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Impact of Changing Contraceptive Method Mix on Jordan's Total Fertility Rate

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Jordan's total fertility rate has leveled off since 2002. At the current level, a woman would give birth to an average of 3.8 children during her lifetime. If fertility remains unchanged, Jordan's population would double in size in about 30 years. This rapid population growth would place continued pressure on the environment, water availability, food security, housing, employment, and health and education services.

This policy brief discusses three key factors that will affect future population growth—childbearing patterns, contraceptive use, and the various types of contraceptives chosen by couples (method mix). It then answers the question, "What will be the impact of changing the current contraceptive method mix on achieving Jordan's future fertility goals?" Policy recommendations follow.

Method Mix and its Relationship to Fertility and Contraceptive Prevalence Rates

Similar to the total fertility rate (TFR), the contraceptive prevalence rate (CPR) has shown little change over the past decade. The 2009 Jordan Population and Family Health Survey (JPFHS) found that 42 percent of currently married women of reproductive age (MWRA) were using modern contraceptive methods (including lactational amenorrhea—LAM), and an additional 17 percent of MWRA were using traditional methods such as withdrawal, periodic abstinence, and folk methods (Jordan Department of Statistics, 2010).

CPR is strongly and inversely related to TFR. Researchers have observed that a 10-point increase in contraceptive prevalence is associated with a decline of 0.7 births per woman in the TFR (Sullivan et al., 2006). While program managers have given considerable attention to overall CPR, less attention has been given to the combination of methods used, known as method mix (MM). MM is a proxy indicator of method availability, clients' choices, and use-effectiveness. While there is no "ideal" method mix in the literature, there is concern when one or two methods predominate in a country.

In Jordan, the intrauterine device (IUD) and traditional methods are highly dominant, with prevalence rates of 22 percent and 15 percent of MWRA, respectively. Prevalence of traditional methods in Jordan is higher than in Egypt (3%), Morocco (8%), Tunisia (10%), and Syria (12%) (Population Reference Bureau, 2008). The reliance on a few contraceptive methods is labeled as "method skew." Skewed modern method mix may negatively affect health providers' workload, women's access to services, and efforts to increase the CPR. In contrast, skew toward traditional methods increases the incidence of unintended pregnancy due to the high failure rate of these methods.

Jordan's Reproductive Health and Action Plan II (RHAP II) adopts the government's National Population Strategy Goal to "contribute to a sustainable basis for economic development through a decrease in the nation's TFR to 3 children per woman by the year 2017." In turn, the Higher Population Council (HPC) set a goal to reach replacement-level fertility of 2.1 by 2030.

Jordan's ability to achieve replacement-level fertility will, to some extent, depend on helping women using traditional contraceptive methods to shift to modern methods. Switching to more effective methods would help couples to achieve their reproductive desires and reduce the incidence of contraceptive failure. As shown in Table 1, modern contraceptives are 90–100 percent

effective in preventing pregnancy, compared with 50 percent effectiveness for traditional methods. Applying these effectiveness rates to the proportion of the 795,000 Jordanian married women who are using contraception, an estimated 82,000 women would experience an unintended pregnancy. Four in five of these pregnancies—an estimated 69,000 pregnancies—would result from use of traditional methods. In 2009, approximately 17 percent of MWRA, or 138,000 women, were using traditional family planning (FP) methods to regulate their fertility. If these women shifted to more effective methods, the proportion of unintended pregnancies would decline, thus contributing to overall fertility decline.

Table 1. Contraceptive Prevalence, Users, Effectiveness, and Failures by Method, Jordan 2009

Method	Percent CMWRA Using FP	Number of Users**	Percent Method Effectiveness	Number of Effective Users***	Percent Method Failures	Number of Method Failures ****	Percent Discontinuation	Number of Discontinuations *****
Male Condom	6.4*	50,880	89.9	45,741	10.1	5,139	51.5	26,203
Female Sterilization	2.6	20,670	100.0	20,670	0.0	0	0.0	0
Injectable	0.7	5,565	98.4	5,476	1.6	89	64.3	3,578
IUD	22.6	179,670	98.9	177,694	1.1	1,976	15.1	27,130
Pill	8.2	65,190	91.9	59,910	8.1	5,280	50.9	33,182
LAM	1.5	11,925	93.3	11,126	6.7	799	99.1	11,818
Implants	0.1	795	100.0	795	0.0	0	0	0
Periodic Abstinence	4.0	31,800	50.0	15,900	50.0	15,900	45.9	14,596
Withdrawal	12.8	101,760	50.0	50,880	50.0	50,880	39.8	40,500
Folk Methods	0.5	3,975	50.0	1,988	50.0	1,988	62.9	2,500
Total	59.3	472,230		390,180		82,051	45.1	159,507

Sources: Data for currently married women of reproductive age (15–49) (CMWRA) are from the Jordan FamPlan Model 2007–2050. Data for prevalence and effectiveness are from the 2009 JPFHS. Data on traditional method effectiveness are based on international standards.
* Includes 0.1 for female condom
** Col. 2 x 795,000 (CMWRA)
*** Col 3 x Col. 4
**** Col. 3 x Col. 6
***** Col. 3 x Col. 8

Method Mix in Jordan: What Are the Issues?

The RHAP 2008–2012 had anticipated a steady decline in TFR to reach 3.1 births per woman by the year 2012, with a further decline to a TFR of 2.5 in 2017, assuming a substantial increase in CPR. However, the findings of the 2007 and 2009 JPFHS showed that fertility and CPR levels have remained relatively constant since 2002, falling short of targeted levels. The slight increase in CPR since 2002 did not affect the TFR because more couples were using traditional methods, resulting in unintended pregnancies.

To change method mix in Jordan, the following issues must be addressed:

Provider and space availability. Jordan's method mix has long been skewed toward provider-dependent methods, specifically IUDs, as shown in Table 1. Both users and non-users of contraception state a preference for IUDs. In response to a question in the 2002 JPFHS, 87 percent of those women who intend to use IUDs in the future said they prefer to receive IUD services from a female provider. Another survey showed that three quarters of MWRA would not accept IUD insertion by male doctors, preferring to leave the clinic. Similar to the JPFHS finding, the survey showed that 87 percent of women would prefer to be attended by a midwife rather than a male doctor (Commercial Market Strategies Project, 2002). This preference cannot be met because Jordan lacks adequate numbers of female physicians in both the public and private sectors. The shortage is particularly acute in rural areas. Approximately 190 nurse-midwives have been trained to insert IUDs; they now provide almost half of all IUD insertions. This could change, since the Ministry of Health (MOH) recently decided that midwives are not permitted to insert IUDs as interpreted by existing medical occupations by-laws. The shortage of female providers is often compounded by the lack of private clinic space for confidential counseling services. These factors reflect disregard for clients' preferences and can compromise their right to basic healthcare and confidentiality.

Provider bias. Service providers' knowledge, attitudes, and practices regarding the use of permanent and long-acting methods are often biased in favor of IUDs (EngenderHealth, 2002). Within the private sector, FP information provided by pharmacists and general practitioners to newly married couples is often incomplete, misleading, or biased against injectables and IUDs. Some private providers favor oral contraceptives and condoms, since they have no prescription requirement; others may oppose use of any contraceptive until the birth of the first child (Basim and Bernhart, 2000).

User preferences. Of the 41 percent of reproductive-age women who are not currently using contraception, the majority (79% in the 2009 JPFHS) stated that they want to use a modern method of contraception, while only 15 percent want to use a traditional method. A recent study concluded that to meet the rising demand for modern methods, it is crucial that future programmatic efforts provide methods that are both accessible and acceptable to users (Seiber et al., 2007). Furthermore, unpublished 2002 JPFHS findings indicate that one in five women using contraception are not satisfied with the method they currently use. Some of their concerns might be met by provision of new contraceptive methods and formulations with potentially fewer side effects. However, these innovations are not being introduced into the current method mix. The prospect of pharmacies registering new contraceptive methods is low because of the small market size and the expensive and time-consuming drug registration process. The public sector is precluded from procuring contraceptives through international tenders, so the newer formulations are not available and Jordan continues to pay the higher costs associated with internal tenders.[1]

Fear of side effects of modern methods. Fear of side effects and health concerns are major barriers to a more diversified method mix in Jordan. Most women have received some information about side effects. Seventy-two percent of women surveyed said they were informed about the side effects of their chosen

[1] The Minister of Finance can grant an override to allow an international tender, but it must be done with every procurement.

method, and 64 percent said they were informed about what to do should they experience side effects. Seventy percent of women were also informed about alternative contraceptive methods (Jordan Department of Statistics, 2008). However, receipt of this information does not appear to alleviate women's concerns about side effects and health concerns. Counseling and support may be needed to help women cope with side effects or shift to another method.

Traditional method use. As previously mentioned, Jordan's method mix is characterized by relatively high use of traditional methods, which have high failure rates and consequently high discontinuation rates. The percentage of MWRA using traditional methods (excluding LAM) has risen from 13 percent in 1990 to 17 percent in 2009 (Jordan Department of Statistics, 2010). Approximately 138,000 MWRA are using a traditional FP method and therefore are exposed to the risk of unintended pregnancy.

Policy Options: What Are the Impacts of Changing Method Mix?

As stated earlier, method mix has specific impacts on TFR—through effectiveness of methods—and consequently on the CPR required to achieve future fertility goals. Keeping the impact of fertility determinants other than contraception (such as proportion of women married, postpartum insusceptibility, infertility, and abortion) constant, what are the impacts of changing Jordan's method mix by shifting traditional method users to modern contraceptives? In other words, how would changing Jordan's method mix affect the TFR, contraceptive effectiveness, and FP program requirements?

To address these questions, the researcher set up two paths with two scenarios each, using the FamPlan Model of the Spectrum System of Policy Models. The first path is based on the RHAP and national strategy future fertility goal, while the second path is based on keeping the CPR constant in the future. The two scenarios with two different method mix settings are illustrated in Table 2. They are used to assess the impacts of changing method mix on the levels of contraceptive effectiveness, CPR required to achieve TFR national goals, number of users, couple years of protection (CYP), and number of unintended pregnancies.[2]

Table 2. Current and Assumed Method Mix (MM)

Method	Scenario A Current MM 2009 (%)	Scenario B 50% Reduction in Use of Traditional Methods by 2017 (%)
Condom	10.8	13.2
Female Sterilization	4.4	6.8
Injectable	1.2	3.6
IUD	38.0	40.5
Implant	0.2	2.6
Pill	13.8	16.2
Periodic Abstinence	6.7	3.4
Folk Methods	0.8	0.4
Withdrawal	21.5	10.8
LAM	2.5	2.5
Total	100.0	100.0

Path One: TFR = 2.5 by 2017

Scenario A—No Change in Current (2009) Method Mix

Scenario A provides a baseline to test the impact of changing method mix on TFR.[3] In this baseline scenario, the TFR is 3.8 and total CPR is 59.3 percent in 2009. This scenario assumes no change in Jordan's current method mix in the future. As a result, the overall average method effectiveness remains constant at 0.83. CPR has to increase to approximately 74 percent of MWRA in 2017 if the fertility goal is to be achieved; the modern CPR would

[2] CYP is the estimated years of contraceptive protection provided by the FP program, based on the volume of all contraceptives sold or distributed free of charge to clients.

[3] The baseline includes data from the JPFHS 2009 and Health Policy Initiative/Jordan's projections of the Jordanian population living in-country (based on the 2004 Jordan census of the population and the JPFHS 2007 and 2009).

be 51 percent and the number of unintended pregnancies would be more than 66,000[4] (see Table 3).

Table 3. Summary of Main Findings for 2017

Path One—TFR Goal for 2017=2.5		
Indicator	**Scenario A**	**Scenario B**
Average Method Effectiveness	0.83	0.89
CPR (%)	73.75	66.66
Modern CPR (%)*	50.87	55.24
Number of Users	703,000	635,000
Number of Users of Modern Methods	485,000	527,000
CYP (000)	515,000	559,000
Unintended Pregnancies	66,000	37,000
Births	136,750	136,750
TFR	2.50	2.50
Rate of Natural Increase (%)	1.73	1.73
Source: Files: MMConstant+TFRGoal.PJN; MMConstan; MM50%+TFRGoal.PJN; * Excluding LAM		

Scenario B—Reducing the Prevalence of Traditional Methods by 50% by 2017

Scenario B assumes gradual changes in method mix toward a 50 percent reduction in the use of traditional methods by 2017. The reductions were added evenly to the modern methods to avoid more skewness toward the IUD, which is consistent with countries such as Egypt. If Scenario B is to prevail, the overall average method effectiveness would have to increase to 0.89 in 2017 and the CPR would have to increase to 67 percent by 2017 to achieve the 2017 TFR goal of 2.5. The modern CPR would be 55 percent, which is higher than in Scenario A, but there would be only 37,000 unintended pregnancies and a shorter timeframe to reach the desired TFR due to reduced method failure and higher CYP.

[4] Since the relationship between contraception and TFR is linear, the year of attaining the desired TFR is not relevant.

Path Two: Constant CPR

Another way to show the impact of changing method mix on TFR is to suppress or maintain CPR at its 2009 level (59.3%) and change the method mix as has been illustrated earlier in Scenario B. In Scenario B, the findings show that reducing the use of traditional methods by half resulted in a reduction in the TFR to 3.18 in 2017. The changes in method mix also contributed to a significant reduction in the required CPR and in the incidence of unintended pregnancies from 51,000 in Scenario A to 32,000 in Scenario B. Moreover, Scenario B resulted in reduction in the number of live births (see Table 4).

Table 4. Summary of Main Findings for 2017

Path Two—Constant CPR		
Indicator	**Scenario A**	**Scenario B**
Average Method Effectiveness	0.83	0.89
CPR (%)	59.3	59.3
Modern CPR (%)*	40.50	47.62
Number of users	560,000	548,000
Number of users of Modern Methods	386,000	454,000
CYP	404,000	474,000
Unintended Pregnancies	51,000	32,000
Births	188,000	172,000
TFR	3.50	3.18
Rate of Natural Increase (%)	2.45	2.23
Source – Files: MMConstant+CPRConstant.PJN; MM50%+CPRConstant.PJN; * Excluding LAM		

Policy Recommendations

Jordan's population is highly urbanized, women are well educated, and the age at marriage has increased significantly. Yet fertility has remained high, keeping the country at an early stage of the demographic

transition[5] to lower fertility. To reap the benefits of the demographic transition, the Hashemite Kingdom of Jordan (HKJ) must lower its fertility rate.

With the RHAP-II approved, the HKJ should focus on implementing the operational polices and corresponding activities needed to help Jordanian women meet their reproductive goals and thus achieve the national population goals related to development. Since contraceptive failure is essentially a function of incorrect and/or inconsistent use of an FP method (user failure), plus the inherent effectiveness of the method itself (method failure), an effective FP program should encourage women to adopt the most effective method that meets their personal requirements based on their age, parity, health, economic situation, desire to limit or postpone additional births, and their family circumstances. Specifically, the HPC requests H.E the Minister of Health to do the following:

Short-Term Actions

- Provide adequate funding to implement the yearly RHAP action plan
- Provide adequate funding to procure needed contraceptives
- Change the policy to permit international procurement of contraceptives
- Request that FP counseling services be evaluated and strengthened, including development of a community outreach program to reinforce counseling and visit those women who discontinue contraceptive use
- Expand services in remote and poor areas with high need by providing mobile clinics, contracting with the private sector to provide FP services, and signing a decree that allows midwives to insert IUDs
- Develop and adopt an operational policy to balance the assignment of MOH personnel to provide minimal coverage in all locations

[5] The demographic transition marks the shift from high birth and death rates to low birth and death rates as a country develops from an agrarian to an industrialized economic system.

Long-Term Actions

- Reintroduce and expand access to long-term modern methods, such as implants
- Increase the number of providers by creating a policy to provide non-monetary or monetary incentives to public sector female physicians to work in remote or difficult areas

Conclusions

This analysis has shown that gains in family planning can be achieved by changing Jordan's current method mix without aiming for significant increases in future CPR. The HKJ faces several challenges in reaching the goal of lower fertility—not the least of which is the continuing high demand for children within Jordanian families. Nevertheless, Jordan has made remarkable progress, as the total fertility rate has dropped in half in just 30 years—from 7.4 in 1976 to 3.8 in 2009. Virtually all Jordanians know about contraception, and most have access to family planning services. Opportunities exist in the relatively short term for a continued decrease in fertility from 3.8 to 3.0 by helping women to switch to more effective contraceptive methods and reducing discontinuation rates. Discontinuation due to method failure results in approximately 82,000 unintended pregnancies a year—of which 69,000 derive from traditional method failure. Greater use of modern methods and less use of traditional methods would enhance the overall use-effectiveness of contraceptives, which in turn would reduce fertility.

Further declines in the TFR to replacement-level fertility may be possible in a longer timeframe if there are social and economic changes in Jordan that reduce the demand for large families. Success will depend on a full and public commitment from the highest levels of the HKJ and a vigorous and multi-dimensional FP program that addresses unmet need for family planning; improves provision of information and counseling; increases real access to FP services; improves method mix, especially for long-term modern methods; reverses the trend toward use of less effective methods; and includes the issue of population

and development in all levels of planning and in the public debate about the future of the HKJ.

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