The changing position of IUDs in reproductive health services in developing countries: opportunities and challenges

John W. Townsend, Roy Jacobstein

Reproductive Health, Population Council, New York, NY 10021, USA

ACQUIRE Project, EngenderHealth, New York, NY 10001, USA

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Abstract

The shared goals of contraceptive development and service delivery efforts are to help individuals and couples achieve their fertility intentions in a healthy, affordable and timely manner. Some would believe that now that contraceptive use has reached 60% in developing countries, there is little need for further investment in product research and development or family planning service delivery for developing countries. The expected growth (40%) in the demand for contraception by 2025 and the prevailing levels of unmet need for contraception (17%) in developing countries suggest that continued efforts to ensure that health systems and donors support family planning services are necessary. The IUD has the potential for enhancing women’s health and the ability to both space and limit births at an affordable cost. Organizations involved in product research and development can join with service delivery partners to make new products more accessible to individuals in developing countries.

Keywords: IUD; Contraceptives; Reproductive health; Family planning; Public–private partnerships

1. Background

Researchers, policy makers and sponsors of contraceptive development sharpen their investments and leads by understanding the context in which clients, families and health systems will use the products emerging from the long process from discovery to marketing. While the character of the global burden of disease is expected to change over the next 25 years, with deaths shifting from younger to older ages, and from communicable, maternal, perinatal and nutritional causes to noncommunicable causes [1], the mortality and morbidity associated with unwanted fertility, unsafe abortion and unsafe births will remain important elements of health policy in developing countries, given the potential impact of family planning on maternal and childhood deaths [2], the international conventions on women’s health and rights, and the plan of action from the Safe Motherhood movement [3].

Over the past 50 years, since the launch of the first national family planning programs and the public sector procurement of safer and more effective contraceptive technologies, there has been a consistent trend of increasing use of contraceptive methods in developing countries. This achievement has been accompanied by a global process referred to as the demographic transition, i.e., the gradual change in health outcomes in most countries from high mortality and fertility to lower fertility and mortality. Since 1960, the use of any contraceptive method by women 15 to 49 years of age in developing countries has increased from under 10% to nearly 60% [4]. At the same time, the average number of births per women has declined in developing countries from 6 to about 3. This is even more remarkable in that it has been accomplished during a period, and as a result, of increasing specific commitments by national governments and international conventions to client rights and choice. Social coercion was never required, as some governments and policy makers once believed, as communities, families and individuals learned that using effective modern contraception to plan the timing and spacing of their families was feasible, beneficial and in their own best interest.

The most popular contraceptive methods in terms of current use in developing countries are sterilization, both for women and men (23%), the intrauterine contraceptive device or IUD (15%), and oral contraceptive pills (6%). For limiting births, female sterilization is used about seven
times more frequently than male sterilization globally. For women and couples who want no more children, the IUD’s high degree of effectiveness is comparable to that of sterilization, yet, unlike sterilization, IUD use is quickly and completely reversible. Also, because it is nonsurgical and more cadres of providers can provide the method, the IUD is cheaper and easier to provide than sterilization. Indeed, after about 3 years of use, the IUD is the most cost-effective method of all, for spacers as well as limiters. In addition, the IUD is very safe for most categories of women, including those who are postpartum, postabortion or at intervals between pregnancy, as well as those who might be breastfeeding, young, nulliparous and/or HIV-infected.

Although there are a number of IUDs on the market, the device most commonly provided through public procurement programs internationally is the TCU380A (copper T). It is available commercially under the name ParaGard® and is distributed by Duramed, a subsidiary of Barr Pharmaceuticals, Inc. The TCU380A is highly effective (>99% during first year) and is often used for longer periods among those who are well counseled, e.g., 88% who begin the method still use it at 12 months, and it can be used for up to 12 years. The levonorgestrel-releasing intrauterine system (LNG IUS) was developed in 1979 at the Population Council, as a contraceptive combining the features of oral contraceptives and an IUD. It is manufactured and distributed by Schering Oy, Finland. The product consists of a T-shaped plastic frame and a white cylinder-shaped hormone reservoir around the vertical arm of the frame. The system releases 20 μg/24 h of the hormone levonorgestrel into the uterus, where it acts primarily via local effects. The LNG IUS is approved for up to 5 years of protective use. The LNG IUS is generally popular with women who use them and is particularly well suited for women with heavy menstrual bleeding or for whom other IUDs are unacceptable. In both more developed and less developed countries, the IUS is marketed in the private sector under the name Mirena®. The clinical profiles of these products are presented elsewhere in this special issue of Contraception.

Some would believe that now that contraceptive use has reached 60%, there is little need for further investment in product research and development or family planning support for developing countries. But there are several reasons why this is not the case. First, this respectably high level of contraceptive use masks great regional differences. For example, certain populous countries have very high levels of use, e.g., China (82%), Brazil (77%) and Mexico (68%). Sub-Saharan Africa, on the other hand, has a prevalence of only 27%, with West Africa only reporting 13% and East Africa only 23%.

However, the reality of unmet need encompasses not only the contraceptive prevalence use rates, but also the absolute levels of demand and need. This later consideration is even more important given that, due to the population momentum inherent in the young age structure of much of the population in developing countries, the largest cohorts in human history are entering their reproductive years. For example, in sub-Saharan Africa, where fertility declines have been slow to emerge, up to 33% of the population is between 10 and 24 years of age — over 257 million young people. As a result of this youth bulge in many developing countries and the increasing need for contraception, the UN estimates that between 2000 and 2025, the world’s population will increase by nearly a third, from about 6 billion to nearly 8 billion people, and the number of women expected to use some method of contraception will increase nearly 40%, from 535 to about 746 million users [5]. It is critical that public sector leaders and health programs, as well as international donors, continue to support family planning. But in any event, it is unlikely, especially in the context of health sector reform, that the public sector alone in most developing countries will be able to increase the supply of affordable services to meet the expected demand in the next 20 years.

But the problem of need lies not only in the future. Even at present about 105 million married women (17%) in developing countries report current unmet need for contraception; that is, they do not want to become pregnant but are not using any method of contraception [6]. Of this unmet need, about half (9%) is for spacing births, and nearly the same proportion (8%) is for limiting births. As with levels of contraceptive use, the level of unmet need varies significantly by region (from 11% in Central Asia and 16% in the rest of Asia, except China, to 24% in Africa), as do preferences for the outcome (e.g., 6% of married women want to space in Latin America, while in sub-Saharan Africa the comparable figure is nearly 16%). Unmet need among older women is almost exclusively focused on limiting.

There clearly is a larger potential role for the IUD as the method, which, despite its high degree of effectiveness, safety and long duration of efficacy, is used by only 3.5% of women in South Asia and 1.4% in Africa. The goals of any family “planning repositioning effort” should be to increase access to a range of methods, to increase the use-effectiveness of the methods of contraceptive chosen, to increase the long-term use of the methods selected and to reduce the cost of contraception over the long term. Notwithstanding the IUD’s positive features and potential contributions to health, the best strategies for how to reposition the IUD, and indeed family planning, in those countries most at need can be elusive. The reasons behind these dynamic and possible strategies for addressing this problem are presented below.

2. Conceptual framework for changing the position of IUDs

How then should we think about the role of contraception, and specifically the IUD, in our efforts to meet this currently unmet and future demand? Simply making a
range of products available is clearly insufficient. Potential clients have both the right to choose the number and timing of the birth of their children, as well as the type of contraception that is most convenient and acceptable to them. Women and men also appropriately have different preferences based upon their age, fertility intentions and lifestyle. Whether a man or a woman, the client who uses a contraceptive method does not do so in isolation and therefore should not be considered in isolation, but rather in sociocultural context (Fig. 1).

Method characteristics profoundly affect who might select a particular method. Some of the most method-specific characteristics and questions related to them include how the contraceptive is taken or used, where in the body it is provided, its mechanisms of action to prevent pregnancy, its ease of access and affordability, whether correct use requires repetitive behavior and/or partner cooperation, whether or not it is coitus-independent, and the method’s side effects. As the IUD, like other modern contraceptives except barrier methods, does not protect the user against sexually transmitted infections, individuals who consider themselves at risk of infection may have to use it in conjunction with a condom or other barrier method to preserve their health.

Health system policies and practices, e.g., a requirement for screening tests to rule out pregnancy, or for additional payments for a specific method, or the need for counseling and informed choice, or unjustified age and parity restrictions, may also affect the use of specific methods. Family and community relationships, often overlooked in considering method choice, also affect the formal or informal information that potential clients receive about any method as well as the accuracy of their understanding. These factors also may influence the support they receive to allow them to use the method effectively and to deal appropriately with side effects when they occur. Just as male partners are influential in the success of breast-feeding, so too they can be influential in supporting their female partners to use a method correctly and consistently, and to address any side effects that may arise.

![Fig. 1: Conceptual framework for understanding dynamics of contraceptive introduction and use.](image)

3. Array of challenges

Given the method’s characteristics, e.g., a safe, reversible, long-acting contraceptive, the IUD lends itself to addressing unmet need for both limiting and spacing. Yet, qualitative assessments and a review of research in Ghana, Guatemala, Honduras and Kenya [7] suggest that the effort to expand quality IUD services faces a broad array of difficult and longstanding challenges related to the behavior and understanding of clients and providers, communities and health systems. Some of these challenges have to do with the nature of the IUD as a clinical method, which must be provided in a health facility by trained, motivated, supervised and rewarded providers. For example, IUD services require a vaginal examination, the insertion of an object into the body of the client and check-ups if there are any problems. This clinical profile is not infrequently complicated by the client’s experience of side effects, particularly bleeding and spotting during the first few months of use. That experience, as well as often wildly unfounded rumors associated with the IUD’s side effects, is the main reason for discontinuation. Because removal of the method is common whenever side effects occur, the IUD often has a poor image among individuals and communities — and even providers — as a product.

In the pursuit of quality at the program level, health systems often place unjustified medical barriers in the way of clients seeking IUD services. Pregnancy tests, repeated vaginal examinations in teaching hospitals, age and parity restrictions, limitation on which cadre of provider can provide the method, and the request for multiple and often unnecessary return visits make this method less attractive from the health system perspective. For the individual provider, there are often few benefits of taking the time for counseling and the provision of the clinical service, especially when other options such as the injectable or pill could be easily prescribed without similar demands on clinical resources and time. Many health systems also only permit physicians to provide this service, making it difficult for nurses and midwives to provide the services, even when equal competency is demonstrated. Moreover, with the lack of training and adequate logistics support for IUD services, the reputation for poor quality and difficulty of use is often sufficient to limit demand.

From the client’s perspective, the myths and rumors about the IUD lead to low spontaneous demand for these services. The actual demand for the IUD may be fragile, in part because the unmet need for contraception does not lead potential users to actually choose the IUD. Clients’ choices may also change based on family relationships, economic circumstances or even ambivalence about the right option for them. In terms of relationships, the weak demand for IUD services may be related to poor partner support, the request to have the method withdrawn at the first sign of side effects and the lack of community support for the method. In part, the lack of community support is reflected
in the lack of knowledge about the IUD and the reluctance of women to talk about the method with their peers.

4. Country case studies

The components of a comprehensive family planning service delivery model include clinical guidelines for providers, systems for providing ongoing training and supervision (and other performance improvement interventions), logistics arrangements for ensuring regular and reliable availability of the product and related supplies, the organization of services, marketing and educational strategies for clients, providers and communities, procedures for counseling and ensuring choice and informed consent, and follow-up plans for clients. In short, these are all the elements that a program manager needs to understand in order to provide the service. The following brief cases provide information on how three countries and one partnership shaped these elements to reposition the IUD in developing countries. More information on these case studies is available through the IUD toolkit website [7].

4.1. Kenya

The contraceptive prevalence rate (CPR) in Kenya increased from 17% in 1984 to 39% in 2003. Despite this major increase, over the same period, Demographic and Health Survey results document a decreasing proportion of IUD use in the national method mix from 31% to merely 2%. While some decline in IUD use was expected with greater client choice, particularly with the increased availability, low cost and ease of use of depot medroxypregesterone acetate, the loss of the ability to effectively provide the IUD to those who might need it was a concern. With the anticipation of continued increasing demand for contraceptive methods, and in an effort to reduce unmet need for both spacing and limiting, the Ministry of Health and 18 national and international partners (e.g., EngenderHealth, Family Health International, among others) are engaged in several national level innovations to revive the acceptability of the IUD for both providers and potential clients.

Their efforts have engaged the Government of Kenya at the national policy level and included the adoption of WHO Medical Eligibility Criteria and related service delivery guidelines aimed at accurately informing providers about the latest scientific evidence about the widespread eligibility of most women to use the IUD. Their efforts have also included capacity building for providers and improved logistics for the supply of devices and support materials. To ensure that the new policy and guidance are effectively conveyed to potential providers and users alike, the government sponsored a public media education program, “Fahamu ukweli wa mambo — Now you know the truth,” which focused on addressing the myths and rumors around the IUD. Above all, it identified local champions for expanding access and stakeholders, in the form of local government leaders and donors, for ensuring the sustainability of the services.

4.2. Guatemala

Contraceptive prevalence rate increased in Guatemala from 19% in 1987 to 34% in 2004. As in the case of Kenya, survey results highlighted the decreasing proportion of IUD use in the method mix from 9% to 6%. Contributing to this decline, most of the IUD services were provided in urban areas by the Social Security System and the IPPF affiliate in Guatemala, while much of the unmet need for long-acting reversible contraception was located in rural areas.

In seeking increased access, the Ministry of Health (MOH), with the assistance of the Population Council and University Research Corporation, trained 90 potential IUD providers, including both primary care physicians and nurses, at home sites in 68 rural districts, with standardized protocols, outreach strategies for advising the community about the availability of the service, and client materials for counseling and information. Providers were required to identify interested clients in their community before receiving training. As a result of this rural outreach, providers learned how to meet the need for long-term methods in their communities. As a result of this model service strategy, the use of IUDs by MOH clients increased by about 20% and 76% of providers continued the service after 1 year. The model was particularly of interest to the MOH as the new IUD services reached younger and poorer women, as well as previous nonusers of contraception.

4.3. Pakistan

Contraceptive prevalence rate increased from 6% in 1984 to 20% in 2001, but with a stable proportion of IUD use in the method mix of 17%. In an effort to expand access to all methods of contraceptives, Population Services International supported the development of a social franchise network, called Greenstar, which provided a range of branded health services throughout Pakistan. Using a combination of female doctors, nurses and midwives, Greenstar identified 3914 trained female providers of the IUD.

By joining the Greenstar network, individual providers shared in the branding identity of the franchise marketing of a range of contraceptives. In addition, the network provided its members with competency training on the full range of IUD services, programmed visits to provide supervision and support, and undertook quality assurance to ensure that the services provided met the quality standards of the Greenstar network. As a result of this integrated social franchising effort between 2000 and 2004, IUD use increased threefold from about 50,000 clients to 166,000 per year. It had long been assumed that the public sector would be the only reliable structure within which long-acting methods could be provided, but this experience has proved otherwise, and the strategy of social franchising is now being developed in a number of countries in Asia and Africa.
4.4. International public–private partnerships

Cooperation between public and private sectors appears to be an attractive option for technology development and efforts to expand access to various modern family planning methods and services. In an effort to expand access to the new LNG IUS technology, in 2004 Schering Oy and the Population Council formed a public–private partnership headquartered in Finland, the International Contraceptive Access Foundation (ICA). ICA provides the LNG IUS to international development agencies and public health organizations, such as multilateral, governmental or NGOs for use in their programs. Specifically, the ICA Foundation offers a combination of donation and subsidized sale of LNG IUS to the public sector. Product donations can be made up to 1% of non-US market unit sales (about 53,000 IUS by 2007), and beyond that up to 3% of unit sales for purchase under US$40 by qualified public sector organizations (see http://www.ica-foundation.org for more information). A parallel arrangement to support access to the LNG IUS among poor clients in the United States is functioning through the Arch Foundation, a cooperative partnership between Berlex, Inc., and the Population Council.

ICA-sponsored international projects are in the early stages of implementation in Brazil, Ecuador, Indonesia, Kenya and South Africa, but their plans have taken into account the assessments and experiences highlighted in this paper. The aspirations of the Foundation are to learn from experiences on the introduction of service models for the IUS, gain insight into the transition to new IUS technology and understand the role of health benefits in the acceptability and use of the IUS in developing countries. Country case studies and the efforts of the ICA Foundation in developing countries are helpful in making a more explicit link between current practice and innovation in the form of new technologies.

5. Obstacles in policy and practice

The obstacles to repositioning family planning in general, and to increasing accurate understanding, availability, access and use of the IUD in particular, are complex in their nature and diverse in their expression. The repositioning of family planning services in many countries is made more difficult by the diverse efforts at health sector reform and decentralization of health decision making. Instead of working solely at the national level, repositioning efforts must be directed at the multiple levels of government where decisions on local policy and procurement are made. At the same time, governments in developing countries are faced with difficult decisions about attention and funding for competing public health priorities. HIV/AIDS in sub-Saharan Africa and other common priorities such as malaria, tuberculosis and clean water in many developing countries make investments in family planning difficult and of seemingly lower priority.

The costs and benefits of IUD provision for individual providers and clients are not well understood but could provide a key for making the services more acceptable and accessible. Even when these dynamics are understood, it should be anticipated that the WHO medical eligibility criteria for IUDs would be slowly adopted by risk-averse health care providers. Physicians often understand the well-known dictum “above all, do no harm” to mean “avoid the harm of doing” (e.g., providing an IUD if a woman might have a theoretical risk of having an STI); but they fail to consider an often far greater “harm of not doing” (e.g., the failure to provide an effective and desired method such as an IUD may result in an unwanted pregnancy and its attendant consequences).

Policy makers should also be cautious about being too enthusiastic about promoting new contraceptive methods without the requisite standards of voluntarism and quality. Laws (e.g., the U.S. Congress’ Tiahrt Amendment mandating informed choice of contraception for US foreign assistance efforts), national policies (e.g., the Target Free Population Policy in India) and conventions (e.g., the Plan of Action from the International Conference on Population and Development in Cairo, 1994) provide the basis for protections of clients’ rights to information and choice. Given the context of difficult decisions on investments for contraceptive security, policy makers should seek to preserve the principles of choice and ethical practice in service provision.

6. Conclusion

The shared goal of contraceptive development and family planning service delivery efforts is to help individuals and couples achieve their fertility intentions in a healthy, affordable and timely manner. The benefits for clients of the contraceptive development process are therefore not fully realized with the regulatory approval and licensing for new products. The research process focuses on maximizing efficacy, reducing potential side effects for clients and making manufacturing procedures as simple as possible. Beyond these issues, at the level of the actual delivery of services to individual clients other issues, such as provider and health system dynamics, those related to the monetary and nonmonetary costs to clients, those related to product image and the extent of accurate understanding by individuals and communities contribute to the acceptability and use of various contraceptive methods.

Organizations concerned about the utilization of science for human welfare must partner with service delivery systems and private sector organizations in order to make new products truly more available and accessible to individuals in developing countries. Change in the position of the IUD will certainly take time, as do most innovations in health technology. Nevertheless, health services research and the experience of policy makers and providers suggest...
that renewed introduction efforts that are well designed and are based upon a scientific understanding of what motivates individuals (clients, providers, partners and program managers) can reposition the IUD in adverse social conditions and ultimately benefit individuals, couples and the larger community in developing countries.

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