



# Policy Brief

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## Cost Effectiveness of Reproductive Health Interventions in Uganda: The Case for Family Planning services

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### 1. Problem investigated and issues

There seems to be a consensus among policymakers and politicians that innovative interventions have to be put in place to reduce the population growth rates in Uganda. The country's population growth rate of 3.2% per annum is extremely high — even for a low income country. The above scenario is attributed to high number births per woman as measured by the Total Fertility Rate (TFR) and this has remained substantially above levels elsewhere in sub-Saharan Africa (SSA). For example, in 2006 Uganda's TFR of 6.7 births per woman was higher than the SSA average of 5.5 births per woman. On the other hand, with an annual per capita Gross Domestic Product (GDP) of US\$ 300, Uganda remains one of the poorest countries in SSA. Furthermore, due to the predominance of informal activities and weak tax administration system, the country collects only 13.7 % of its GDP in taxes. As such the amount of funds available for financing health services in general and reproductive health services in particular are limited. Nonetheless, sexual and reproductive health issues are central to Uganda's human development agenda as highlighted in the Government of Uganda (GoU) five year revolving Health Sector Strategic Plan (HSSP I and HSSP II) and the overarching National Development Plan (2010/11-2014/15). All the above plans recognize the need of increasing a variety of family planning methods available to couples who need them.

The HSSP II details specific targets with regard to availing family planning services in Uganda and also highlights the fact that inadequate funding limits the ability of the health sector to roll out birth control services to every woman who needs them. Among the targets, between 2005 and 2009, the plan proposes to reduce teenage pregnancy from 37% to 20%; increase the contraceptive prevalence rate from 20 to 40% as well as increase the Couple Years of Protection (CYP) from 223,600 to 500,000 per annum<sup>1</sup>. The plan also projects a 50% increase in expenditures on family planning supplies — from Ushs 9 billion to Ushs 13.5 billion. Nonetheless, only 55% of the required health resources were budgeted for

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<sup>1</sup> Couple Years of Protection is defined as the protection provided by the contraceptive methods during a one-year period based upon the volume of contraceptive sold or distributed free of charge to clients.

funding in 2005/06, and the financing gap is projected to remain constant based on the current Long Term Expenditure Framework (LTEF). Thus, with limited options for growth in the national resource envelop, and as such the health sector budget, an alternative option for improving reproductive health resources can be through improved efficiency. And choosing family planning interventions that are cost effective is a worthwhile pursuit in this regard.

Historically, the GoU through the Ministry of Health (MoH) has provided a number of family planning services including: intra-uterine devices (IUD), injectables, oral contraceptives, condoms, nor plant, and sterilizations. However, in the recent past, attentions have focused more on the condom — due to its duo role of preventing conception and at the same time preventing the spread of sexually transmitted infections (STI). Partly as result of the fixed health care funding basket alluded to earlier, their have been renewed calls to increase the efficiency of current reproductive health programs. Overall, there is limited information regarding the cost effectiveness of the various family planning services in relation to outcomes such as: number of birth averted, number of unsafe abortions averted, and general improvement in maternal health — due to paucity of the data. This is partly explained by: the large expenditure outlays required to collect information on costs of health services; household reservation towards collecting detailed personal data on sexual relations; and also the challenges of incorporating reproductive health questions in complex survey designs.

It is against the above background that this paper examines the cost effectiveness of four family planning interventions in Uganda in 2006 namely: oral contraception, injectables, condoms, and female sterilization. The choice of the four contraceptive methods is based on both the frequency of use of the particular method and the availability of cost information relating to its use. Consequently, although some traditional methods of contraception are extensively used (e.g. withdrawal, periodic abstinence); the inability to attach a monetary cost of service provision for such methods eliminates them from our selection. Specifically, the paper sought to establish which of the above methods of modern contraceptive use yields the highest returns in terms of pregnancies averted once costs of service provision are considered.

## **2. Methods of analysis**

The data used in this study is from three sources. First, we use is the 2006 Uganda Demographic and Health Household Surveys (UDHS) conducted by the Uganda Bureau of Statistics and Macro International. The survey captures information relating to marriage, fertility, family planning and household reproductive characteristics. Specific to our exercise of measuring the effectiveness of family planning interventions, the survey collects the following information: sexual history, current pregnancy status, fertility preference, reasons for not using contraception, source of information and supplies for family planning services. In addition, the survey capture information relating to the decision to use contraception — whether it is decided by the woman or jointly with the husband, and the year of starting to use contraception.

The second dataset is the 2005/06 Uganda National Household Survey (UNHS) also conducted by the UBoS. The UDHS and UNHS were designed to be linked—so as to generate a panel sample of households with both health and poverty indicators. Indeed, at least 2,688 women in UDHS survey have information on their socioeconomic status as captured in the UNHS survey. The final data source is the 2005 UNFPA reproductive health costing model database.<sup>2</sup> With regard to the cost information, the UNFPA database captures: the population requiring the services; the total costs of providing reproductive health services (drugs, supplies, and personnel); and the staff required to provide a service annually. The combination of personnel costs, drugs, and supplies provides the cost per-care-per-intervention we utilise in our study.

In terms of methods, first, we estimate the number of births averted (proxy outcome measure of family planning interventions) by using any of the four contraceptive methods for women who were sexually active during the past 12 months prior to the survey. Second, in conjunction with the personnel and supplies costs of the above methods, we estimate cost effectiveness ratios.

### **3. Key findings**

We find that at least 20% of women in Uganda use some form of contraception. Of these, majority of women use modern methods—about 16 % as opposed to traditional methods (4%). Nonetheless, the above contraceptive prevalence rates are not only considerably much lower than the global average, but are also below the African average. According to 2002 global report on levels and trends of contraceptive use, at least 59% of women in less developed countries use contraception while the corresponding rate for Africa is 27% (United Nations, 2003). In terms of methods of contraception, we find that in Uganda, injectables account for 39% of the total contraception use while the top three methods (injectables, condoms, and oral contraception) account for 67% of the total use. This differs markedly for the African average where the top three methods (oral contraception, IUD, and injectables) account for 50% of the contraceptive use (United Nations, 2003). A similar pattern in mix is observed across the country with the exception of urban areas where condoms are the method of choice for at least 25% of the women. Overall, injectables are the predominant method of contraceptive choice in Uganda even in rural areas. On the other hand, condoms are widely used in urban areas especially in Kampala. Use of traditional methods is relatively limited except in Western and South Western Uganda where one in three women rely on traditional practices for contraceptive. In these two particular regions, periodic abstinence and withdrawal are important methods of preventing conception.

Overall, we estimate that the use of various methods of modern contraception in Uganda results into 862,000 births averted annually. This is no mean achievement in a country with a population of 28 million and annual population growth rate of

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<sup>2</sup> This database, part of the UN Millennium Project, was designed and assembled to assist countries better estimate the resources required to meet reproductive health MGDs by 2015.

3.2%. Regarding the types of contraceptive methods, injectables account for 45% of the total births averted and this is a result of its predominant use as well as above average effectiveness. In terms of cost effectiveness analysis, we find that oral contraceptives dominate female sterilization while condoms dominate either female sterilizations or oral contraceptives. On the other hand, injectables are the most cost-effective intervention when compared to any of the other three interventions. Consequently, in Uganda, injectables result in the most number of births averted at the least cost.

We also examine the correlates of female contraceptive use. We find that exposure to family planning services — either through the media or health facilities is significantly correlated with contraceptive use. In particular, women with exposure to family planning are about 60% more likely to use family planning. Even when the poverty status of women in question is accounted for, women with exposure to family planning are more than twice more likely to use contraception. Education is also an important factor in explaining female contraceptive use. In particular, a woman having primary education increases the odds of using contraception by as much as 1.59. On the other hand, a woman having attained secondary education more than doubles the odds to 3.105. For women with secondary education, the odds of using contraception increase further to 3.46 if the poverty status of the household is accounted for. Clearly increased education attainment has large payoff in terms of influencing contraceptive use. In terms of location, women in urban areas are about 70% more likely to use contraception than their rural counterparts.

We also find that both contextual and individual factors have important influences on the use of contraception. At the community level, community approval of family planning and testing for HIV/AIDS are significant influencing contraceptive use. At the individual level, the number of children ever born is an important factor in explaining the use of contraceptive methods. Also, women in monogamous marital unions are more likely to use family planning services compared to any other marital state.

#### **4. Policy implications**

Although we find that injectables are the most cost effective intervention, nonetheless, we do not recommend solely targeting women in the reproductive age category with this particular method for a number of reasons. First, despite injectables resulting into the best outcome, they may not work for every woman — due to physiological differences. Two, the particular method of contraception used sometimes depend on the fertility preferences of the women as well as the life cycle stage of the woman i.e. whether the woman wants any more children or not. In this regard, although permanent methods of contraception may be costly in terms of cost per case per intervention, they may be cheaper in the long term due to limited requirement of reapplication. Thus, although our results point to injectables as the method of choice, targeting women with this particular intervention can not be undertaken in isolation of other complementary factors.

With regard to policy variables, education attainment — especially of secondary education, is significantly correlated with contraceptive use. Furthermore, exposure to family planning messages has significant influences. In particular, women who have heard family planning messages either through the broadcasting media or contact with health professionals are significantly more likely to use family planning services. This particular result points to the need to intensify information, education, and communication (IEC) programmes—especially as they relate to disseminating family planning programs. At the moment most of such programs are focussed on other health challenges such as the combating the spread of HIV/AIDS.

Finally, we find that after controlling for both individual and contextual factors, the household poverty status of the woman has no significant influences on the use of family planning programs. This may be partly explained by the fact that modern contraceptive are free — at least in public health facilities. Furthermore, individual circumstances and beliefs may be more important in guiding the decision to use family planning than the income status. Indeed, we find that a substantial proportion of women from the top quintile use traditional methods of birth control.