, compared to an 11.5 percent decline worldwide (Snow et al., 2015).

Unmet need in SSA is highest among less-educated, rural, and poor women (Creanga, Gillespie, Karklins, & Tsui, 2011; Mbizvo & Phillips, 2014; Singh et al., 2014). Research also suggests it may be higher among ethnic minorities, adolescents, and unmarried women (Doyle, Mavedzenge, Plummer, & Ross, 2012; Vernon, Khan, Birungi, Askew, & Stones, 2007). Indeed, women in the poorest quintiles, who typically reside in rural areas, tend to have between

two to four more children than those in the wealthiest quintile who live in urban areas (You et al., 2015). Additionally, 73 percent of women living in the poorest quintile have an unmet need for contraceptives, while 46 percent of the wealthiest quintile report such unmet need (Singh et al., 2014).

The lowest mC prevalence rates have been recorded in West and Central Africa, while the highest rates exist in East and Southern Africa (Cleland, 2009; Cleland, Ndugwa, & Zulu, 2011). While the global contraceptive prevalence rate is 63 percent, 23 of the 42 countries in the region had a contraceptive prevalence rate below 20 percent in 2010 (Cleland & Shah, 2013). In some of the very poorest countries (e.g., Chad and South Sudan), the contraceptive prevalence rate is less than 10 percent among married women (Snow et al., 2015).

SSA has a very large young population. In fact, 41 of the 42 countries in the region have a median age less than or equal to 25 (Prata et al., 2013). A large proportion of the population will soon reach sexual debut and be exposed to the risk of unintended pregnancy as they enter their reproductive years (Jacobstein et al., 2009). Seventy five percent of women report having sexual intercourse prior to age 20 (Williamson et al., 2009). Among sexually active adolescent females who are unmarried, mC use is between 20 and 40 percent, and unmet need between 50 and 65 percent. Among the same population that is married, mC use ranges from 10 to 35 percent, while unmet need is generally lower at 15 to 60 percent (Chandra-Mouli et al., 2014). The adolescent birth rate is 98 births per 1,000 women, almost double the world average of 50 (You et al., 2015). In fact, 44 percent of unintended births in SSA occur among women ages 15 to 24 (Hubacher et al., 2008). Unsafe abortions rates are highest among those under the age of 20, accounting for 57 percent of total unsafe abortions performed in the region (Prata et al., 2013).

Due to shared cultural norms that promote large families, SSA women have expressed interest in using mC as a measure more strongly desired for spacing rather than limiting total births (Cleland & Machiyama, 2015; Hubacher, Olawo, Manduku, & Kiarie, 2011; Westoff, 2012). In 2005 to 2012, among married women ages 15 to 49 in 18 SSA countries, 84 percent of mC methods used were short-acting, while just 16 percent were long-acting and permanent methods (LAPMs) (Darroch & Singh, 2013). Among married women, the two most commonly used mC methods are injectables (25 percent), which increased by a factor of three from 1984 to 2005, and the oral contraceptive (19 percent) (Seiber et al., 2007). Use of the copper IUD and LNG-IUS is lowest in SSA; prevalence rates typically range from one to three percent (Vernon et al., 2007; Seiber et al., 2007). One study of adolescents from 18 SSA countries reported a strong preference for oral contraceptive pills (31 percent) and injectables (40 percent) among current nonusers, with just 0.9 percent interest in the IUD, and 2.4 percent in the implant (McCurdy et al., 2014). Generally, a far greater proportion of women in SSA report knowledge of short-acting mC, and overall use of LARC has seen a steady decline since the 1980s when it was more popular thanks to national promotional campaigns (Melngailis & Eber, 2006; Seiber et al., 2007).

Reliance on traditional methods (e.g., withdrawal, abstinence) and short-acting mC that are more prone to failure from incorrect or inconsistent use means that the risk of unintended pregnancy for women in SSA is high (Family Health International, 2010; Mbizvo & Phillips, 2014; Sullivan et al., 2006). Women in SSA are not given the opportunity to consider all forms of mC before deciding upon the most appropriate method for their fertility preferences. A low mC prevalence rate, combined with high unmet need in SSA, points to the region's limitations in providing comprehensive FP services.

2.2 THE IMPORTANCE OF FAMILY PLANNING IN DEVELOPMENT

Family planning is immediately relevant to development because it influences the birth rate and population growth rate of a country, and therefore has far reaching impacts on economic, social, and environmental well-being in society (Fabic et al., 2015; WHO, 2015a). Sound development policies recognize not only the importance of investments in population health and education, but in FP programs as well to provide information and access to mC so that couples can achieve their fertility preferences.

In 1999, the Centers for Disease Control and Prevention (CDC) named family planning one of the ten greatest public health achievements of the century, for not only health, but also social and economic benefits for both woman and family (Tsui et al., 2010). Research from various studies finds FP interventions to be highly cost-effective as they reduce the future health care costs associated with unintended pregnancies and the transmission of sexually transmitted infections (STIs) and HIV/AIDS (Tsui et al., 2010). Global data suggest that the increase in mC use within the past six decades in developing countries is responsible for 75 percent of the fertility decline seen there (Cleland et al., 2012). In 2008, mC use prevented 250,000 maternal deaths secondary to unintended pregnancy. Maternal deaths could be reduced by an additional 30 percent if all the women living in the developing world were able to access mC (Cleland et al., 2012). Using FP methods to properly space births could result in a ten percent reduction in child deaths (Cleland, 2009). Seventy five percent of the eight million unsafe abortions that occurred in 2008 in women ages 15 to 24 could have been prevented had access to mC been available (Krashin et al., 2015).

2.2.1 Maternal and Child Health

In the developing world, gains in FP and SRH have been tremendous over the past few decades; between 1990 and 2013 the maternal mortality rate decreased from 380 to 210 per 100,000 live births, a 45 percent reduction (Snow et al., 2015).

There are two primary ways in which family planning reduces maternal and infant mortality: (1) it reduces the rate of unintended pregnancy and secondary complications from birth, miscarriage, and abortion; and (2) it reduces the associated risks of pregnancies that are “too early, too late, too many, [or] too close” (Brown, Ahmed, Roche, Sonneveldt, & Darmstadt, 2015, p. 339). Women are considered at higher risk for maternal and child mortality if they become pregnant at a certain age (i.e., younger than 18 or older than 35), have had more than three previous pregnancies, and have had their previous pregnancy less than 24 months prior to the current one (Brown et al., 2015). Essentially, the more births a woman has over her reproductive lifespan puts her at an increasingly higher risk as she ages and her body repeatedly weathers the process of pregnancy and birth.

For the infant, spacing pregnancies by a safe interval (recommended 24 months) decreases the risk of premature birth and low birth weight (Cleland et al., 2012). Children born less than two years apart from one another have a 60 percent greater chance of dying in infancy than those who are greater than two years apart in age (Cleland et al., 2012). Childhood stunting and chronic undernourishment also increases with shorter birth intervals (Maternal & Child Health Integrated Project, 2013). Improving child survival through safe spacing and reducing risky pregnancy is described as a powerful stimulant for fertility decline, as parents no longer feel the need to have more children to protect and ensure against potential future child deaths (Casterline, 2010). Child survival also increases when a woman has fewer children as the risk of

infectious disease transmission decreases, and there is less competition over shared household resources including food, health care, and nurturing (Brown et al., 2015).

2.2.2 Educational Achievement

Improved FP and SRH care results in increases in children's schooling, as well as the ability for women to continue their own education (Singh et al., 2014). Children from poorer and larger families often complete less schooling, as the parents cannot provide the necessary resources (e.g., uniforms, textbooks) to enroll all their children (WHO, 2015a). Improved FP and SRH care means that there will be fewer dependent children per working-aged adult, thereby increasing household resources that each family can dedicate to their children (Singh et al., 2014). Societies with a large youth population also experience poor quality of schooling due to reductions seen in national spending per student (Casterline, 2010). Essentially, the government in a developing country has a finite and limited amount of funding reserved for national educational programming. Public sector provision of primary and secondary education can be overwhelmed if the country's youth population is so large that the state cannot support the expenditures needed to adequately cover the cost of each student's schooling (e.g., teacher's salary, school infrastructure, classroom supplies).

2.2.3 Poverty Alleviation

A high fertility rate means that mothers are expected to stay at home and tend to the many children and households responsibilities, lessening their economic productivity and ability to participate in the workforce. Countries with high population growth rates have a very large

number of young people, or so-called dependents, which are a net drain on a country's productivity (Singh et al., 2014). Population pressures overwhelm social services and health, education, and public infrastructure systems and can push families into further poverty (Bongaarts, 2015; Singh et al., 2014).

The long-term benefits of investment in FP and SRH include GDP growth and poverty alleviation through gains in women's earnings, household savings, and assets (Singh et al., 2014). When women are able to access FP services and delay childbearing until desired, they are more likely to escape poverty for themselves and their families through meaningful participation in income-generating activities (Mbizvo & Phillips, 2014). One WHO study in 2013 found that a five dollar increase in SRH expenditure per person in 74 countries with very high maternal and child mortality could produce nine times that amount in economic benefits through heightened worker productivity (Singh et al., 2014). With fewer children, parents can invest more money and time in health, education, and nutrition that influence a child's overall development, educational success, and income later into adulthood (Canning & Schultz, 2012). In SSA, where land is often inherited by sons from their fathers, fewer children means more land to inherit per child, ensuring higher crop yields per family in the future. Fertility decline also means that land used for agricultural purposes can be appropriately sustained and will not be over-used or exploited (Casterline, 2010).

2.2.4 Female Empowerment

Participants in the 1994 International Conference on Population and Development (ICPD) strongly promoted the right of couples and individuals to determine the size and timing of their own families. The ICPD stressed that individuals should be provided with necessary FP and

SRH information, and reproductive decisions should be free from discrimination, coercion, and violence (United Nations Population Fund, 2008). SRH rights are fundamental to an individual's well-being (Cleland, 2009; Singh et al., 2014). Access to FP services that offer mC furthers gender equality by “freeing women from an incessant cycle of pregnancy, breastfeeding, and child care” (Cleland et al., 2012, p. 154). Women's autonomy and self-esteem are improved as they are able to determine, frequently with their partner's input, their desired number of children and when in life to have them (Singh et al., 2014). FP furthers gender equality by improving a woman's general position and status in the social and economic affairs of her community (Canning & Schultz, 2012). With fewer childrearing responsibilities at home, she is free to venture out into the world and involve herself in economic, social, or other pursuits she so chooses.

2.3 MODERN METHODS OF CONTRACEPTION

Contraception includes the use of particular sexual practices, devices, chemicals, or surgical procedures to intentionally prevent conception. Contraception should maximize comfort and privacy, while minimizing cost and health side effects (Jain & Muralidhar, 2011).

Major forms of mC can be divided based on their length of protection: short- or long-term, and permanent. It is important to note that efficacy of mC varies based on differences in the typical and perfect use failure rates. Typical use refers to the probability of pregnancy in one year with users who follow different rates of adherence, while perfect use entails the probability of pregnancy in one year with users administering the method correctly and consistently every time (AAP, 2014). All mC methods are more efficacious under perfect use conditions; however

it is more common for the user to approach the higher typical use failure rate, as mistakes in using the various methods are common (Boonstra, 2013).

The most efficacious forms of mC require the least degree of user adherence; that is to say, how much involvement the individual must have in using the method (AAP, 2014). As such, long-acting and permanent methods (LAPMs) are inherently more efficacious than short-acting mC due to the lower level of action required by the user to keep the method performing as needed (Blumenthal et al., 2011). In fact, the American College of Obstetricians and Gynecologists (ACOG) states that long-acting methods are 20 times more effective than short-acting methods including the pill, patch, and ring over the long term (ACOG, 2014).

In addition, traditional methods not included in this discussion but widely used are withdrawal (i.e., *coitus interruptus* or “pull out method”), abstinence, fertility awareness/calendar-based methods, and lactation amenorrhea method (i.e., breastfeeding as birth control).

2.3.1 Short-Acting Reversible Contraception

Short-acting reversible contraception provides continuous protection against pregnancy for any amount of time less than one year in length. There are two major categories: (1) non-hormonal barrier methods that provide protection for just one sex act; and (2) hormonal methods that protect for anywhere from one to three months’ time.

2.3.1.1 Non-Hormonal Methods

Short-acting non-hormonal barrier methods include the male and female condom, diaphragm, and contraceptive sponge. Most of these methods are used in combination with a spermicidal

agent to prevent the sperm from successfully moving from the vagina into the uterus and beyond. As the name suggests, barrier methods work by creating a physical barrier between the sperm and unfertilized egg. Unlike hormonal methods, these forms do not prevent ovulation nor do they thicken the cervical mucus, making it more difficult for the sperm to reach the egg. It is important to note that the male and female condoms are also effective in the prevention of STI and HIV transmission (WHO, 2015a). None of the hormonal methods have this added advantage. While the condom and sponge can be purchased without medical consultation, the diaphragm must be fitted to the size of the cervix, requiring at least one visit to a medical provider prior to use. Users must also be aware of any personal allergies they may have to latex or other plastics or chemicals used in spermicides, which would preclude them from using such methods (Planned Parenthood Federation of America, 2014f).

Generally, non-hormonal methods have higher typical and perfect use failure rates due to frequent errors in user adherence. Efficacy is directly related to correct and consistent usage; problems arise if users do not know how to properly place the method in or on their body, or forget to use it each time they have sexual intercourse. Still, individuals may choose to use these methods, as they do not interfere with the body's natural hormone levels. For some, the use of hormonal methods induces uncomfortable side effects that they are unable to tolerate or accept (AAP, 2014).

The male condom is one of the more frequently used non-hormonal mC methods by both men and women. This condom is referred to as "male" because it is a latex sheath that is unrolled over the male external genitalia (the penis) (Jain & Muralidhar, 2011). Advantages to using this method include its low cost, ease of accessibility for youth, and involvement of male partners in contraception (AAP, 2014). However, this method has a much higher typical use

failure rate (18 percent) compared to hormonal methods because it must be correctly used for each sex act, which is difficult as various individual and interpersonal level factors make it challenging for perfect user adherence (AAP, 2014). Generally, medical providers stress the importance of practicing dual contraception; that is to say, using a barrier method in addition to a hormonal method to most effectively prevent pregnancy and STI/HIV transmission (WHO, 2015a).

The female condom is similar to the male condom in form and function, except for the difference of placement. This condom is a polyurethane sheath meant to provide a barrier between sperm and egg, but is placed inside the female internal genitalia (the vagina). The female condom has a set of firmer plastic rings; the one at the closed end is inserted into the vagina and sits snugly at the top of the cervix, while the other is purposely left outside the vaginal opening during intercourse (Jain & Muralidhar, 20011). Female condoms have a higher typical use failure rate than male condoms (21 versus 18 percent), and are generally less popular than their male counterpart (AAP, 2014).

The diaphragm is a silicone cup that is inserted into the vagina prior to intercourse, and works by covering the cervix. This method requires a visit to a medical provider to be properly fitted. It is typically used in conjunction with a spermicide that is applied to the inside and rim of the diaphragm. It can be inserted hours before intercourse, which makes it more discreet than other non-hormonal methods. It must also be kept in the vagina for at least six hours (but no more than 24 hours) after intercourse, to ensure that sperm are unable to enter the uterus. Users must become comfortable with the insertion and removal of the diaphragm, and must keep it clean to prevent infection. As mentioned, diaphragms come in different sizes that are unique to each woman's body, and may need to be resized after childbirth and other bodily changes. A

diaphragm can last for up to two years (PPFA, 2014f). Typical use failure rates are moderate at 12 percent (AAP, 2014).

The contraceptive sponge is a circular foam sponge that has been impregnated with spermicide. It is wetted and inserted into the vagina prior to intercourse, and works by creating a barrier over the cervix while preventing sperm motility. The sponge must also remain in the vagina for at least six hours after intercourse (but no more than 30 hours). The sponge does not require the user to see a medical provider for a prescription or fitting. However, the sponge can be used only once before it must be thrown away (PPFA, 2014d). Typical use failure rates depend on the user's parity; for nulliparous women the failure rate is 12 percent, while for parous women it is a relatively high 24 percent (AAP, 2014).

2.3.1.2 Hormonal Methods

Short-acting hormonal methods include the combined oral pill, transdermal patch, vaginal ring, and DMPA injectable. These methods prevent ovulation and thicken cervical mucus, making it more difficult for sperm to permeate the cervix and reach the uterus. All of these methods share common side effects within the first few months of use: irregular bleeding (i.e., spotting), nausea, headache, dizziness, breast tenderness, weight gain or loss, and changes in libido and mood. These methods also provide non-contraceptive benefits to users including improvements in acne, reduction in the duration and heaviness of menstrual bleeding, and lessening of cramps and other symptoms of premenstrual syndrome (PMS). Users also enjoy their discreet nature compared to the potentially disruptive nature of using non-hormonal barrier methods prior to sexual intercourse (PPFA, 2014a; 2014b; 2014c; 2014e).

With short-acting hormonal methods, a user can have greater peace of mind against unintended pregnancy, but still needs to use a barrier method to prevent STI/HIV transmission

(WHO, 2015a). Backup barrier methods (e.g., male or female condoms) must also be used within the first week after starting a hormonal form of mC to prevent pregnancy while the body adjusts. Typical use failure rates for all of these methods, save the DMPA injectable, are at 9 percent. The injectable has a slightly lower typical use failure rate at 6 percent (AAP, 2014).

Combined oral contraceptive pills include a combination of progestin and estrogen hormones that are ingested and absorbed into the bloodstream (WHO, 2015a). If the user is sensitive to estrogen, a progestin-only pill is available. Users must remember to take the pill around the same time every day; efficacy may be compromised if they skip a dose or are unable to keep it in their digestive system long enough for the hormones to be properly absorbed (Jain & Muralidhar, 2011). Pill packs typically come in a 28-day formulation; three weeks are active hormone pills, and one week contains placebo pills that may be fortified with iron. This placebo week is when the user will experience withdrawal bleeding from the dip in hormone levels before beginning a new pill pack for the following cycle (PPFA, 2014b).

The transdermal patch also contains a combination of estrogen and progestin hormones, infused into a square adhesive patch and placed on the user's stomach, shoulder, upper arm, or lower back for three consecutive weeks (AAP, 2014). This is followed by one week when the patch is removed, with the user experiencing withdrawal bleeding, before beginning a new cycle by placing a fresh patch on the skin. The hormones contained on the patch are slowly released over the course of three weeks, being absorbed through the skin and into the bloodstream in the same manner as other hormonal methods (PPFA, 2014a). Users must keep the patch firmly affixed to the skin for the duration of the cycle; efficacy can be compromised if it is not kept in its proper place. Unique side effects of the patch include adverse dermatologic responses to the adhesive or medication being kept in contact with skin (AAP, 2014).

The vaginal ring contains another combination of estrogen and progestin hormones, this time impregnated into a flexible plastic ring and inserted into the vagina where it stays for three consecutive weeks while releasing hormones. It is removed for one week, during which time the user experiences withdrawal bleeding, before beginning a new cycle with a new ring (AAP, 2014). Users must be aware of how to properly insert the ring into the vagina for best fit; movement and expulsion may be possible during sexual intercourse and other daily activities. Still, users report that their partners generally cannot feel the ring during intercourse and it is highly discreet. However, if the ring does come out, the user can simply clean and reinsert it into the vagina within 48 hours to maintain its efficacy (PPFA, 2014e).

Progestin-only injectables require that the user receive a single injection, typically in the upper arm, every 12 weeks. The injection provides very effective contraception for three months' time with no daily or weekly adherence rituals like the pill, patch, or ring require (PPFA, 2014c). This form of short-acting hormonal mC requires the least degree of user adherence, and has a typical use failure rate (6 percent) lower than all other short-acting hormonal methods (AAP, 2014). However, the method requires that the user visit a medical provider to receive the injections at a routine interval, or else the efficacy of the shot may be compromised.

2.3.2 Long-Acting Reversible Contraception

Long-acting reversible contraception (LARC) provides continuous protection from pregnancy for more than one year's time, without active user adherence, and includes the progestin implant (i.e., two-rod implants Jadelle and Sino-implant, and one-rod implant Implanon and Nexplanon), copper intrauterine device (IUD), and levonorgestrel intrauterine system (LNG-IUS) (Espey &

Ogburn, 2011; Jacobstein, 2007). The two hormonal forms of LARC, the progestin implant and LNG-IUS, have mechanisms of action that are similar to short-acting hormonal mC (i.e., thickens cervical mucus, reduces sperm motility, prevents ovulation). LARC methods have grown in popularity in the developed world as the safest and most effective methods of reliable contraception among women looking to avoid an unintended pregnancy (Hathaway et al., 2014). LARC is praised for having both low failure rates and high continuation rates, making it second only to permanent methods (i.e., male and female sterilization) in this regard (Espey & Ogburn, 2011). LARC methods are also far more cost-effective over the long term, as opposed to other more commonly delivered forms of hormonal contraception that are more prone to incorrect or inconsistent use (Family Planning 2020, 2015b).

LARC methods have typical use failure rates that approach perfect use failure rates, as user adherence is guaranteed once inserted (Doyle, Stern, Hagan, Hao, & Gricar, 2008; Pile et al., 2007). LARC methods do require a visit to a trained medical provider for screening, insertion, and removal (Blumenthal et al., 2011). Even so, LARC provides continuous contraception for up to ten years, and can be easily inserted by a medical provider after birth, miscarriage, or abortion, when women are already present at a health center (Bluestone, Chase, & Lu, 2006). In fact, insertion and removal procedures can be undertaken in a single medical visit, with most procedures taking just a few minutes, and can occur during any time in the menstrual cycle (Espey & Ogburn, 2011).

LARC is appropriate for most women, meaning that adolescents and women who are breastfeeding, HIV positive, and nulliparous are typically able to use this form of mC (Family Planning 2020, 2015b). LARC is discreet (i.e., no one can tell you are using it), and does not interfere with sexual intercourse or other daily activities. Once a LARC method is removed, a

woman's fertility will return within weeks to months thereafter (ACOG, 2014; Gold & Johnson, 2008). LARC methods have few contraindications, meaning that most women are eligible to use them (ACOG, 2011). Still, medical providers should consult the WHO and CDC guidelines that dictate medical eligibility criteria (MEC) for LARC method use (Jacobstein, 2007). Generally, implants are considered a "Category 1" under the MEC, meaning that there are no restrictions on use. The IUD and LNG-IUS are also rated "Category 1" (no restrictions) or "Category 2" (generally recommended) for most women (Family Planning 2020, 2015b). To protect against the transmission of STIs or HIV/AIDS, LARC users must use a barrier method (e.g., male or female condom), as the LARC device itself does not provide this type of protection (Boonstra, 2013). See Appendix B for a table comparison of the differences between LARC methods.

2.3.2.1 Progestin Contraceptive Implant

The contraceptive implant is a plastic single or double rod device just 4 cm in length and 2 mm in diameter that comes in a preloaded and disposable applicator (ACOG, 2011). Rods contain the progestin etonogestrel that is released into the bloodstream (Reproductive Health Supplies Coalition, 2013). Insertion involves a very minor surgical procedure, in which an incision is made in the inside of the upper arm to deposit the device using the preloaded applicator (Ladipo & Akinso, 2005). The implant works similar to the ring, patch, and injectable, by suppressing ovulation and thickening cervical mucus (Jain & Muralidhar, 2011). Implants provide three to five years' worth of protection, and are easily removed by having another brief surgical procedure completed by a trained medical provider (ACOG, 2014). This method is the most effective LARC method with typical and perfect use failure rates of 0.05 percent. Discontinuation rates are low; women who do choose to have the device removed typically do so because of the common side effect of unpredictable bleeding (AAP, 2014).

Complications during insertion are uncommon, but may include difficulty in completing the procedure correctly, pain, bleeding, and hematoma (ACOG, 2011). If the device is broken or migrates in the arm, the removal process may also be complicated. Common side effects include irregular bleeding and other hormonal side effects including headache, nausea, breast tenderness, and mood changes that may last for a few months following insertion (ACOG, 2014). Irregular bleeding is the most cited reason for discontinuation of this method in the first year (Blumenthal et al., 2011). Non-contraceptive benefits include lighter or altogether absent periods, relief from dysmenorrhea, and prevention of anemia (Espey & Ogburn, 2011). The WHO recently released a statement claiming no restriction for the use of progestogen-only implants for women living with HIV/AIDS and on antiretroviral therapy (ART) (WHO, 2015b). This is encouraging news for SSA, where HIV/AIDS prevalence rates are upwards of 10 to 25 percent in some countries.

2.3.2.2 Copper Intrauterine Device (IUD)

The copper IUD is a small T-shaped plastic device wrapped with a copper wire that is inserted into the uterus by a trained medical provider following a pelvic exam (Patel, 2014). It is the only hormone-free LARC method (Bluestone et al., 2006). The device releases copper ions that inhibit sperm motility and viability, and damages or altogether destroys the egg (ACOG, 2011). The Food and Drug Administration (FDA) approves the copper IUD for 10 years of effective protection against pregnancy. Both typical and perfect use failure rates are well below one percent (0.8 and 0.6 percent respectively) (Gold & Johnson, 2008). Common side effects include post-insertion bleeding, pain, and abdominal cramps, followed by three to six months of irregular bleeding. Women may experience heavier periods and worse PMS symptoms after insertion (ACOG, 2014). Heavier periods and dysmenorrhea are the most cited reasons for discontinuation in the first year (Gold & Johnson, 2008). The copper IUD can be used as

emergency contraception in certain scenarios. Research has also shown its use has a protective effect against endometrial cancer (Espey & Ogburn, 2011). The WHO supports the use of the copper IUD among women who are HIV positive and on ART (Bluestone et al., 2006). MEC usually does not recommend its use among women with confirmed AIDS (Espey & Ogburn, 2011).

2.3.2.3 Levonorgestrel-releasing Intrauterine System (LNG-IUS)

The LNG-IUS is a small T-shaped piece of plastic impregnated with levonorgestrel hormones on the stem. Following a pelvic exam, the LNG-IUS is inserted into the uterus, where hormones are slowly released into the bloodstream (Patel, 2014). Its mechanism of action against pregnancy is the same as the copper IUD; additionally, it thins the endometrial lining and thickness cervical mucus, also inhibiting sperm motility (ACOG, 2011). The FDA approves the LNG-IUS for up to five years of protection. Its typical and perfect use failure rates (0.2 percent) are even below that of the copper IUD. Side effects include post-insertion bleeding, pain, and cramps, in addition to commonly experienced hormonal side effects (e.g., headache, nausea, breast tenderness) that may last for a few months following insertion. However, many women with the LNG-IUS will have lighter periods, and some may stop menstruating all together (ACOG, 2014). LNG-IUS is also recognized as effective in treating menorrhagia, anemia, and pain associated with endometriosis (Gold & Johnson, 2008; Greene & Stanback, 2012). Altered bleeding patterns and pain are the most cited reasons for discontinuation of this method in the first year (Blumenthal et al., 2011).

MEC supports the use of LNG-IUS among women who are HIV positive and on ART; it is not usually recommended for use among women with confirmed AIDS cases (Espey & Ogburn, 2011). It is important to note that while many women are fearful of the IUD and LNG-

IUS perforating the uterus and causing severe health complications, the event is extremely rare (Patel, 2014). In fact, the likelihood of perforation is less than one per 1,000 insertions (ACOG, 2011). The expulsion rate (i.e., how frequently the device is expelled from the uterus) ranges from 2 to 10 percent in the first year of use (ACOG, 2014).

2.3.3 Permanent Methods

Permanent methods include female and male sterilization (i.e., tubal ligation and vasectomy) that are non-reversible in nature. Such procedures are suggested for those who have decided that they are ready to stop having children after reaching a desired family size.

During tubal ligation, the fallopian tubes are cut, preventing an unfertilized egg from meeting sperm (Jain & Muralidhar, 2011). The operation can be completed with no incision (i.e., hysteroscopy) or with minimal incisions made on the lower abdomen (i.e., laparoscopy). Women will still experience menstruation and hormone levels are not affected by this procedure (PPFA, 2014g). During a vasectomy, the vas deferens are blocked, meaning that sperm cannot travel from the testicles into the seminal vesicle, preventing egg fertilization. The procedure is minimally invasive; the incision made on the scrotum is very small, and a no-scalpel technique exists (PPFA, 2014h). There is no interference with the ability to have an erection or ejaculate; the only difference following a vasectomy is that the semen will not contain sperm (Jain & Muralidhar, 2011).

3.0 METHODS

To identify relevant FP interventions related to LARC provision in SSA, a literature search was conducted from December 2015 to January of 2016. Searches were conducted for published and peer-reviewed studies in the following electronic databases: POPLINE, PubMed, Ovid, Scopus, PsycINFO, and Google Scholar. Keywords used to search these database included Sub-Saharan Africa; Africa; reproductive health; sexual health; sexual health behavior; family planning; family planning programs; contraception; contraceptive implant; intrauterine device; levonorgestrel intrauterine system; pregnancy; unintended pregnancy; fertility.

Additionally, the “grey literature” of non-academic work was accessed through searches of relevant FP reports found on the websites of major health INGOs. These organizations included Family Health International (FHI) 360, Population Services International (PSI), Marie Stopes International (MSI), EngenderHealth, Jhpiego, PATH, Pathfinder International, Save the Children, the WHO, the United States Agency for International Development (USAID), the United Nations Population Fund (UNFPA), and the World Bank. Proceedings from international meetings on FP and SRH, including the 2012 London Summit on Family Planning and the Family Planning 2020 global partnership, were also reviewed for their value.

Articles met the inclusion criteria of this search if they were written in English and published between the years 2000 and 2015, reported substantive qualitative or quantitative information on service delivery and behavioral health communication outcomes related to a FP

intervention located in a country or countries within SSA, and specifically targeted women of reproductive age who had not previously considered or had access to LARC. Exclusion criteria included any interventions not published in the English language, not taking place in SSA, and not seeking to introduce LARC methods to women of reproductive age.

Initial screening for potentially relevant articles involved reviewing the title and abstract. Based on initial review, many articles were excluded due to their inability to meet the selection criteria. Articles that passed preliminary screening were further examined in full text and considered for ultimate selection in the literature search. Thirty articles passed initial review and were further assessed in their full text. Ten of these 30 were eliminated due to their inability to meet the selection criteria (see Appendix A). Twenty articles detailing ten family planning interventions in 16 countries in SSA ultimately met the inclusion criteria and were included in the literature review (see Appendix A).

4.0 RESULTS

Twenty articles, covering ten interventions in 16 SSA countries met selection criteria for this paper. Seven of the ten focused on IUD provision exclusively. Just one intervention focused on the contraceptive implant, and the remaining two on both IUD and contraceptive implant provision. Intervention outcomes are summarized in Table 1.

Table 1: Summary of Intervention Outcomes

1. Kenya, National Campaign, 2003–2006	<ul style="list-style-type: none">• IUD insertion doubled over implementation period
2. Guinea, Mandiana District, 2004	<ul style="list-style-type: none">• IUD insertion increased five fold over implementation period
3. Guinea, Sigiri District, 2004–2006	<ul style="list-style-type: none">• IUD insertions increased nine fold over implementation period
4. Uganda, Four Districts, 2005–2006	<ul style="list-style-type: none">• Provided 1,597 clients with a LAPM, but just 41 IUD insertions over implementation period
5. Kenya, Kisii District, 2005–2007	<ul style="list-style-type: none">• IUD insertion increased by 734 percent (58 up to 484 insertions) over implementation period
6. Ethiopia, Amhara Region, 2005–2007	<ul style="list-style-type: none">• IUD insertion increased by 86 percent (182 up to 338 insertions) over implementation period
7. PSI, Six Countries, 2009–2010	<ul style="list-style-type: none">• Provided over 175,000 women with IUD over implementation period
8. Ethiopia, Four Regions, 2009–2013	<ul style="list-style-type: none">• Provided over 45,000 clients with contraceptive implant over implementation period
9. Zambia, Four Provinces, 2008–2009	<ul style="list-style-type: none">• Provided 33,609 women with LARC method over implementation period
10. MSI, 15 Countries, 2008–2012	<ul style="list-style-type: none">• IUD insertions more than doubled, and implant provision increased nine fold, totaling 1.7 million implants inserted over five years' time

4.1 INTERVENTIONS FOR IUD PROVISION

Seven interventions focused on IUD provision exclusively, and were implemented between 2003 and 2013. Countries represented include Kenya, Guinea, Uganda, and Ethiopia, and the SSA regional program under PSI.

Four of the seven interventions were conducted by the ACQUIRE (Access, Quality, and Use in Reproductive Health) Project, a five-year \$150 million global initiative designed by USAID's Office of Population and Reproductive Health to improve and increase use of SRH and FP services, focusing particularly on providing LAPMs (Jacobstein, 2007). USAID awarded the INGO EngenderHealth with the contract lead in 2003, with partnership assistance from the Adventist Development and Relief Agency International (ADRA), CARE, IntraHealth International, Inc., Meridian Group International, Inc., and the Society for Women and AIDS in Africa (SWAA) (Taylor, 2008a). The ACQUIRE Project took place in Guinea, Uganda, Kenya, and Ethiopia. It had three program priorities: (1) increase FP choices and services available to clients; (2) increase client, provider, and community participation in FP; and (3) increase service site participation offering SRH and FP services (Jacobstein, 2007). The ACQUIRE Project used its own Supply-Demand-Advocacy (SDA) program model to increase access, quality, and use of LARC methods. The SDA model views all three components (i.e., ready supply, demand for services, and positive policy environment through advocacy) as necessary starting points for successful FP programming and client-provider interactions (Taylor, 2008b).

4.1.1 Kenya, National Campaign, 2003–2006

While the overall proportion of married Kenyan women using mC rose over the past three decades, use of the IUD dropped from 31 percent of the mC method mix in 1984 to just 8 percent in 2003 (FHI, 2006). The Kenyan Ministry of Health (MoH) led a national campaign from 2003 to 2006 in collaboration with major health INGOs that included FHI 360 and EngenderHealth's AMKENI project (FHI, 2006). The MoH wanted to reintroduce the IUD into the mC method mix to provide a more balanced national FP program. Major campaign objectives included: (1)

increase public support for the IUD among various stakeholders (e.g., providers, clients, policy makers); (2) increase high quality IUD service delivery; and (3) increase public demand for the IUD (FHI, 2006).

FHI 360 had previously conducted national assessments in 1995 on client and provider knowledge and attitudes towards the IUD. These assessments proved helpful in understanding why the IUD had declined in use over the past decade and served as the basis for the national advocacy and education campaign (FHI, 2006).

In regards to strengthening service delivery, the MoH first updated the national SRH training curriculum, which FHI 360 has determined to be out of date. This curriculum was used to train 171 providers in IUD insertion, removal, and counseling. The *Kenya Family Planning Guidelines for Service Providers* was also revised and incorporated newly updated WHO criteria for mC use. FHI 360 tested an IUD screening tool with providers that functioned as a streamlined checklist to easily determine if clients meet the MEC for IUD use. The MoH formed training and supervision teams at the provincial and district levels that were sent to supervise the pilot health facilities. These teams built capacity through ensuring that pilot facilities receive sufficient supplies and training, including IUD kits that contained the standard supplies needed for performing the procedure (FHI, 2006). The AMKENI project distributed 600 kits with IUD insertion and removal supplies by working with USAID and John Snow, Inc.'s DELIVER Project. Campaign reliance on sporadic donor funding, unreliable transport services, and poor record keeping all made securing a ready supply of IUDs a great challenge (FHI, 2006). FHI 360 hoped the Kenyan government's intent to write a line item into the national budget for FP supplies could ameliorate this campaign struggle.

To address bias and misinformation at all levels, the MoH launched a national advocacy campaign by working with medical professional associations to write policy briefs geared towards educating policy makers and providers. These briefs were given to 2,600 individuals, and 400 attended subsequent district level IUD reintroduction meetings (FHI, 2006). Advocacy efforts also included hosting provincial and national professional development and continuing medical education (CME) events that focused on the benefits of the IUD. The AMKENI project led IUD “reintroduction meetings” in addition to insertion and removal training for its supported facility staff (FHI, 2006).

A communication campaign sought to address potential client misinformation and provoke greater demand for IUDs. The AMKENI project employed 500 behavior change communication (BCC) agents, who were community volunteers trained to provide IUD information through interpersonal means. BCC agents held community meetings with men’s, women’s, and youth groups, reaching over 12,000 people and distributing 21,000 health education brochures (FHI, 2006). The intervention was successful in increasing the number of sites that could provide IUDs from 18 to 68 over two years’ time. The intervention also led to a doubling of new IUD users accessing services at 97 AMKENI supported facilities (FHI, 2010).

4.1.2 Guinea, Mandiana District, 2004

The eight-month intervention in the Mandiana district of Guinea was a collaborative effort between Save the Children, the Guinean MoH, and FHI 360 (FHI, 2010). Major intervention objectives included: (1) increasing awareness and support for the IUD; (2) improving IUD service delivery; and (3) expanding access to IUD services (FHI, 2008). Save the Children had worked in the region since 1997, and recognized that many district women did not have access to

health facilities with FP services. Low awareness and misinformation about the IUD was common among both women and providers (FHI, 2008).

Save the Children began first by forming partnerships with various stakeholders including religious and community leaders and local NGOs, asking for their recommendations on IUD expansion in the district (FHI, 2010). “Advocacy days” were designed to inform and gather support for the IUD among these various community level leaders (FHI, 2008). Over the eight-month period, nine public awareness campaigns brought messages to district villages about the benefits of IUDs. These messages were included in community organized plays and folklore rituals, in addition to local radio spots that featured IUD promotional messages, songs, and satisfied user testimonials (FHI, 2008). Passionate community members were selected on the basis of previous FP promotion, and trained as BCC agents to engage potential clients and offer referrals to clinics that provided FP services. These agents also held weekly village meetings where they spoke about the benefits of the IUD (FHI, 2008).

The INGO EngenderHealth trained district level providers and health department supervisors in IUD insertion and removal, FP counseling, and infection prevention techniques (FHI, 2010). To manage and assist these trained providers, a supervision team was created. Save the Children worked to improve service delivery at four total district locations: two existing urban health center sites (where IUD services had previously been weak) and two new rural sites where IUD provision had never been available (FHI, 2008). Additionally, the intervention was able to strengthen FP counseling and IUD referral services at nine more sites.

In total, women from 113 villages benefitted from the intervention and IUD insertion increased by a factor of five in the four chosen locations (FHI, 2008). Follow-up monitoring found that IUD use remained high 15 months after the brief intervention ended, and providers

were maintaining international standards for IUD insertion and removal, in addition to the necessary supplies to perform the procedure (FHI, 2008).

4.1.3 Guinea, Siguiri District, 2004–2006

Use of LAPMs in Guinea has historically been limited. In partnership with the Guinean MoH, the ACQUIRE Project employed its Supply-Demand-Advocacy (SDA) program model to increase both awareness and access to LAPMs, and improve MoH capacity to provide the IUD in the Siguiri district (The ACQUIRE Project/Engender Health, 2008).

Supply side activities included training providers in the provincial hospital and six additional health centers in IUD insertion and removal, FP counseling, and infection prevention techniques (The ACQUIRE Project/EngenderHealth, 2008). The ACQUIRE Project described its training as a “whole site approach,” conducted with the entire site team (e.g., providers, administrators, staff), where needs are determined using a self-assessment tool, and supervision accompanies instruction (Taylor, 2008b). This method was thought to be more sustainable than training individuals, as the site team could still deliver services if someone was off-duty or absent. The ACQUIRE Project also assisted in developing and distributing useful clinical tools including job aids and standards of practice. Although no formal training of trainers was conducted, trainees were encouraged to share their knowledge with others (Taylor, 2008b).

To better understand its audience, project staff conducted client interviews and focus groups in urban and rural locations with men’s and women’s groups, religious leaders, and providers. Results showed positive attitudes towards using mC for spacing, but not limiting childbearing, as the Guinean culture (and prior government regimes) had stressed the importance of large families (Escandon, Diallo, Toure, Mach, & Bunce, 2006). The research also found that

health care workers, who were seen as trusted sources of information, heavily influenced women's FP decision-making. Results from this preliminary research informed the later communication campaign and community outreach activities (Escandon et al., 2006).

A Guinean advertising agency was hired to develop the creative concept for the communication campaign, which was pre-tested among focus groups of varying demographics. The chosen key message that tested well with groups translated to “an ideal contraceptive for spacing births” (Taylor, 2008b). The primary audience of this campaign was married women ages 25 to 40, while the secondary audience included married men with multiple wives, providers, and religious leaders. Communication outputs included 500 print posters, 2,700 brochures, and radio programs; imagery included a traditional Muslim family, a wealthy modern family, and a lone woman all communicating support for the IUD. The campaign stressed the effective and discreet nature of the IUD, ease of use, duration of use, and minimal side effects. Combinations of the local languages and national language (French) were used in information, education, and communication (IEC) materials. Radio programs included roundtable discussions, which featured various interviews with providers, satisfied users, and community leaders. Interpersonal communication involved trained *animateurs* or community motivators who spread awareness around the IUD during community meetings, reaching an estimated 12,000 people (Taylor, 2008b). Lastly, a respect for religious custom was important for creating a supportive LARC environment in Guinea. Inclusion of Muslim leaders figured prominently in this intervention; The ACQUIRE Project hosted a two-day meeting with the League of Islamic Affairs to elicit their support (The ACQUIRE Project/EngenderHealth, 2008).

Between 2004 and 2006 the number of IUD insertions increased nine fold (The ACQUIRE Project/EngenderHealth, 2008). In addition, the reported number of new IUD users remained higher than pre-intervention figures in years following (Taylor, 2008b).

4.1.4 Uganda, Four Districts, 2005–2006

Over the years, the use of LAPMs had decreased in Uganda and in 2005 only 3 percent of women who used mC chose a LARC method. The ACQUIRE Project in partnership with the bilateral USAID program UPHOLD and the Ugandan MoH led the intervention across four districts of Uganda, and sought to increase the capacity of 17 sites that offered a LAPM, in addition to the use of IUD services (Subramanian, Farrell, Kakande, Kumar, Johri, & Gutin, 2008). Project staff would increase use through providing technical assistance and educational outreach, involving males in FP dialogue, and collaborating with key stakeholders and other district agencies working in FP and SRH. The so-called “district approach” sought to strengthen health clinic capacity, service delivery, training and supervision, and logistics, as well as achieve a sustainable and supportive policy environment for LARC moving forward (Subramanian, 2008). The ACQUIRE Project again used its SDA program model to focus on supply strengthening, demand creation, and advocacy efforts.

District performance needs assessments (PNAs) found limited training and supervision capacity at district level health sites. Project staff viewed PNAs as critical for both identifying gaps in service delivery and fostering a sense of project ownership and commitment from district participants (Taylor, 2008d). Supply-side activities included: (1) training for MoH leadership and supervisors to improve management skills; (2) clinical trainings for providers on FP and the IUD; (3) IUD supplies and equipment delivery; (4) technical assistance for outreach activities

and referral systems; and (5) supervision and quality improvement training. Trainings were followed up with routine visits to reiterate content and assess trainee knowledge (Taylor, 2008d).

The communication campaign was limited (due to reduced funding) to just two of the four districts and focused on IUD promotion by stressing its unique benefits, safety and efficacy, and local availability. Focus groups and client interviews helped project staff better understand its intended audiences. The primary audience was women of low socioeconomic status, ages 18 to 34, with at least one child. Secondary audience members included spouses, policy makers, religious and community leaders, and providers. The ACQUIRE Project hired a local Ugandan advertising agency to develop creative concepts that were pretested with focus groups; the chosen key messages were “Coil: Find out the Truth” and “Talk to your health worker about the Coil and other family planning options” (Taylor, 2008d). Different sets of IEC print materials were made with urban and rural audiences in mind. Community health worker (CHW) interpersonal engagement focused on spreading the word on IUD benefits, how it worked, where it could be obtained, and correcting common myths and misperceptions. Three different radio spots aired for six months’ time (Taylor, 2008d).

Policy and advocacy action included updating the national service delivery guidelines, and hosting district launch events to promote acceptance of the IUD within the greater Ugandan political and sociocultural environment (Taylor, 2008d). The intervention provided 1,597 clients with a LAPM and was seen as a success as LAPM use was described as negligible in 2005. However, just 41 IUD insertions occurred over the two-year time period in the chosen districts where the communication campaign was held. Though these results were disappointing, the ACQUIRE Project did find some validation in post-intervention group surveys that demonstrated

more positive attitudes towards FP services, and greater awareness of the IUD (Subramanian et al., 2008).

4.1.5 Kenya, Kisii District, 2005–2007

In Kenya, the IUD dropped in popularity from roughly 15 percent of the mC method mix in 1993 to just 7 percent in 2003 (Taylor, 2008c). The Kenyan MoH decided in 2004 to increase IUD access in seven districts with lower than average IUD utilization rates; the ACQUIRE Project lent assistance in Kisii District. Project involvement was described as supportive in nature, assisting and complementing the MoH who led the initiative. Four key issues in the IUD revitalization effort included: “(1) advocacy and sensitization; (2) capacity building and service delivery; (3) demand creation; and (4) monitoring/evaluation and operations research” (Rajani, 2006, p. 2).

The ACQUIRE Project and the Kisii district health authority began by conducting a PNA, holding focus groups, and interviewing providers at 13 district health sites, where they identified barriers to use, in addition to provider and client attitudes and knowledge towards the IUD (Taylor, 2008c). To improve supply-side barriers and eliminate provider bias against the IUD, project staff updated and led clinical trainings on IUD insertion and removal procedures, in addition to FP counseling skills trainings for staff at 26 district health sites. The ACQUIRE Project furnished sites with permanent equipment that included IUD kits and sterilization tools, while the MoH provided expendable supplies (Rajani, 2006).

To increase demand, ACQUIRE staff hired a local Kenyan advertising agency to design a communication campaign that challenged IUD myths and misperceptions and promoted its safety and efficacy. The target audience was potential IUD users, ages 25 to 40, who were

married with two or more children and interested in spacing or limiting births; secondary audience members included spouses, religious and community leaders, and providers, all described as key decision makers in the household and society. The campaign slogan that tested well with focus groups translated to “know the truth about the IUD,” and featured accompanying imagery of satisfied female users and providers championing the method (Rajani, 2006). This slogan was selected because focus groups liked its positive and proactive message, as well as accompanying imagery that depicted male engagement and couple interaction. The communication campaign included radio spots, IEC print materials, and community outreach events with satisfied user testimonial. All print materials prominently featured referral information (Taylor, 2008c).

The radio campaign was unique in being careful to broadcast only into areas where IUD services would be available. The radio spots were also broadcast in local languages during peak listening times, and a 15-minute weekly talk show held for six months’ time invited IUD champions to talk about their experiences and answer questions. Community mobilization entailed interpersonal engagement with men’s and women’s groups, in addition to road shows. Road shows were referred to as “edutainment” events where marketplace dances, skits, and comedy became a fun and educational opportunity for the masses (Taylor, 2008c). The MoH and ACQUIRE staff trained 74 community members to work as community peer educators and serve as sources of IUD information in their own villages. “Community linkages meetings” were held prior to the launch of the communication campaign, so that all included stakeholders were briefed on its key messages (Rajani, 2006). Again, the ACQUIRE Project held a launch event to promote the initiative, and invited prominent stakeholders, as well as members of the

media; the launch event was broadcast on national television, radio stations, and newspapers (Taylor, 2008c).

While the MoH engaged in advocacy at the national level, including updating FP service provider guidelines, distributing IUD policy briefs to key stakeholders, and hosting IUD sensitization workshops, ACQUIRE staff focused its own advocacy efforts at the district and community levels by working with identified IUD champions (Taylor, 2008c). At the end of the two-year intervention, IUD insertion in Kisii had increased by 734 percent (58 up to 484 insertions), and insertion rates were still at very high levels one year later (Taylor, 2008c).

4.1.6 Ethiopia, Amhara Region, 2005–2007

Prior to the intervention, the Amhara region of Ethiopia had very few available FP services amid failing health infrastructure, and the IUD was cited as the least popular mC method (0.2 percent use) among women (Taylor, 2008a). The ACQUIRE Project collaborated with the Ethiopia MoH to reintroduce the IUD and increase access, demand, and overall use of public and private sector FP services (Taylor, 2008a). The Supply-Demand-Advocacy (SDA) program model was again introduced.

Three hospitals and ten health centers were chosen to be the recipients of IUD service strengthening, achieved by improving providers' clinical skills in IUD insertion and removal, FP counseling, and infection prevention techniques. Seven hundred eighty community-based reproductive health agents (CBRHAs) and health extension workers (HEWs) were also trained in FP counseling and making referrals. To assess competency, project staff routinely followed up with those who received training. The ACQUIRE Project provided additional technical

assistance to improve service delivery channels and LARC procurement, and helped develop updated medical guidelines on IUD provision that agreed with MoH policy (Taylor, 2008a).

To address demand side barriers, a communication campaign began by first connecting with key stakeholders working in the region (Taylor, 2008a). A completed PNA found low literacy rates, high radio use, and limited mass media access in rural areas. Prior research and interviews conducted in the area also discovered that limited knowledge and awareness regarding the IUD would be formidable barriers. It was apparent that communication efforts, especially for rural areas, would need to be done at the local level through interpersonal means, and address the side effects, duration, effectiveness, and reversibility of the IUD. The trained CBRHAs and HEWs were called upon to be leaders of a local campaign to target the rural and illiterate populations. In this role, they were supplied with IUD technical booklets and branded clothing (e.g., t-shirts, baseball caps) so that potential clients could better identify them (Taylor, 2008a).

The ACQUIRE Project chose women ages 18 to 34 as the primary target audience, with secondary audience members including politicians, community leaders, and other health workers. A local Ethiopian advertising agency pretested a number of creative concepts with focus groups that represented these various audiences. The chosen key message was “reliable as my choice...reversible when I decide” (Taylor, 2008a). With this slogan in mind, the project produced two radio spots, four billboards, and 19,000 posters that were distributed to health centers and health workers. Radio was seen as the most important channel due to its far reach and the fact that people did not need to be literate to understand it. The billboards and posters were seen as complementary actions to increase overall visibility of the communication campaign. Within the health facilities offering IUDs, signs, leaflets, and technical booklets were also produced to supplement IEC materials.

Advocacy efforts focused on gaining support and acceptance for the IUD from local politicians, community and religious leaders, other NGOs, and regional health officials. The ACQUIRE Project held campaign launches in each region, to celebrate its efforts and draw more attention to key messages. These events included testimonials by satisfied IUD users, in addition to promotional messages from providers that were proliferated through mass media outlets including both national and regional radio, television, and newspapers. As a result, IUD provision in the region jumped by 86 percent (182 up to 338 insertions) from 2006 to 2008 (Taylor, 2008a).

4.1.7 Population Services International, Six Countries, 2009–2010

The Women’s Health Project (WHP) of PSI was a two-year, 13-country initiative, with six SSA countries included: Kenya, Madagascar, Nigeria, Uganda, Tanzania, and Zambia (Blumenthal, Shah, Jain, Saunders, Clemente, Lucas, Jafa, & Eber, 2013). The WHP’s objective was to stimulate demand and improve service delivery for the IUD among countries with high unmet need and low IUD utilization. Across these six SSA countries, combinations of four PSI service delivery approaches were used: (1) private franchised clinics; (2) PSI-affiliated network clinics; (3) seconding (i.e., temporarily assigning) PSI staff to public sector clinics; and (4) outreach clinic “event days” (Blumenthal et al., 2013). Within the first two approaches, PSI staff was generally responsible for training, monitoring, and supporting providers at these established health clinic sites. PSI also implemented demand creation activities in the surrounding communities. Members of the PSI-seconded staff were focused on building capacity at clinics through provider training on IUD insertion and removal, FP counseling, and infection prevention

techniques. These clinics were typically in areas with few private sector clinics, as well as poorly funded public sector FP services (Blumenthal et al., 2013).

The fourth service delivery approach, referred to as “event days,” took place at advertised locations and was preceded by two to five days of community outreach activities centered on educating women about LARC and making referrals to nearby providers (Blumenthal et al., 2013). During these event days, outreach clinic staff screened women for medical eligibility and inserted their chosen LARC method over a one to three day timespan. PSI was responsible for training the outreach clinic staff, monitoring foot traffic, and providing logistical support for supplies supervision (Blumenthal et al., 2013). The general trend was to begin WHP service delivery in a given area with specially advertised event days, then gradually shift to more routine service delivery from static clinic settings as user awareness spread.

Demand generation for LARC encompassed mass media and interpersonal communication campaigns that were led by CHWs trained as BCC agents. These agents discussed LARC myths and misperceptions, benefits, side effects, client questions, and provided referral services. Mass media campaigns also addressed these concerns in addition to providing more IEC content. PSI used a variety of communication channels in each country, including radio, television, print materials, and billboards where available. Monitoring and evaluation measures later found consumer demand for IUDs was greater than expected, and “low-tech demand generation approaches linking potential consumers to nearby service locations [were] highly effective” (Blumenthal et al., 2013, p. 173).

PSI also engaged in advocacy with other NGOs working in the FP and SRH field, supporting the integration of IUD insertion and removal training in medical school courses and IUD education for private providers during national medical conferences. In sum, over 175,000

women across SSA were counted as new IUD users thanks to the WHP (Blumenthal et al., 2013).

4.2 INTERVENTIONS FOR IMPLANT PROVISION

One intervention focused on implant provision exclusively and was implemented from 2009 to 2013. This intervention was conducted in four regions within Ethiopia.

4.2.1 Ethiopia, Four Regions, 2009–2013

Ethiopian women rely primarily on short-acting mC, and LARC was historically limited due to various supply side barriers (Asnake, Henry, Tilahun, & Oliveras, 2012). The Ethiopian MoH partnered with the Integrated Family Health Program (IFHP), a five-year USAID-funded program led by Pathfinder International, John Snow, Inc., and the Consortium of Reproductive Health Associations (CORHA) to expand the mC method mix and include community-based provision of the Implanon implant (Asnake, Henry, Tilahun, & Oliveras, 2013). Implant services in rural communities were scaled up through “task shifting,” giving competency training to health extension workers (HEWs) to provide implant services. HEWs are paid community health workers who provide various health services at health posts located in each *kebele* (village). Prior to this intervention, only hospitals and health centers with doctors or other highly skilled health personnel were allowed to provide implant services to interested clients (Asnake et al., 2012).

The IFHP sought key stakeholder participation by selecting 72 obstetricians and gynecologists, already trained in contraceptive implant insertion, to serve as “master trainers” for the 218 selected HEWs under the train-the-trainer (TOT) model (Asnake & Tilahun, 2010). It was important that the trainer to trainee ratio be small so that one-on-one supervision could occur. The IFHP and its partners created the training curriculum, IEC materials, and monitoring and evaluation methods for the intervention. The training curriculum covered screening for medical eligibility, FP counseling, insertion and removal procedures, and infection prevention techniques (Asnake et al., 2011).

To recruit enough women to serve as patients for HEW training sessions, the IFHP used “audio-visual vans” to raise awareness around the event and promote the FP services available (Asnake & Tilahun, 2010). Village-level demand generation has three major parts: (1) HEWs informed community members of training days well in advance; (2) volunteer CHWs made community-wide announcements of dates and locations of training days; and (3) IFHP mobile staff were sent to villages five weeks in advance to also spread awareness via interpersonal communication (Asnake, Cole, Oliveras, & Tilahun, 2011). During training sessions, clients were offered the full range of short- and long-acting methods if they ultimately did not choose to have Implanon inserted.

This communication strategy resulted in more than 3,500 women participating as training session patients. Trainings were part theoretical and part clinical practice; HEWs first practiced their technique on a wooden and plastic arm model before being allowed to perform it on an actual client. Once the HEW was certified in implant insertion, he/she was provided with 20 sets of Implanon by the IFHP. While the IFHP supplied resources for all HEW trainings, it left the MoH national supply chain and *woreda* (district) health offices responsible for maintaining

supplies thereafter (Asnake et al., 2011). Regular follow-up meetings with master trainers and HEWs after the intervention start date helped IFHP staff better understand progress and challenges they faced.

One of the main project priorities was ensuring community-wide access to implant removal services, when the time came for women to request them. After all, Implanon is approved for three years' time, and many women may decide to have the device removed prematurely if it causes an adverse reaction or they cannot tolerate the side effects. The IFHP made implant removal services available through: (1) directly training over 1,500 providers in implant removal; (2) supplying health centers with implant removal kits; (3) providing back up support to 139 health centers, reaching 700 smaller health posts; and (4) building capacity at the *woreda* level to request implant removal support, equipment, and technical assistance from IFHP during the five-year implementation period (Asnake, Solter, Tilahun, & Vespia, 2013).

The IFHP task shifting service delivery approach was eventually scaled up to reach 209 of 550 *woredas* in the country, and provided over 45,000 clients with implants (Asnake et al., 2011).

4.3 INTERVENTIONS FOR IUD AND IMPLANT PROVISION

Two interventions focused on IUD and implant provision, and were implemented between 2008 and 2012. One intervention took place in four provinces of Zambia, while the other described the SSA regional program under MSI.

4.3.1 Zambia, Four Provinces, 2008–2009

Zambia has historically had a very low LARC use rate (0.4 percent) among women who use mC. This small-scale intervention was led by the Society for Family Health (SFH) in collaboration with PSI, the Zambian MoH, and USAID, which donated commodities, along with funding from an anonymous donor (Neukom, Chilambwe, Mkandawire, Mbewe, & Hubacher, 2011). PSI hired and trained 18 midwives to promote LARC and provide same-day insertion services, placing them in public sector health clinics across four provinces to supplement preexisting FP services that primarily offered short-acting mC. In fact, preliminary research found that most women who attended these busy clinics were often given short-acting mC without being asked about a longer-term need. PSI staff suspected a “significant latent demand” (Neukom et al., p. 450) for LARC services, and in response, brought in providers who were passionate about FP and SRH. These 18 midwives boosted the total number of days that LARC services were available to nearby communities, and helped clinic staff gain competency in LARC counseling, insertion and removal procedures, and infection prevention techniques (Neukom et al., 2011).

Midwives were rotated throughout the week between their primary clinics and more rural clinic locations. In total, 23 different clinics across four provinces were served, with PSI providing ongoing supervision and support. The intervention was unique in its choice to counsel women at the clinics who had arrived for other reasons; midwives spoke to these groups during their wait, touting LARC for its many benefits, while offering them the choice to try it that same day (Neukom et al., 2011). Midwives could offer either the implant or copper IUD to their clients, and postpartum IUD insertion was also made available. Clients were instructed to return whenever they desired for removal, and were given a card with information regarding their chosen method and its duration of use. Midwives also asked for verbal feedback from LARC

clients during their visits to the clinics. Collected feedback addressed the benefits, drawbacks, and misperceptions of LARC, and was presented to prospective clients while they waited for other MCH services at the clinic (Neukom et al., 2011).

Monthly LARC insertion grew from 287 in the first month to 3,756 in the busiest month of the intervention, an increase of roughly 1200 percent. Over the 14-month implementation period, the midwives provided 33,609 women with LARC. Interestingly, the implant was more popular than the IUD, with over two thirds of women opting for it (Neukom et al., 2011).

4.3.2 Marie Stopes International, 15 Countries, 2008–2012

MSI's mission is “children by choice not chance” (May, Ngo, & Hovig, 2011, p. 4). Three service delivery channels are used in MSI interventions in SSA: (1) MSI clinics; (2) mobile outreach; and (3) social franchising. By using more than just one channel, the likelihood of reaching a potential user increases; MSI determines which channels to use based on efficiency and reach metrics within each country (Duvall, Thurston, Weinberger, Nuccio, & Fuchs-Montgomery, 2014).

Research collected from numerous exit interviews with SSA clients determined that the most influential source of information for a woman debating using MSI services was someone else who had previously used the service. Additionally, the most important reasons for choosing MSI services were having them nearby and their good reputation (Duvall et al., 2014). With these findings in mind, MSI strategy is to delivery quality FP services that produce satisfied users who will then refer their friends and neighbors, furthering promoting MSI services in SSA.

MSI clinics have the longest history of service delivery in this region. These clinics are run exclusively by MSI, located in urban (i.e., cities and towns) and semi-urban areas, and

provide FP services to 15 SSA countries (Duvall et al., 2014). Importantly, these clinics have sliding scale fees, so that a portion of the collected revenue can then subsidize the mobile outreach services that are typically free to impoverished rural users. Demand is generated through educational outreach conducted in community settings (e.g., markets, beauty salons, universities) by MSI clinic staff, in addition to radio advertisements, print flyers, and promotional IEC materials posted in visible places (Duvall et al., 2014).

Mobile outreach brings MSI providers and LARC supplies directly to underserved clients every four to six weeks in rural locations. MSI collaborates with public sector clinics selected on the basis of existing infrastructure, community ties, and the degree of clinic visibility among clients. To generate demand for these services, CHWs conduct outreach with IEC materials, group information sessions, and village-level promotional efforts. The day of the mobile outreach visit is widely publicized and announced beforehand on the radio or through local media advertisements (Duvall et al., 2014).

Social franchising networks are contractual arrangements with private providers working in underserved areas that provide FP services and are regulated and supported by MSI. This means that MSI-supported providers will have access to LARC commodities that they might otherwise not have. This is done through: (1) MSI commodity price reductions; or (2) negotiated access to national level commodity supply chain support (Duvall et al., 2014). Social franchising allows network clinics to provide reliable and affordable access to a wider range of mC that includes LARC. Demand is generated through CHW educational outreach, print and radio advertisements, and financial promotions or “special discount days” for LARC services (Duvall et al., 2014). MSI also coordinates LARC removal services at its clinics and franchisee locations; for outreach clients, referrals are usually made to a static clinic site for removal

services. All staff and providers must attend MSI training on LARC insertion and removal procedures, FP counseling, and infection prevention techniques. Refresher courses are routine and mandatory (Duvall et al., 2014).

Between 2008 and 2010, IUD insertions in SSA more than doubled, and implant provision saw a nine-fold increase, totaling 1.7 million implants inserted over five years' time (May et al., 2011). The majority of the IUD and implant insertions were the result of mobile outreach that focused on poorer rural populations. MSI attributes this scaling-up success to: (1) public-private partnerships; (2) social franchising and voucher schemes; (3) task shifting; and (4) concentrated rural outreach efforts (May et al., 2011).

5.0 DISCUSSION

5.1 OBSTACLES TO EFFECTIVE LARC PROVISION

There are various obstacles to effective mC provision. In trying to obtain contraception, women may find laws or policies preventing their access (based on age, parity, or marital status and consent) or health providers that are in opposition to their use, in addition to potentially prohibitive costs and poor local service provision (Blumenthal et al., 2011; Greene & Stanback, 2012; Vernon et al., 2007). In using contraception, women may face unsupportive partners or spouses, in addition to peer pressure and social norms that discourages their use. Stigmas around contraception, including the idea that a women carrying condoms is a prostitute or promiscuous, also exist (Williamson et al., 2009). Generally, little knowledge of how to obtain or use mC correctly is common (Chandra-Mouli et al., 2014).

5.1.1 Supply Side Obstacles

5.1.1.1 Provider Bias

In many cases, health care providers hold incorrect and outdated opinions of LARC methods based on their limited education on the subject (FHI, 2008; Subramanian et al., 2008). In interviews conducted with providers, many felt uncomfortable promoting the method in consultation with clients because of their relative inexperience and insufficient training in the

insertion and removal of such devices (May et al., 2011; Rajani, 2006;). Indeed, the Zambia case study found that FP providers who lacked meaningful supervision during training events had less confidence and desire to provide such services over time (Neukom et al., 2011). With the IUD and LNG-IUS, providers most frequently worry that the device may cause pelvic inflammatory disease (PID), infertility, and be unsafe for women who are HIV positive (Jacobstein, 2007). However, none of these fears have any basis in fact; IUDs are not associated with an increased risk of PID, infertility, or danger for HIV+ women (Bluestone et al., 2006).

Some health care providers have strong cultural norms against unmarried or adolescent women using contraception. Indeed, one research study found providers often set unnecessarily high age and parity requirements for women based on their own bias or incorrect information around mC risk (Green & Stanback, 2012). Providers and health officials may also show strong favoritism for short-acting reversible contraception, including the pill, condom, or injectable, because they are more familiar with counseling potential clients on these methods, and the inertia of having done so for many decades is harder to reverse (Neukom et al., 2011).

5.1.1.2 Failing Health Infrastructure

Hospitals and health clinics responsible for providing FP services were often found to lack the necessary equipment and supplies to functionally offer LARC methods to interested clients on a regular basis (FHI, 2006; Rajani, 2006; Taylor, 2008a). The ability to provide sterile surgical conditions for LARC insertion and removal procedures may also be limited, and increase the likelihood of infection or other health complications (May et al., 2011; Taylor, 2008c). Additionally, health care providers may not have had clinical experience with LARC insertion and removal procedures because their medical school or facility was under-equipped to teach

such courses (Subramanian et al., 2008). In some instances, providers and clinics may have the necessary tools to perform device insertion, but not device removal (Duvall et al., 2014).

5.1.1.3 Weak Political Support

Without the support of relevant policy makers, government officials can easily ignore requests for MoH funding and promotion of LARC in the national mC method mix. Historically, short-acting reversible methods have garnered greater attention from national ministries of health and governments in SSA (Neukom et al., 2011; Rajani, 2006). In many countries, the historical political climate was ambivalent towards LARC, and some governments supported pronatalist policies as an economic development strategy (Subramanian et al., 2008; Taylor, 2008b). Political support should never be underestimated as an important component to effective LARC provision; in the case of Kenya the IUD was a popular mC method offered to women in decades prior, and had slowly disappeared due to cuts in MoH funding and attention placed on other prominent health issues (e.g., HIV/AIDS transmission) (FHI, 2006).

In Uganda, researchers found that political commitment and written declarations on FP policies did not always align, and local-level leaders responsible for allocating public funds were not well informed of health sector or FP priorities at the national level (Subramanian et al., 2008). These problems had historically limited the national MoH to effectively offer the desired mC method mix to its citizens. The ACQUIRE Project also stressed the importance of political will in the long-term success and viability of FP programs moving forward (Taylor, 2008b).

5.1.1.4 Poor or Nonexistent Funding

Poor funding is related to both weak political support and the unreliable nature of international donor commitments. All of the interventions studied involved an implementing agency that has

tremendous clout and ample financial resources in the field of FP and SRH. Still, interventions are inherently short-term in length (anywhere from a few months to five years' time), and funding arrangements quickly dry up once program operations have ceased. While the respective countries' MoH may have the desire to expand the mC method mix to include LARC, they are often faced with the reality of little to no public funding for any ambitious public health intervention (Subramanian et al., 2008). Again, international commitment and donations may focus on more pressing health concerns on the continent, which have recently included preventing HIV/AIDS and malaria, tuberculosis, and other infectious disease control measures (Jacobstein et al., 2009; Mbizvo & Phillips, 2014).

5.1.1.5 Breaks in the Supply Chain

For many interventions, when the demand for LARC at health clinics was strong, the materials to carry out implant and IUD insertion were often in short supply (Asnake et al., 2013; Rajani, 2006). In Uganda, the ACQUIRE Project referred to frequent "stock-outs," due to limited finances at the national level to supply adequate equipment and LARC devices to health posts (Subramanian et al, 2008). In rural SSA settings, it is often difficult to secure reliable transportation for goods through rough terrain that may involve washed-out roads or broken down rail systems. The Zambian intervention reported that it could have reached more women if procuring the LARC commodities and supplies from national systems had not been so difficult (Neukom et al., 2011). While stock-outs reduce service uptake, a ready supply of commodities ensures high-quality service delivery as well as greater client uptake and loyalty (Duvall et al., 2014).

5.1.2 Demand Side Obstacles

5.1.2.1 LARC Myths and Misperceptions

Various myths and misperceptions exist among all SSA women interviewed in the interventions. In Kenya, women were fearful of the IUD migrating elsewhere in the body, harming a fetus, and causing pain or discomfort during sex (Rajani, 2006). Women thought the IUD could cause an abortion and possibly rust inside of them (Bluestone et al., 2006). Most interestingly, women in several SSA countries believed that if they became pregnant while using an IUD, the baby could be harmed or be born holding it (Melngailis & Eber, 2006; Taylor, 2008c).

Myths and misperceptions also abound regarding personal health concerns (Blumenthal et al., 2013). Some women stated fears of acquiring HIV/AIDS and other illnesses through the insertion process (Bluestone et al., 2006; FHI, 2006). In Kenya, focus groups participants reported concerns that the IUD causes cancer, and weakens the body, making manual labor a challenge (Taylor, 2008c). In Uganda, women were worried that an IUD could disappear in the body and cause prolonged bleeding (Taylor, 2008d).

5.1.2.2 Little Knowledge of LARC

In some instances, women had heard of the implant or IUD, but knew nothing about it beyond the name (FHI, 2008). In research conducted by the ACQUIRE Project in Ethiopia, participants did not know much about LARC methods beyond their existence; they had neither favorable nor unfavorable views on its use, and could not describe how it worked (Taylor, 2008a). In other cases, women may have known about LARC and wanted to try it, but were unfamiliar with where it could be obtained, its cost, and other questions of access (Escandon et al., 2006; Rajani, 2006).

5.1.2.3 Limited Access to Services

Access, as defined by Cleland and Machiyama (2015) includes “information about [FP] method and services, geographic proximity to services, affordability, and acceptability” (p. 13). Barriers to access may include cognitive, geographical, financial, sociocultural, and health care-related factors (Pile et al., 2007). Prior to many interventions, LARC methods were available at only a handful of hospitals or regional health posts located primarily in more urban settings (FHI, 2008; 2010). For many women, the most convenient health clinic did not provide FP methods beyond popular short-term hormonal forms including the pill and injectable (Neukom et al., 2011). Indeed, for some interventions, LARC was being introduced for the very first time to areas where previously it had never been offered (Asnake & Tilahun, 2010; Blumenthal et al., 2013; Taylor, 2008a).

Access also refers to the question of cost; if the cost of obtaining any mC is too high for the user to afford, she will likely go without. During the IFHP implemented in Ethiopia, researchers also found that a significant barrier to access was the consent of husbands, mothers-in-law, and family members to escort young married women while travelling to another town for FP services (Asnake et al., 2012).

5.1.2.4 Social Stigma

In general, many women believe that consulting providers about FP services may signal their promiscuity or, if unmarried, sexual activity before marriage (Singh & Darroch, 2012). This stigma makes it difficult for women to discuss FP with their partners or obtain husband approval to access it; many women are afraid of their partner’s response to using contraception, and do not seek it out (or do covertly) for fear of reprisal (Prata et al., 2013). Additionally, many African cultures stress the importance of large families; FP services may be viewed as counter to the

prevailing tradition and social norms (Escandon et al., 2006; Taylor, 2008b). With shorter average life expectancies in many SSA countries, getting married and having children is a top priority for early life. Especially for newly married women, the pressure from peers and mothers-in-law to quickly start a family and have many children is great, and mC use does not have community approval (May et al., 2011).

5.2 EFFECTIVENESS OF LARC INTERVENTIONS

5.2.1 Shared Intervention Strengths

5.2.1.1 Engaging with Community Stakeholders First

The most successful interventions were those that put forth effort to secure buy-in from relevant stakeholders within the country of operation. This meant not only the political commitment from national leaders and health ministries, but also technical support from health care institutions (e.g., hospitals, clinics, medical schools), and most importantly, the trust of potential clients. Many INGOs engaged in advocacy at national, regional, and village levels, as they attempted to garner the high profile support of respected and influential community figures around LARC promotion (FHI, 2006; 2008; Taylor, 2008a). Many interventions also worked directly with regional and local health care officials, national universities, and professional healthcare organizations to update medical eligibility guidelines, improve LARC service delivery, and strengthen provider training and supervision capacity (Asnake & Tilahun, 2010; FHI, 2006; Neukom et al. 2011).

Effective interventions recognized that collaboration with the national MoH, other health INGOs, community-based organizations (CBOs), political, community, and religious leaders early on in the intervention was imperative to project success. Collaboration with key stakeholders, who were seen as “gate keepers” to accessing the population of interest, was a prominent component of the Save the Children Guinea intervention (FHI, 2008; 2010). Religious leaders are also particularly salient in countries where religion is central and one of the more visible forces in society. For the ACQUIRE Project operating in Guinea, this meant engaging with imams in a public forum to increase the perceived social acceptability of LARC methods (The ACQUIRE Project/EngenderHealth, 2008). In most cases, religious leaders (typically Christian or Muslim) were supportive of maternal and health objectives, including the ability to safely space children through the use of FP services.

Participatory stakeholder engagement was also important for establishing a sense of ownership and responsibility for project goals. The ACQUIRE Project and EngenderHealth conducted primary qualitative research (e.g., PNA, focus groups, client interviews) to better understand the target audience for their intended interventions. Furthermore, the INGOs hired local advertising agencies to design communication campaign creative concepts and key messages, which were pre-tested with focus groups comprised of individuals that mirrored intended target audiences, to study how well messages were generally received (Taylor, 2008a; 2008b; 2008c; 2008d).

5.2.1.2 Engaging with Client in Local Setting

Successful interventions were quick to engage with potential clients in a variety of ways, all in their own community, often times at their very own doorstep. Many interventions sought local perspective and input in creating communication materials. Various INGOs conducted PNAs,

client interviews, and held focus groups within the communities they intended to serve (Taylor, 2008a; 2008b; 2008c; 2008d). This was a brilliant strategy; using community-based participatory methods to engage with client stakeholders aided in collecting useful data on user preferences and obstacles to LARC provision (Rajani, 2006).

Successful outreach initiatives focused on starting dialogue between trained health care providers and potentially interested clients. In Kenya, FHI 360 hosted community awareness events by employing community outreach agents (e.g., CHWs, HEWs, CBRHAs) to engage with potential users (FHI, 2006). In the ACQUIRE Project in Kenya and Ethiopia, community outreach was done on an interpersonal level to account for low literacy rates and potential low exposure to mass media among clients. Grassroots mobilization meant engaging with faith-based, women's and men's, and youth groups (Taylor, 2008c). To account for literacy concerns, the ACQUIRE Project also made sure that radio shows and print IEC materials were available in both national and local languages (Taylor, 2008a; 2008b; 2008c; 2008d).

Client preferences, traditions, and social norms were also considered and respected in the more effective interventions. In Guinea, IEC materials included culturally appropriate images; the families depicted were seen in both traditional Muslim and modern dress, and only female health providers were pictured (The ACQUIRE Project/EngenderHealth, 2008). Additionally, the slogan used in Guinea, “un contraceptive ideal pour espacer les naissances,” translated to “an ideal contraceptive for spacing births,” and aligned well with Guinea's culture preference for large families, and the desire to space but not necessarily limit family size (Taylor, 2008b).

Successful interventions used a variety of communication channels to disseminate key messages and maximized the likelihood of reaching more people. Rural radio was the most popular channel of communication as it was the most widely used by target audiences (Duvall et

al., 2014; Escandon et al., 2006; Taylor, 2008a; 2008b; 2008c; 2008d). Save the Children in Guinea was particularly innovative in its use of creative media channels (e.g., radio, song, folklore, and theater production) (FHI, 2008; 2010).

5.2.1.3 Addressing LARC Provision Obstacles

To address demand side obstacles to provision, behavior change communication dealt with dispelling myths and misperceptions, promoting LARC safety, efficacy, convenience, and benefits, and increasing male engagement and awareness around how and where to receive FP services (FHI, 2006; May et al., 2011; Rajani, 2006). IEC promotional materials and educational outreach conducted by CHWs and HEWs in the field were explicitly meant to “bridge the gap” in knowledge and address social stigma that may keep women away from LARC (Blumenthal et al., 2013; The ACQUIRE Project/EngenderHealth, 2008). The ACQUIRE Project hired on technical partners to specifically research, design, and implement a communication campaign to generate demand for the IUD (part of its Supply-Demand-Advocacy (SDA) program model) (Taylor 2008a; 2008b; 2008c; 2008d).

In the ACQUIRE Project in Kenya, the communication campaign aimed specifically at dispelling myths and misperceptions was titled “Fahamu ukweli wa mamb” or “Know the truth about the IUD,” and featured images of users and providers promoting LARC methods (Taylor, 2008c). The choice of this title was deliberate; after conducting focus groups with potential clients, researchers found that messages from health providers and satisfied users would be the most influential in swaying opinion in favor of using an IUD (Rajani, 2006). In Ethiopia, the chosen slogan for the mass media campaign was “reliable as my choice...reversible when I decide,” whereas in Uganda the final concept message was “find out the truth” (Taylor, 2008a;

2008d). These messages were decided upon after lengthy pre-testing trials with selected focus groups consisting of male and female villagers around the targeted age group.

Questions of access were addressed through creative service delivery approaches including: (1) introducing mobile clinic services; (2) expanding public sector clinics that provided LARC methods; and (3) hosting “event days” where LARC services could be provided in a time-efficient manner (Blumenthal et al., 2013; Duvall et al., 2014; May et al., 2011; Neukom et al., 2011). Strengthening referral networks (e.g., via pamphlets, word of mouth, flyers posted in community settings) also made women more aware of where and when the most convenient services were available to them (Blumenthal et al., 2013; Duvall et al., 2014; FHI, 2008; 2010; Rajani, 2006).

To address supply side obstacles to provision, effective interventions focused on training providers in LARC insertion and removal procedures, FP counseling, and infection prevention techniques so that their own biases against the method were eliminated (Asnake et al., 2013; FHI, 2006; Taylor, 2008b). Health infrastructure was improved through direct financial investments in improved facility equipment, supplies, and re-stocking of commodities, whether by grant funding or partnerships with national level supply chain networks (May et al., 2011; Rajani, 2006). The ACQUIRE Project in Ethiopia placed importance on strengthening the capacity of preexisting health care networks within the countries by providing technical assistance and “whole-site” training to improve provider knowledge and skills (Taylor, 2008a). Advocacy, made visible to the public through mass media campaigns, sought to improve general political support and funding for FP programs (Taylor, 2008a; 2008c; 2008d). INGOs were able to, in some instances, negotiate with major pharmaceutical firms for discounted products (or price guarantees) on devices, in attempts to stabilize supply and prevent stock-outs (Duvall et al.,

2014; May et al., 2011). To account for breaks in the supply chain, INGOs also used creative approaches to service delivery; they provided LARC services not only in static health clinic settings, but through mobile outreach services as well as interpersonal communication (i.e., “door-to-door” or “peer-to-peer”) referral systems to direct interested clients to nearby available FP services (Blumenthal et al., 2013; Duvall et al., 2014).

5.2.2 Shared Intervention Weaknesses

5.2.2.1 Reliance on Changing Streams of Donor Support

All ten interventions received substantial funding from health INGOs (e.g., MSI, John Snow, Inc., Pathfinder International), national development agencies (e.g., USAID, KfW Entwicklungsbank) and in some cases, anonymous donors (Neukom et al., 2011). Interventions procured their LARC devices from a range of sources that included INGOs (e.g., John Snow, Inc.), foreign government donors (e.g., USAID), and reduced price agreements with large pharmaceutical firms (e.g., Bayer) (Duvall et al., 2014; FHI, 2006; Subramanian et al., 2008). The ACQUIRE Project was able to directly procure the IUDs as part of the \$150 million dollar contract with USAID (Taylor 2008a; 2008b; 2008c; 2008d). MSI developed a unique system where the MSI clinics charged urban clients on a sliding fee scale, enabling some portion of the revenue to then fund the free mobile outreach services in more underserved rural areas (Duvall et al., 2014). The IFHP found that maintaining a ready supply and flow of commodities was challenging; although they had originally agreed to the Ethiopian MoH providing commodities post-training, they often provided additional implant kits to HEWs as their original supply ran out (Asnake et al., 2011).

In every case, the funding was specified for a designated time period with the understanding that at project's end, that money stream would be cut. Any intervention must strongly consider how project operations will continue once the designated funding period has passed. Within the ID field, there are countless stories of successful interventions ceasing to exist once the implementing agency has packed up its bags and withdrawn from project operations. This is a grave consideration; ending LARC services in an area where they were once available means that clients may suffer health consequences if their device cannot be properly removed (and they use illegitimate or unsafe means to remove it). In the case of FP services in the many poor countries of SSA, it is the hope that sustainable LARC provision will be shifted to public funding streams (e.g., national ministry of health budgetary spending) once the many short-term interventions conclude (Okonofua, 2014). However, the viability of that shift in funding depends on political commitment, available discretionary funds (often a very big problem in poor, underdeveloped regions of the world where the ability to collect taxes is limited), and bureaucratic capacity at the top to manage such funds in an effective and honest manner (resisting the ever-present temptations of corruption and fungibility).

5.2.2.2 Top-Down Program Governance

Some implementing agencies did better than others when it came to considering the inclusion and integration of local health providers, local ownership, and the long-term involvement of national health programs during project implementation. The question of who was responsible for training providers varied; while some more inclusive projects used native hospital staff and doctors to train mid-level health personnel (i.e., the idea of task shifting), the majority employed (presumably foreign) staff to directly train providers and CHWs (Asnake et al., 2012). It should also be noted that all of the implementing agencies (with the exception of the Consortium of

Reproductive Health Associations [Ethiopia] and the Society for Women and Aids in Africa [Senegal]) are headquartered in either the United States or another highly developed European country (e.g., Germany, United Kingdom). The relative lack of African run NGOs taking on a primary role in these interventions was disappointing, as more native involvement would be a welcomed sight.

Many interventions worked in collaboration with the national MoH; while respectful of their policies, INGOs still brought with them outside technical assistance partners and foreign staff to lead clinical trainings, direct LARC procurement, and update FP medical guidelines (Subramanian et al., 2008; Taylor, 2008c) As an exception, the IFHP in Ethiopia did consult with national level medical schools and native medical professionals to help create training materials (Asnake & Tilahun, 2010). This included hiring 72 native-born obstetricians and gynecologists to serve as “master trainers” during the HEW implant competency trainings. Additionally, the ACQUIRE Project also deserves recognition for deliberately hiring native advertising firms in each country of operation, to create and test its creative concepts and key messages with focus group participants. FHI 360 also consulted with the department of obstetrics and gynecology at a national university, in addition to national professional healthcare organizations when asking for recommendations in IUD revitalization efforts (FHI, 2006).

Still, in the majority of cases, the high profile INGO stepped in and took charge of the intervention timeline, allowing minimal (almost superficial) control to pass to native-born institutions and individuals, which could have been very strong assets for overall project success. To be fair, many countries in SSA lack a cadre of highly skilled health personnel and proficient medical schools, and often suffer from brain drain (i.e., native-born students graduate with their professional degrees and immediately seek employment in other countries with higher wages and

better job opportunities). In this regard, it may have been the case that INGOs would have preferred to employ and work with native-born health professionals and institutions, but were unable to do so because those options were limited in the country of operation. Additionally, while it appeared that the national ministries of health were appreciative of INGO efforts, all of the available literature was published by the implementing agency, and it is difficult to say how the national leadership truly felt about the INGOs operating in their country or their ultimate level of involvement in the intervention.

5.2.2.3 Missing Long-Term Sustainability Plan

While most interventions were well-equipped to plan for project implementation, monitoring, and evaluation over the designated funding period, very few planned for the long-term sustainment of project achievements. In many cases, implementing INGOs relied on handing over their tasks and responsibilities to health officials within the national MoH, who may or may not have been ready to assume the entire scope of program activities (Asnake et al., 2011; FHI, 2006; Rajani, 2006; Taylor, 2008d). The reviewed literature made very little note of this transition, and ultimate long-lasting success at any meaningful time point following the project remains unknown.

In only one case did the implementing agency make note of a detailed strategy to provide LARC method removal services (Duvall et al., 2014). MSI stressed the importance of having appropriate infrastructure in place to uphold client trust and loyalty when the time came to return for implant removal services (Duvall et al., 2014). Most interventions focused on training providers on LARC insertion and removal techniques, but did not provide further details on how these devices would be safely removed three to ten years down the road. Those considerations seemed beyond the scope of the funding period and project implementation timeline, and as

such, received little mention in the reviewed literature. Discussion around removal is key; LARC methods require a trained medical provider to safely retrieve the device after its effectiveness has diminished (Greifinger, 2015). To provide LARC insertion services, but not have equally robust removal services in place is counter to the Hippocratic oath to “first do no harm.”

To be fair, some interventions did implement strategies that focused on sustainability considerations once the INGO had packed up and headed home. In Kenya, the ACQUIRE Project valued training native medical providers to train others in IUD insertion and removal skills to sustain confident service delivery after project’s end (Rajani, 2006). Still, ACQUIRE staff acknowledged that the Kenyan MoH ultimately had ownership over the long-term success of the IUD revitalization effort, and ongoing support from policy makers, providers, and supervisors would largely determine long-term project success (Rajani, 2006).

Unfortunately, all interventions reviewed were completed under very short timelines spanning just eight months to five years in length. Although they might have seen positive results in that limited time frame, any robust documentation of sustainable desired outcomes is lacking. One implementing INGO, FHI 360, stressed how further research, monitoring, and evaluation were needed to pinpoint best practices in LARC promotion in SSA (FHI, 2008). In the Zambia case study, the intervention team, led by PSI, acknowledged that scaling up successful pilot programs to perform nationally had historically been difficult in SSA (Neukom et al., 2011).

5.3 OTHER CONSIDERATIONS

5.3.1 Regional Factors Influencing Client Uptake

Multiple research studies across SSA have examined factors that influence potential client uptake of LARC. Factors relating to client knowledge and attitude include: (1) little awareness regarding these methods; (2) general misunderstanding of health risks and side effects associated with each method; and (3) lack of control over contraception when decisions are made primarily by male partner (Babalola, John, & Yinger, 2013; Williamson et al., 2009). The following sections further elucidate research findings from Uganda, Nigeria, Ethiopia, Madagascar, and Kenya.

In Uganda, research respondents all understood that LARC prevents pregnancy, and most were aware of how the devices were inserted (Anguzu et al., 2014). They cited LARC side effects as the main reason for not choosing them, particularly a belief that they would cause permanent infertility. They also felt that married women should not use LARC, because they should steer clear of contraception that could harm their ability to bear children. Almost half of the women surveyed felt that their male partners should decide on which form of contraception to use (Anguzu et al., 2014). In Zambia, one study also found that while the husband's involvement in making joint decisions regarding contraception led to an increase in the use of LARC methods, the variable with the strongest association to LARC was the wealth index; those women in the wealthiest households were far more likely to use a LARC method than those from moderately wealthy to poor households (Mutombo & Bakibinga, 2014).

In Nigeria, study participants also cited fears of side effects and infertility if a couple chooses to use FP early on in their reproductive years (Babalola & John, 2012). Regarding

LARC, participants were aware of all of the methods but their knowledge was limited. IUDs were the most well known LARC method; still, side effects and negative misperceptions were common (e.g., IUD makes you more likely to get an STI, and harms your male sex partner). Participants also stated their preference for making joint decisions regarding contraception, although the woman may act covertly if the husband opposes its use. Important considerations when choosing a contraceptive method include its cost, ease of use, non-contraceptive benefits, and safety concerns (Babalola & John, 2012).

In Ethiopia, among surveyed married men and women in northern Tigray, knowledge regarding LARC methods were described as superficial, meaning that study participants only knew the method names, but not much more (Gebremariam & Addissie, 2014a). They in part attributed this to FP counselors who did not provide them with information on all methods, and focused on the injectable and pill. With LARC, women were fearful of not being able to complete physical tasks after the insertion or removal procedure. There was also a mistrust of FP workers to perform the procedures safely, and concern over the pelvic exam required for IUD/LNG-IUS (Gebremariam & Addissie, 2014a). Intention to use a LARC method was low, and the main reasons again were fear of side effects and infertility. A higher level of education and a smaller ideal family size (and desire to delay childbearing for next two years) factored positively into the women's stated interest in a LARC method (Gebremariam & Addissie, 2014b). Interestingly, another study among married women in western Ethiopia found that women who made joint fertility-related decisions with their male partners were six times more likely to use LARC, and those who had a prior discussion with a FP counselor about LARC methods were 14 times more likely to use LARC (Melka, Tekelab, & Wirtu, 2015). Another positively associated

factor included having a television or radio, thus increasing the client's exposure to LARC messaging (Melka et al., 2015).

In Madagascar, a qualitative study with women who were considering the IUD revealed the staged decision-making steps that were made alongside varying levels of social support. Researchers identified the following stages: "Stage 1: perceived benefits of the IUD countered by initial fear; Stage 2: lingering fear of the IUD; [and] Stage 3: perceived ability to go to the clinic to receive the IUD" (Gottert, Jacquin, Rahaivondrafahitra, Moracco, & Maman, 2015, p. 291-293). During stage 1, women were aware of the benefits that an IUD provides for contraception, but were still afraid of having the device inside of them and the associated health risks. Upon hearing these fears and misperceptions, FP counselors were often able to step in and correct the misinformation. However, during stage 2, the assistance of a health provider was not sufficient for many to truly consider the IUD, and women desired to hear independent advice from other IUD users they knew in their community. Once this occurred, women felt more comfortable and confident in proceeding to a clinic to receive the device (stage 3) (Gottert et al., 2015).

In Kenya, research participants were given the option of choosing from a variety of contraceptive methods and then asked why they decided on LARC methods. The implant was the most popular (at 30 percent), while the LNG-IUS (16 percent) and copper IUD (2.5 percent) were chosen far less frequently (Hubacher, Masaba, Manduku, & Veena, 2013). Women preferred the implant because they believed it was less painful to insert and remove, had fewer side effects, did not involve an invasive pelvic exam, and could not fall out or move in the abdomen as they believed the other methods could. The most commonly cited reasons for not choosing the LNG-IUS were fear of pain or discomfort, hormonal side effects, and modesty

around the insertion procedure. Still, women preferred the LNG IUS to the copper IUD primarily because of their preference for a five-year duration of action over the ten-year duration of action (although this shows they were unaware that the copper IUD could be removed at any time), in addition to belief of fewer side effects and lighter menstrual bleeding (Hubacher et al., 2013).

5.3.2 International Commitment

For the past two decades, international aid money has been earmarked for other public health initiatives within SSA that focus on more urgent concerns such as the HIV/AIDS epidemic, battling tuberculosis, and malaria (Jacobstein et al., 2009; Mbizvo & Phillips, 2014). FP programs were generally underfunded and thought to be of less immediate importance. The 1994 International Conference on Population and Development (ICPD) was a remarkable moment for SRH rights; it was at this conference that women's rights, gender equality, and universal access to reproductive health were recognized as key components to development (UNFPA, 2008). In 2007, following the Millennium Summit held in 2000, achieving universal access to reproductive health was added to Millennium Development Goal (MDG) 5, which focused on reducing the maternal mortality ratio (MMR) by 75 percent between 1990 and 2015 (Patel, 2014). A key indicator for measuring global MMR reduction (target 5A) was the proportion of deliveries attended by skilled health personnel. Other health indicators were chosen to measure progress in achieving universal access to reproductive health (target 5B), including the contraceptive prevalence rate, adolescent birth rate, and antenatal care coverage. However, progress in reaching this MDG sub-target has been limited. Despite promising

international momentum, contraception for many national governments remains a controversial topic for discussion at the international level.

Women in SSA cannot afford to wait for stalled public health commitments to FP and SRH services. Given current population growth projections in the region, FP services must expand by an estimated 50 percent from 2005 levels to maintain the current mC prevalence rate in the year 2020 (Jacobstein et al., 2009). This essentially means, “programs will have to run much faster just to remain in the same place” (Jacobstein et al., 2009, p. 150), with no improvements made in increasing low mC use or decreasing high unmet need.

The 2012 London Summit on Family Planning set forth an ambitious goal of enabling 120 million more women in the developing world to gain access to FP services by 2020 (Peterson, Darmstadt, & Bongaarts, 2013). One outcome of the summit was the initiative Family Planning (FP) 2020, described as a “global partnership that supports the rights of women and girls to decide freely and for themselves whether, when, and how many children they want to have” (Family Planning, 2015a). FP 2020 is promoted by the United Nations Foundation and tied directly to Sustainable Development Goals (SDGs) 3 and 5, which call for universal access to SRH services and rights by 2030 (Okonofua, 2014). Global commitment to FP 2020 goals is crucial to improving prospects for FP services in the developing world.

Support for FP 2020 comes from the International Youth Alliance for Family Planning (IYAAP), International Federation of Gynecology and Obstetrics (FIGO), International Planned Parenthood Federation (IPPF), and the International Confederation of Midwives (ICM) in addition to major ID players such as USAID and the Bill & Melinda Gates Foundation (Family Planning 2020, 2015b). FP 2020 recently released a statement in 2015 entitled *Global Consensus Statement for Expanding Contraceptive Choice for Adolescent and Youth to Include*

Long-Acting Reversible Contraception. It promotes improving access to LARC for all sexually active youth, and ensuring LARC methods are included in a balanced mC method mix during FP consultation (FP2020, 2015a). Thirty least developed countries (LDCs) have signed on to the FP 2020 initiative, together with big donors pledging more than \$4.6 billion in future funding (Fabric et al., 2015). While involved INGOs and state actors have publically pledged support and political commitment, the initiative lacks real enforcement or meaningful accountability standards to hold its members responsible for completing any agreed upon tasks. This may prove to be the largest obstacle in achieving the goals set at the 2012 London Summit.

Friday Okonofua, Editor of the *African Journal of Reproductive Health*, believes that while recent international attention towards FP and SRH services in SSA is a good start, national governments must now take the lead through further political commitment to implementing the SDGs. As he states, “most African governments have shown poor commitment to [FP] services over the past two decades...[due to] internal conflict and beliefs about [FP], and...limited prioritization of health and social development issues” (Okonofua, 2014, p. 10).

5.3.3 Cost-Benefit Analysis

The cost-savings related to mC use are impressive. One study calculated that for every \$1,000 spent on FP and mC, \$3,700 is saved over a ten-year period due to reductions in associated costs for obstetric care, childhood immunization, and primary school enrollment (Cleland & Machiyama, 2015). Countries that invest in mC save \$1.40 in MCH services for every \$1.00 spent (Mbizvo & Phillips, 2014).

LARC methods are commonly underutilized due to their high initial cost at insertion, in addition to the need for specialized equipment, sterile materials, and more time for provider-

client counseling and interaction (May et al, 2011; Neukom et al., 2011). However, LARC has proven to be the most cost-effective mC method when considering duration of use, efficacy, and long-term user savings (Doyle et al., 2008; Blumenthal et al., 2011; Mbizvo & Phillips, 2014). Even when not used for its full duration, LARC becomes cost-saving within three years of use, compared to short-acting reversible methods (Trussell, Hassan, Lowin, Law, & Filonenko, 2015). In one US study, LARC saved \$7.00 in costs of unintended pregnancy for every \$1.00 spent (Tsui et al., 2010).

Although the IUD has a high initial cost at insertion, once the device is used for two or more years it becomes more economical than other short-term methods (e.g., oral contraceptives, injectables) that require the user to return for multiple resupply visits (Rajani, 2006). In fact, the IUD is the least costly reversible form of mC on the market today, at just \$0.58 for average annual direct costs per user (Singh et al., 2014).

In 2008, on average, contraceptive progestin implants cost \$27.00 each (Hubacher et al., 2008). However, in 2013, the manufacturers of Jadelle and Implanon through agreements with international partners agreed to drop the price to \$8.50 per unit for all countries in SSA with maternal mortality rates greater than 100 to 150 per 100,000 live births (Reproductive Health Supplies Coalition, 2013). The manufacturer of Sino-Implant II, an implant similar to Jadelle, has also recently sold the unit in developing countries for one-third the cost of other implants (Greene & Stanback, 2012). These public-private partnerships result in price-volume guarantees that have made implants more widely accessible and cost-competitive (Duvall et al., 2014)

While the cost of providing LARC may be substantial at onset, the savings from estimated pregnancies that are averted are overwhelmingly larger. Annual household expenditures for contraceptive can account for 5 percent up to 20 percent of annual income in

SSA (Blumenthal et al., 2011). Many health INGOs provide low cost FP services to SSA women who cannot afford them by providing vouchers and heavily subsidized FP services to clients; interventions funded by USAID often procure LARC directly through price negotiations with pharmaceutical companies, which frequently make large-scale cost reductions or donations.

6.0 CONCLUSION

FP services allow women to choose the size and timing of their family, and lessen the burden of unintended pregnancy. Access to such services has a tremendous positive impact on the health of mother and child, educational attainment, poverty alleviation, and female empowerment in the developing world. LARC methods are a new way forward in the discussion of mC in SSA, where women rely primarily on short-acting reversible contraception that is more likely to fail.

Twenty articles, covering ten interventions in 16 SSA countries met selection criteria for this paper. Various obstacles to effective LARC provision exist in SSA. Substantial supply side barriers (i.e., provider bias, failing health infrastructure, weak political support, poor funding, and breaks in the supply chain), and significant demand side barriers (i.e., myths and misperceptions, little knowledge, limited access to services, and social stigma) for policy makers, providers, and clients abound. Shared intervention strengths include engaging with key stakeholders and clients in their own communities, as well as appropriately addressing obstacles to effective LARC provision. Shared intervention weaknesses include heavy reliance on donor funding, top-down program governance, and a missing long-term sustainability plan. Regional factors influencing client uptake, international commitment to LARC, and a cost-benefit analysis of mC methods are also important considerations. This final chapter concludes with recommendations for future SRH and FP interventions, paper limitations, and the overall public health significance of LARC promotion in FP programs for SSA.

6.1 RECOMMENDATIONS FOR FUTURE INTERVENTIONS

Five major recommendations for international development practitioners were formulated by analyzing effective interventions. Recommendations are summarized in Table 2.

Table 2: Summary of Recommendations

1. Decentralization of Health Care Networks	<ul style="list-style-type: none"> • Adopt the practice of task shifting (i.e., train lower-level providers to insert and remove the IUD and implant). • Improve access to FP services at the local level through creative service delivery mechanisms (e.g., mobile clinics, community referral agents). • Create public-private partnerships for LARC services (e.g., price-volume guarantees for LARC procurement).
2. Capacity Building	<ul style="list-style-type: none"> • Improve LARC service delivery through strengthened clinical provider training. • Integrate LARC procurement into national supply chain systems. • Include LARC in other MCH and SRH services (e.g., HIV/AIDS, STIs, postpartum care).
3. Advocacy and Education	<ul style="list-style-type: none"> • Create supportive policy environment at the regional and national level to ameliorate supply side barriers. • Focus educational outreach on male partners and spouses, stressing importance of joint decision-making for mC. • Educate clinical providers to eliminate provider bias.
4. LARC Champions	<ul style="list-style-type: none"> • Recruit passionate providers and satisfied users to promote LARC in community and increase demand for services. • Engage LARC champions in advocacy work at regional and national levels. • Ensure client-provider interaction is high quality.
5. Community Awareness	<ul style="list-style-type: none"> • Use social and behavioral change communication (SBCC) to improve community awareness. • Use community-based approaches (e.g., interpersonal communication) with CHWs and BCC agents in rural settings. • Use variety of communication channels (e.g., radio, billboards), and culturally sensitive messages and imagery.

6.1.1 Decentralization of Health Care Networks

The first recommendation related to decentralizing health care networks is to adopt the practice of “task shifting.” Task shifting is used to increase community level health care access, and is an innovative response to the shortage and uneven distribution of qualified medical providers in much of SSA (WHO, 2013). The policy means that mid-level medical providers (e.g., nurses, midwives) who do not have the competencies for specific tasks are trained for certain procedures that higher-level providers (e.g., doctors) typically perform (Babalola & Yinger, 2013; Greifinger, 2015). Task shifting has had previous success with public health interventions addressing the management of childhood illness and injectable contraceptive service delivery (Asnake et al., 2012). In fact, many countries already allow low- and mid-level health personnel to deliver a range of contraceptive methods (WHO, 2013). One study published in the journal *Reproductive Health* found that employing task shifting for LARC provision is both a safe and effective way to increase mC use (Polus et al., 2015).

The WHO recommends that nurses, midwives, and auxiliary nurse midwives (but not CHWS or CBRHAs) be able to insert and remove implants and IUDs following competency-based trainings (Mbizvo & Phillips, 2014; WHO, 2013). MSI already employs task shifting in its FP services globally (Duvall et al., 2014). Pathfinder International also employed task shifting in Ethiopia to train HEWs on implant insertion and removal at their village-level health posts (Asnake et al., 2011). While task shifting permits lower-level health providers to perform a procedure or duty normally “off limits” to them, the strategy does not compromise the medical fundamentals of care (Pile et al., 2007).

The second recommendation related to decentralization is to improve access to FP services at a more local level. Geographical barriers to access frequently prevent women from

reaching LARC services when they desire to do so (Cleland, 2009). INGOs cannot solely rely on static health facilities, often located in urban or semi-urban areas, for distributing LARC; mobile clinics, community referral agents, and other forms of community-based provision are innovative approaches to better reaching the client. Women living in rural areas are often restricted in their mobility due to little transportation and exorbitant costs to travel to urban areas where FP clinics are located. Expanding FP services by dispatching mobile clinics and outreach agents to rural areas further improves access, as the number of trained health personnel in these settings is severely lacking (Asnake & Tilahun, 2010; FHI, 2007; Taylor, 2008a). MSI is just one INGO that uses a network of interrelated service delivery channels to reach women located in different and remote geographical areas (Duvall et al., 2014).

When it comes to these two recommendations (i.e., task shifting and improving access to services), the creation of public-private partnerships for LARC services is an important factor for success. Private sector provision (e.g., privately run clinics, hospitals, pharmacies, and NGO facilities) differs from public sector provision (e.g., government run clinics, hospitals, and public health workers) for FP services (Ugaz, Chatterji, Gribble, & Mitchell, 2015, p. E4). In SSA, one survey of married women ages 15 to 29 in 18 countries showed the great majority of mC is obtained through public provision (72 percent) (Ugaz, et al., 2015). Indeed, the majority of FP services in SSA are provided by the public sector that offers a very limited range of mC, generally focused on promoting short-acting reversible methods (Mbizvo & Phillips, 2014). When one or two methods are overwhelmingly used in a country, the mC method mix is skewed. Method skew may reflect cultural and social norms, or more concerning factors including government population policies, lack of access, and provider bias (Sullivan et al., 2006). It has been shown that the more mC methods available, the greater the likelihood of their use (Pile et

al., 2007). Engaging the private sector to provide LARC services can expand the mC method mix available to women who can afford to pay for these services (FHI, 2007). The WHO and UNFPA both recommend that the public and private sectors collaborate and coordinate their service delivery approaches to provide greater access to FP services for urban and rural clients alike (UNFPA, 2008; WHO, 2012).

While decentralizing health care networks brings services closer to the people, efforts must be made to ensure that national level commitment to LARC method expansion is met with local level commitment and enthusiasm (UNFPA, 2008). As was the case in Uganda, national health policy was centralized, but budgetary decisions and service delivery coordination were managed at the district and village level; this led to a frustrating lack of coordination (Subramanian, 2008). In Guinea, the pronatalist policies of a military regime that had held power for decades left an intractable mark on efforts to provide comprehensive FP services to Guinean families, who were actively pressured to have many children (Escandon et al., 2006). Only when the government changed hands, with a new leader who understood the importance of providing FP services, did the situation on the ground slowly start to improve. These examples underscore the importance of political support when implementing FP programs that focus on LARC provision in SSA.

6.1.2 Capacity Building

The first recommendation related to capacity building is to improve LARC service delivery through strengthened provider training. The WHO recommends routine training, support, and supervision for insertion and removal techniques, in addition to continued monitoring and evaluation measures (WHO, 2012). FP providers commonly stated that their relative

inexperience with proper insertion, removal, and sterile procedure biased them against promoting LARC. Providers must be trained in proper insertion and removal procedures; in fact, most infections can be attributed to the time of insertion and are preventable with the proper measures (e.g., antiseptic insertion and infection prevention techniques) (Doyle et al., 2008). Training in pre-insertion counseling is also important, as providing potential clients with information regarding the LARC device can help them better tolerate known side effects when and if they experience them following insertion. As Ladipo and Akinso (2005) state, “counseling and education remain powerful tools in overcoming barriers to poverty, illiteracy, and conservative social customs” (p. 21). FP programs must also guarantee that women can access same-day, low cost removal services, which means that the necessary removal supplies and referral systems for women who accessed services through mobile outreach must be strengthened (RHSC, 2013). MSI was one such INGO that focused heavily on the strengthening of implant removal services in its regional work (Duvall et al., 2014).

The second recommendation for capacity building calls for greater integration of LARC devices and services into national supply chain systems and other MCH service provision. Effective FP interventions should ensure that LARC devices are integrated into nationally maintained commodity logistics systems that account for the devices in national budgetary spending, thereby eliminating reliance on donor funding (Ladipo & Akinso, 2005). Ensuring LARC provision through a reliable supply chain means that women have a greater degree of security when it comes to meeting their demand for FP services. MSI recommends that INGOs collaborate with national governments to ensure that LARC devices and equipment are supplied in a steady and reliable fashion (May et al., 2011). FHI 360 proposes that LARC methods should be included on lists of essential drugs, which can further improve availability. In fact, the WHO

publishes a *World Health Organization Model List of Essential Medicines*, and added two implants to the list in 2007, considering them among the most essential drugs in a basic healthcare setting (FHI, 2007). Often, medical clinics lack the requisite surgical materials for LARC insertion or removal because they have not been included on a list of essential supplies (Mbizvo & Phillips, 2014).

Integration of LARC service provision into other MCH and SRH discussions around HIV/AIDS, STIs, HPV, postpartum and postabortion care is also seen as a promising practice recommended by the WHO (Jacobstein et al., 2009; Mbizvo & Phillips, 2014; WHO, 2012). Clinical providers and community health workers should be encouraged to speak with clients around mC and LARC methods in other health settings where the discussion may not have been previously considered (e.g., STI/HIV screening clinic, prenatal care consultation, postpartum check up). As more international development health policies (e.g., the United Nation’s MDGs and SDGs) support women giving birth with skilled birth attendants in health facilities, there is an increased opportunity for postpartum insertion of an intrauterine contraceptive device (PPIUCD) that has had promising results in various developing countries (MCHIP, 2013).

6.1.3 Advocacy and Education

Advocacy entails the creation of a supportive policy environment regarding LARC and FP policies at the regional and national level. Both international development practitioners and community “LARC champions” should conduct advocacy within the country (see recommendation 4). Engaging in advocacy is important when seeking redress for supply side obstacles to effective LARC provision, including failing health infrastructure, poor or nonexistent funding streams, and breaks in the supply chain. Advocacy should target not only

national policy makers who pass budgets and bills, but also providers and clients, to develop a strong base or constituency of support. Widespread stakeholder participation can be developed through advocacy that targets important local and national civil society groups, as well as nontraditional leaders (e.g., youth groups, men's and women's groups, faith-based organizations) (UNFPA, 2008).

To address funding concerns, advocates should stress the importance of LARC in other MCH and SRH fields, in addition to its role in national economic development (through permitting female economic participation and higher worker productivity). To address the social stigmas surrounding FP, advocates should play up the non-contraceptive benefits of using LARC with more conservative policy makers (see Appendix B). Advocates in countries with pronatalist policies should encourage policy makers to view LARC as vital for safe spacing intervals, and therefore improving overall maternal and child health outcomes. FHI 360 proposes that advocacy efforts focus on encouraging national health ministries to update and improve existing FP policies, medical guidelines, and protocols to reduce barriers to access (FHI, 2007). Interestingly, the ACQUIRE Project in Uganda had not originally thought advocacy to be a primary focus; however, it noted that as the IUD revitalization intervention began it became an essential component of the program (Subramanian et al., 2008).

Education should be approached as an ongoing conversation or exchange with clients, rather than a one-directional process (Greifinger, 2015). Effective education focuses on correcting demand side barriers to LARC provision; that is to say, myths and misperceptions over health concerns, little knowledge or access, and social stigma. Education should include targeted outreach for male partners, who are often the sole decision-makers in patriarchal households (Babalola et al., 2013; Babalola & Yinger, 2013). Frequently, FP interventions focus

on serving the woman to the detriment of men's inclusion in the process (OlaOlorun & Tsui, 2010). With male support, women will not be forced to rely on traditional methods of contraception or to seek mC using covert measures. Men need to be made aware of their important role in joint decision-making regarding fertility preferences, and efforts should seek to increase their understanding and alter any negative perceptions around male involvement in FP. The WHO recommends reaching men and women in their communities through CHWs and targeted promotional communication campaigns (WHO, 2012).

Education must also target clinical providers; provider bias is a larger obstacle than many may believe. Often it is the provider who has misinformation regarding contraception (e.g., IUDs spread STIs, can only be inserted during certain time in menstrual cycle, are off limits for women who are breastfeeding) that is then passed on to the client. Provider bias includes reluctance to suggest LARC because of its time intensive nature for insertion and removal (compared to short-acting reversible methods), in addition to low confidence in performing the insertion safely (Greifinger, 2015; Rajani, 2006). Moral and religious objections also prejudice provider decisions against offering LARC (Babalola & Yinger, 2013; Goldstruck, 2014). Most of these aspects of provider bias can be corrected with evidence-based education. Additionally, mC is most frequently discontinued due to side effects or health concerns experienced by the user (Doyle et al., 2008; Cleland & Machiyama, 2015). If providers can be taught to effectively address this during client-provider counseling, users will be better prepared to handle potential side effects, which generally last for only the first three to six months following insertion.

6.1.4 LARC Champions

Creating demand for LARC services must be considered as important an investment as increasing access to LARC services (Cleland & Machiyama, 2015). Globally, almost 20 percent of married women who use mC choose the IUD (Bluestone et al., 2006). In absolute value, it is the most commonly used reversible contraception method worldwide. However, demand for the IUD is highly concentrated in certain parts of the world (e.g., Europe, Asia), and basically excludes most of SSA. The same can be said of the contraceptive implant, which has been slow to gain traction in SSA. To improve visibility and demand for these services, passionate providers and satisfied users can promote LARC by emphasizing its effectiveness, safety record, and relatively minor side effects to clients, fellow medical professionals, and larger mass media outlets. These passionate providers and satisfied users will be “LARC champions,” visibly promoting the method at work and in their communities to spark interest and discussion around its use. Additionally, LARC champions can serve as policy advocates at the regional and national levels, lobbying for support of advantageous national health policies that promote FP services and providing LARC methods.

Satisfied LARC users can champion the method by speaking with potentially interested clients at local level community outreach events (Gottert et al., 2015). The ACQUIRE Project in Ethiopia employed satisfied user testimonials on radio talk shows, allowing interested clients to call in and ask questions in a shared yet informal setting (Taylor, 2008a). Such testimonials do not necessarily require a modern communication channel; effective interpersonal communication with satisfied users and outreach agents (e.g., CHWs, CBRHAS) may be even more effective in rural settings where literacy and exposure to mass media is low. As formative research conducted by MSI indicated, women valued the advice and feedback of their peers when making

fertility-based decisions, and found the most influential source of information to be peers who had previously used MSI services (Duvall et al., 2014). A policy brief out of Malawi stresses that successful FP programs should employ local men and women who are familiar with or currently using LARC methods to talk about it with prospective clients, particularly focusing on why they chose it and the benefits they have received from it (Babalola et al., 2013). Health INGOs should also actively recruit respected individuals and influential civil society organizations to become visible LARC champions in mass media communication campaigns (Jacobstein et al., 2009).

It is also important, on the discussion of LARC champions, that the interaction between client and provider is high quality, meaning that the client is well-informed, the provider is skilled and passionate about LARC, and the service site is well supplied and managed (Pile et al., 2007). Passionate LARC providers who have a good reputation in the eyes of their clients are destined for greater success than those who begrudgingly accept to provide LARC services. For effective providers, “commitment, attitude, and work ethic are as important as clinical skills” (Neukom et al., 2011, p. 451).

6.1.5 Community Awareness

For FP programs that seek to introduce LARC, minimal client knowledge regarding mC and how to access it, as well as initial social resistance to mC are major barriers to project success (Cleland & Machiyama, 2015). Community awareness can be improved through social and behavior change communication (SBCC) that spreads thoughtful FP messages through a variety of channels (e.g., print, television, radio, community outreach). SBCC has been effective in changing general attitudes and increasing knowledge of FP even among populations with low

literacy (Melngailis & Eber, 2006; Jacobstein et al., 2009). Effective SBCC targets both the primary audience (e.g., potential users) in addition to secondary audience members (e.g., policy makers, providers, spouses, males). Mass media campaigns that also engage with local religious and traditional leaders improve the social acceptability of mC use (Cleland & Machiyama, 2015). In rural settings, community-based approaches (e.g., interpersonal communication with peer educators, trained BCC agents and CHWs) that address demand side obstacles and potential health concerns are most effective (FHI, 2007; Mbizvo & Phillips, 2014). These approaches are strong because CHWs and BCC agents who are recruited from the community share a common language and customs with their clients, and are viewed as trusted sources of information (Cleland, 2009).

Effective SBCC should consider the FP needs of women and their short- and long-term considerations (e.g., user preference between initial costs versus length of protection). The overall objective should be to normalize the discussion around sex, particularly women seeking protection from pregnancy and STIs, and make it more acceptable for youth and nulliparous women in SSA to want to delay childbearing. Creative concepts and key messages should be given careful thought by first conducting formative research via focus groups and qualitative interviews in which possible themes can be pre-tested with an audience before diffusion (Melngailis & Eber, 2006). Messaging should be mindful of cultural preferences and gender norms, and skillfully address negative public sentiment around couples that choose to have smaller families than social norms may allow (Babalola et al., 2013).

Effective interventions used a variety of communication channels and culturally sensitive imagery that considered dress, language, religion, and customary practices (Blumenthal et al., 2013; FHI, 2008; Rajani, 2006; Taylor, 2008b). With multiple channels, there is a greater

likelihood of reaching a larger geographical area and more potential clients that may not have access to mainstream media (Duvall et al., 2014). Channel selection was often dependent on the most widely used media form (typically radio) and literacy rates of the population. Indeed, among adolescents in SSA, most report hearing about FP services through radio, television, and the newspaper, with a smaller percentage reporting actually visits to clinics or by CHWs (McCurdy et al., 2014). The use of cellphones as a communication channel should also be considered; telemedicine is an exciting new development that shows promise in connecting people to needed health care services in remote settings.

Evaluation methods conducted by INGOs during project implementation demonstrated that they too could have improved community awareness in a number of ways. For one, the IFHP in Ethiopia stated that more attention should be paid to providing IEC materials in local languages, in addition to the national language (Asnake & Tilahun, 2010). The ACQUIRE Project in Uganda also stated that its own demand creation activities should have used a wider range of communication channels and featured satisfied user testimonial at outreach events to improve reach and visibility (Taylor, 2008d).

6.2 LIMITATIONS

One limitation of this paper is that it is a literature review, and therefore added no original data to the existing literature on FP programs that provide LARC. It includes only published articles from peer-reviewed journals and website document databases that are in the English language. This may be problematic due to the fact that SSA is comprised of countries that speak many

different languages (e.g., Arabic, Swahili, Yoruba, and French), and thus potentially limits the inclusion of original research completed in the region.

Additionally, for many of the interventions studied, the only available literature reviewing the methods of service delivery and behavioral change communication was published and/or funded by the implementing agency. This may introduce a form of reporting bias, if in fact the intervention resulted in negative consequences or did not achieve the desired objectives. Large health INGOs have a strong desire to keep up appearances and preserve their reputation in the field of FP and SRH. There is potential for the published results to be purposefully skewed or misrepresented, and for a report to show its organization in the best light possible by underplaying or ignoring any negative findings. In other terms, INGOs are frequently criticized for their lack of transparency and accountability in setting program objectives early on in the intervention timeline, and later having no one to hold them responsible if they do not meet them.

6.3 PUBLIC HEALTH SIGNIFICANCE

In 2014, mC use by 652 million women worldwide prevented 231 million unintended pregnancies, and an estimated 1.1 million neonatal deaths and 100,000 maternal deaths (Singh et al., 2014). If the 225 million women who presently have an unmet need for mC were able to access it, an additional 52 million unintended pregnancies, 500,000 neonatal deaths, and 70,000 maternal deaths could be averted annually (Singh et al., 2014). Regions of the world with the greatest unmet need, including SSA, would see the largest gains in MCH indicators (Singh & Darroch, 2012).

For women in SSA, combined oral contraceptives and injectables dominate the mC method mix available to them (Cleland & Machiyama, 2015; Cleland & Shah, 2013). In fact, short-acting reversible methods account for 70 percent of the mC method mix, while LARC comprises less than 4 percent (Hubacher et al., 2011). Generally, women who desire to space out or postpone childbearing gravitate towards short-acting reversible methods, while those who want to stop having children altogether side for LARC. It is wrong to assume that women who want to space out or postpone births cannot use LARC; in fact, LARC is recommended for both women interested in postponing and those interested in stopping childbearing (Singh et al., 2014)

Women who choose LARC do not have to worry about strict adherence or repeated use at each intercourse. LARC has far lower typical and perfect use failure rates, and far higher continuation rates, when compared with short-acting methods (ACOG, 2011). In simplistic terms, with LARC you can “set it and forget it” until the appropriate time comes for removal. One study found that if 20 percent of the roughly 18 million women in SSA who currently use oral contraceptives or injectables were switched to the implant for longer-term protection, 1.8 million unintended pregnancies could be prevented over five years’ time (Hubacher et al., 2011). Additionally, the provision of LARC within FP services in SSA could prevent more than 70,000 maternal deaths, keeping more than 250,000 children from becoming orphans annually (Jacobstein et al., 2009).

Family planning saves lives. There are obvious health benefits for the woman, as well as indirect benefits to her children, family, and society at large when she is able to access FP services. A balanced mC method mix ensures that individuals can make the best choice given their unique medical needs and fertility preferences. In SSA, commitment to expanding the mC method mix by including LARC is vital to achieving universal access to FP services.

APPENDIX A: LITERATURE REVIEW ARTICLES

INTERVENTION (n=10)	SELECTED ARTICLES (n=20)
1. Kenya National Campaign, 2003–2006	<p>Family Health International. (2006). <i>Reintroducing the IUD in Kenya</i>. Research Triangle Park, North Carolina: Family Health International.</p> <p>Family Health International. (2010). <i>Repositioning of the intrauterine device continues</i>. Africa Health. Research Triangle Park, North Carolina: Family Health International.</p>
2. Guinea Mandiana District, Eight Month Pilot Program 2004	<p>Family Health International. (2008). <i>Reintroducing the intrauterine device in the Mandiana District of Guinea</i>. Research Triangle Park, North Carolina: Family Health International.</p> <p>Family Health International. (2010). <i>Repositioning of the intrauterine device continues</i>. Africa Health. Research Triangle Park, North Carolina: Family Health International.</p>
3. Guinea Siguiri District, 2004–2006	<p>Escandon, I., Diallo, M., Toure, B., Mack, N., & Bunce, A. (2006). <i>Community awareness of and attitudes toward long-acting and permanent contraception in Guinea</i>. New York, New York: The ACQUIRE Project/Engender Health.</p> <p>Taylor, J. (2008b). <i>Revitalizing Underutilized Family Planning Methods: Using Communications and Community Engagement to Stimulate Demand for the IUD in Guinea</i>. New York, New York: The ACQUIRE Project/EngenderHealth.</p> <p>The ACQUIRE Project/EngenderHealth. (2008). <i>Increasing awareness and use of long-acting and permanent contraceptive methods in Guinea: Case study of a pilot IUD intervention</i>. E&R Study No. 9. New York, New York: The ACQUIRE Project/EngenderHealth.</p>
4. Uganda Four Districts, 2005–2006	<p>Subramanian, L., Farrell, B., Kakande, H., Kumar, J., Johri, N., & Gutin, S. (2008). <i>Revitalizing long-acting and permanent methods of family planning in Uganda: ACQUIRE's district approach</i>. Evaluation and Research Study No. 10. New York, New York: EngenderHealth/The ACQUIRE Project.</p>

	Taylor, J. (2008d). <i>Revitalizing Underutilized Family Planning Methods: Using Communications and Community Engagement to Stimulate Demand for the IUD in Uganda</i> . New York, New York: The ACQUIRE Project/EngenderHealth.
5. Kenya Kisii District, 2005–2007	Rajani, N. (2006). <i>Revitalizing the IUD in Kenya</i> . New York, New York: The ACQUIRE Project/EngenderHealth. Taylor, J. (2008c). <i>Revitalizing Underutilized Family Planning Methods: Using Communications and Community Engagement to Stimulate Demand for the IUD in Kenya</i> . New York, New York: The ACQUIRE Project/EngenderHealth.
6. Ethiopia Amhara Region, 2005–2007	Taylor, J. (2008a). <i>Revitalizing underutilized family planning methods using communications and community engagement to stimulate demand for the IUD in Ethiopia</i> . New York, New York: The ACQUIRE Project/EngenderHealth.
7. Population Services International Six Countries, 2009–2010	Blumenthal, P. D., Shah, N. M., Jain, K., Saunders, A., Clemente, C., Lucas, B., . . . Eber, M. (2013). Revitalizing long-acting reversible contraceptives in settings with high unmet need: a multicountry experience matching demand creation and service delivery. <i>Contraception</i> , 87(2), 170-175. doi: 10.1016/j.contraception.2012.10.002
8. Ethiopia Four Regions, 2009–2013	Asnake, M., & Tilahun, Y. (2010). <i>Scaling up Community-Based Service Delivery of Implanon: The Integrated Family Health Program's Experience Training Health Extension Workers</i> . Watertown, Massachusetts: Pathfinder International. Asnake, M., Cole, C. B., Oliveras, E., & Tilahun, Y. (2011). <i>Scale-up of task-shifting for community-based provision of Implanon. 2009-2011 technical summary</i> . Watertown, Massachusetts: Pathfinder International. Asnake, M., Henry, E. G., Tilahun, Y., & Oliveras, E. (2012). <i>Addressing unmet need for long acting family planning in Ethiopia: Uptake of Implanon and characteristics of users</i> . Watertown, Massachusetts: Pathfinder International. Asnake, M., Henry, E. G., Tilahun, Y., & Oliveras, E. (2013). Addressing unmet need for long-acting family planning in Ethiopia: uptake of single-rod progestogen contraceptive implants (Implanon) and characteristics of users. <i>Int J Gynaecol Obstet</i> , 123 Suppl 1, e29-32. doi: 10.1016/j.ijgo.2013.07.003 Asnake, M., Solter, C., Tilahun, Y., & Vespia, M. (2013). <i>Strengthening Health Systems to Ensure Equitable Access to Implant Removal Services in Ethiopia</i> . Watertown, Massachusetts: Pathfinder

	International.
9. Zambia Four Provinces, 2008–2009	Neukom, J., Chilambwe, J., Mkandawire, J., Mbewe, R. K., & Hubacher, D. (2011). Dedicated providers of long-acting reversible contraception: new approach in Zambia. <i>Contraception</i> , 83(5), 447-452. doi: http://dx.doi.org/10.1016/j.contraception.2010.08.021
10. Marie Stopes International 15 Countries, 2008–2012	Duvall, S., Thurston, S., Weinberger, M., Nuccio, O., & Fuchs-Montgomery, N. (2014). Scaling up delivery of contraceptive implants in sub-Saharan Africa: operational experiences of Marie Stopes International. <i>Glob Health Sci Pract</i> , 2(1), 72-92. doi: 10.9745/ghsp-d-13-00116 May, K., Ngo, T. D., & Hovig, D. (2011). <i>Expanding contraceptive choices for women: Promising results for the IUD in sub-Saharan Africa</i> . London, England: Marie Stopes International.

	EXCLUDED ARTICLES
1.	Haggai, D. N. (2003). The Norplant experience in Zaria: a ten-year review. <i>African Journal of Reproductive Health</i> , 7(2), 20-24.
2.	Hubacher, D., Olawo, A., Manduku, C., Kiarie, J., & Chen, P. L. (2012). Preventing unintended pregnancy among young women in Kenya: prospective cohort study to offer contraceptive implants. <i>Contraception</i> , 86(5), 511-517. doi: http://dx.doi.org/10.1016/j.contraception.2012.04.013
3.	Hubacher, D., Akora, V., Masaba, R., Chen, M., & Veena, V. (2014). Introduction of the levonorgestrel intrauterine system in Kenya through mobile outreach: review of service statistics and provider perspectives. <i>Glob Health Sci Pract</i> , 2(1), 47-54. doi: 10.9745/ghsp-d-13-00134
4.	Jacobstein, R., Malema, D., Ndambuki, S., Ndede, F., & Malawezi, J. (2003). Final assessment: long-term and permanent contraception (LTPC) and postabortion care (PAC) programs, 1999-2003, Malawi (pp. [59] p.): Nairobi, Kenya, EngenderHealth, East and Southern Africa Regional Office, 2003 Sep.
5.	Khu, N. H., Vwalika, B., Karita, E., Kilembe, W., Bayingana, R. A., Sitrin, D., . . . Allen, S. A. (2013). Fertility goal-based counseling increases contraceptive implant and IUD use in HIV-discordant couples in Rwanda and Zambia. <i>Contraception</i> , 88(1), 74-82. doi: http://dx.doi.org/10.1016/j.contraception.2012.10.004
6.	Mayi-Tsonga, S., Obiang, P. A., Minkobame, U., Ngouafo, D., Ambounda, N., & de Souza, M. H. (2014). Introduction of postabortion contraception, prioritizing long-acting reversible contraceptives, in the principal maternity hospital of Gabon. <i>International Journal of Gynaecology and Obstetrics</i> . doi: http://dx.doi.org/10.1016/j.ijgo.2014.03.012

7.	Ojule, J. D., Oranu, E. O., & Enyindah, C. E. (2012). Experience with Implanon in Southern Nigeria. <i>Journal of Medicine and Medical Sciences</i> , 3(11), 710-714.
8.	Pfitzer, A., Mackenzie, D., Blanchard, H., Hyjazi, Y., Kumar, S., Lisanework Kassa, S., . . . Smith, J. M. (2015). A facility birth can be the time to start family planning: Postpartum intrauterine device experiences from six countries. <i>International Journal of Gynaecology and Obstetrics</i> , 130 Suppl 2, S54-S61. doi: http://dx.doi.org/10.1016/j.ijgo.2015.03.008
9.	Prager, S., Gupta, P., Chilambwe, J., Vwalika, B., Neukom, J., Siamwanza, N., . . . Blumenthal, P. D. (2012). Feasibility of training Zambian nurse-midwives to perform postplacental and postpartum insertions of intrauterine devices. <i>International Journal of Gynaecology and Obstetrics</i> , 117(3), 243-247. doi: http://dx.doi.org/10.1016/j.ijgo.2012.01.013
10.	Solo, J., Jacobstein, R., & Malema, D. (2005). Malawi case study: Choice, not chance. A repositioning family planning case study (pp. 36 p.): New York, New York, EngenderHealth, ACQUIRE Project, 2005 Sep.

APPENDIX B: TYPES OF LONG-ACTING REVERSIBLE CONTRACEPTION

	Copper IUD	LNG-IUS	Contraceptive Implant
Mechanism of Action	-Spermicidal effect -Inhibits sperm migration to egg	-Spermicidal effect -Inhibits sperm migration to egg -Thickens cervical mucus	-Thickens cervical mucus -Suppresses ovulation -Alters endometrium lining
Failure Rate	0.2%	0.3%	0.1%
Effective Duration	10 year FDA approval	5 year FDA approval	3 year FDA approval
Insertion and Removal Process	-Trained provider will insert IUD with help of speculum, tube slider through vaginal opening and cervix, into uterus -Removed by provider by grabbing IUD strings (hanging out of cervix) with forceps and slowly pulling it through cervix and out vaginal opening	-Trained provider will insert LNG-IUS with help of speculum, tube slider through vaginal opening and cervix, into uterus -Removed by provider by grabbing LNG-IUS strings (hanging out of cervix) with forceps and slowly pulling it through cervix and out vaginal opening	-Trained provider will perform transdermal insertion with preloaded applicator into upper arm -Removal requires minor surgical procedure by scalpel cut made in upper arm after feeling for implant's location
Insertion Period	-Any time in menstrual cycle -Postpartum and postabortion	-Any time in menstrual cycle -Postpartum and postabortion	-Any time in menstrual cycle -Postpartum and postabortion
Common Side Effects	-Heavier bleeding during menses -Dysmenorrhea (painful menses) -Potential for expulsion or perforation of uterus	-Change in bleeding patterns (frequency, amount, duration) -Less common side effects: weight gain, headaches, abdominal pain, acne, dizziness, nausea, breast tenderness, mood changes	-Change in bleeding patterns (frequency, amount, duration) -Less common side effects: weight gain, headaches, abdominal pain, acne, dizziness, nausea, breast tenderness, mood changes

		-Potential for expulsion or perforation of uterus	-Potential for difficulty in removal following implant migration
Non-Contraceptive Benefits	-No hormonal side effects -Can be used as emergency contraception -Protective effect against endometrial cancer	-Improves dysmenorrhea (painful menses) -Increases hemoglobin -Prevents anemia -Treats menorrhagia (heavy vaginal bleeding) -Reduces symptoms of endometriosis	-Results in lighter, less frequent or absent menstrual bleeding -Improves dysmenorrhea (painful menses) -Prevents anemia
Onset of Effectiveness	Immediate	Immediate	24 to 48 hours post-insertion
Return to Fertility	Immediate	Immediate	Immediate
Discontinuation Rate (Year 1)	8% to 26%	16% to 24%	20% to 25%
Top Reason for Discontinuation	-Vaginal bleeding -Abdominal pain	-Altered bleeding pattern -Abdominal pain	-Irregular bleeding
HIV/AIDS Medical Eligibility Criteria	-Category 2 (recommended) for women with HIV -Category 3 (usually not recommended) for women with AIDS	-Category 2 for women with HIV -Category 3 for women with AIDS	-Category 1 (no restrictions) for women with HIV/AIDS

Sources consulted:

Blumenthal et al., 2011; Espey & Ogburn, 2011; RHSC, 2013; WHO, 2015a; WHO, 2015b.

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