

Meeting the contraceptive needs of Ugandan women: A beneficial investment

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A large number of Ugandan women are having more children than they want and evidence indicates that this situation is worsening. According to the 2006 Uganda Demographic and Health Survey (UDHS) 46% of all births were unplanned compared to 38% in the 2000-01 UDHS. Ugandan women have on average two more children than they want and as a result many turn to unsafe abortion (Singh et al. 2005). High levels of unplanned pregnancies put the lives of mothers and newborn children needlessly at risk of death or disability. Uganda has amongst the highest rates of both maternal and infant mortality in the world. About 550 mothers per 100,000 live births die due to pregnancy related complications (Department of Reproductive Health and WHO 2007). Similarly, about 84 babies for every 1000 babies born alive don't live to see their first birthday.

The negative consequences of unplanned childbearing can be reduced by enabling women to only have the children they want and thus prevent unwanted pregnancies. Promoting effective contraceptive use by Ugandan women and their partners is therefore integral to protecting Ugandan women's health. Better access to contraceptive services enables women and their partners to make choices about pregnancy, have healthy babies and protect themselves from the harmful consequences of unintended pregnancy. Furthermore, access to contraceptive services, including provision of condoms, is crucial to attaining many of the Millennium Development Goals (MDGs), like improving maternal health, reducing child mortality, and slowing the spread of HIV and other STIs (UN 2009).

An important concern in developing countries like Uganda has been the availability of economic resources to provide such services to women. A 2003 report *Adding It Up (AIU)* published by the Guttmacher Institute and the UNFPA (Singh et al. 2003) showed however that, worldwide, it was more cost-effective to invest in these services given the benefits in terms of reduced mortality and morbidity for the country. A country level study done on the Philippines (Darroch et al. 2009), using the AIU methodology also found that investing in contraceptive services saved the country a lot of health related expense in the long run.

In this paper we build on previous research and apply the techniques of the *Adding It Up* report to the Ugandan context. We describe the current patterns of contraceptive use in the country and show the high costs associated with allowing the need for contraception to go unmet and we outline the net benefits—to women and society—from the current level of use and how those benefits would expand under scenarios of greater contraceptive use. Our hope is that the results presented will help mobilize the public and private sector as well as international donors to allocate the funds to meet the basic health needs of the population.

Methods:

We use data from the Uganda census projections, the 2006 Uganda Demographic and Health Survey, the most recent demographic estimates from the United Nations, abortion data from the Guttmacher Institute, and various recent country reports, to estimate the 2008 monetary costs of providing contraceptive and maternal and newborn health services in Uganda and also the savings in terms of reduced maternal and infant mortality, unsafe abortions, and DALYs (disability-adjusted-life-years) under different scenarios.

We will examine costs and benefits for four alternative scenarios: the first scenario looks at the hypothetical consequences of providing no contraceptive services. The second scenario depicts the actual situation at current level of contraceptive use where some of the demand is satisfied, but substantial unmet need still exists. The third scenario shows

the costs and benefits of satisfying about 50% of the current unmet need for contraception, paralleling closely an objective of the government's current health strategy; and the fourth scenario examines the outcomes that would result from satisfying all current unmet need for contraception through family planning with modern methods..

In order to examine if there are any structural inequalities in the provision of reproductive health services, results will be disaggregated by wealth status and by region.

Unless otherwise specified, all data presented are special calculations based on the sources listed in the methods appendix (see appendix 1).

The Ugandan Context:

Fertility rates in Uganda have decreased somewhat over the past decades, but women still have on average almost two more children than they want (Uganda Bureau of Statistics and Macro International 2007). Total fertility among women ages 15-49 fell from 7.3 births per woman in mid 1987, to 6.9 around the 1995 DHS; it remained steady at 6.9 around the 2000-01 DHS, but fell to 6.5 around 2006 DHS (Uganda Bureau of Statistics and Macro International 2007). Despite this small decline, the fertility rate has not kept pace with women's increasing desire for smaller families. Ugandan women ages 15-49 wanted an average of 5.3 children in 2000-01 and only 5.1 in 2006 (Uganda Bureau of Statistics and ORC Macro 2001; Uganda Bureau of Statistics and Macro International 2007). Some 46% of all births in the five years preceding 2006 were to women and couples who would have preferred to have a child later or prevent additional childbearing altogether (Uganda Bureau of Statistics and Macro International 2007).

Poor women, especially, have difficulty achieving the family size they desire. Although, on average, poor women want more children than do their better-off counterparts, they also experience a much larger gap between the number of children they want and the number they actually have. For instance, women ages 15-49 in the lowest wealth quintile have about 2 more children than they desire, while the women in the same age group in

the highest quintile experienced a gap of less than one child (Uganda Bureau of Statistics and Macro International 2007) (Figure 1).

There are also regional variations in wanted fertility versus actual fertility. The gap between desired and actual fertility was the smallest in Kampala at 0.8 (Uganda Bureau of Statistics and Macro International 2007); that is women in Kampala had about 1 more child than they wanted. In the Eastern region however, women had over 2 more children than they wanted. The Western, Northern, and E. Central regions were the next highest with a gap of a little less than 2. Central 1 had the next lowest gap after Kampala with a gap of 1 extra child between actual and desired fertility.

High national levels of unplanned childbearing point to even higher levels of *unintended* pregnancy. In 2003, an estimated 1.8 million pregnancies occurred among Ugandan women. Forty-two percent (or 1.2 million) of these pregnancies resulted in planned births, 26% ended in unplanned births, 16% resulted in induced abortions and 15% in miscarriages (Singh et al. 2006). About 50% of all pregnancies (excluding spontaneous abortion) in Uganda that year were unintended. This ranged from 55% in the Eastern regions to 41% in the Western regions. In the Central regions 53% of the births were unintended and in the Northern regions 55% were unintended (Singh et al 2005).

Because abortion is legal in Uganda only to save the life of the woman, many Ugandan women who experience an unintended pregnancy, which they don't want to carry to term, seek a clandestine, and often unsafe, abortion. An estimated 300,000 abortions take place every year in Uganda, almost all of them clandestinely. These women also experience high rates of complications and death. Every year, an estimated 85,000 women ages 15-49 or 15 out of every 1000 Ugandan women of child bearing age are treated for abortion-related complications. If this rate remains unchanged the average Ugandan woman would have a 50% chance of needing care for induced abortion related complications during her reproductive lifetime (Singh et al 2006).

As has already been pointed out, women and families also run the risk of their losing their babies. The infant mortality rate is 84 infants per 1000 live births and of these, 31 babies die before the first month of their lives—the neonatal period.

Meanwhile, the mortality rate among infants born to women in the lowest wealth quintile is much higher (98 per 1000) than that of those born into the highest quintile (62 per 1000) though this too is very high. The disparity between the rich and the poor indicates that the risk of experiencing an infant's death is highest among the women who also have the greatest difficulty obtaining reproductive health services, including contraceptives to prevent unintended pregnancies.

Disability-adjusted life years (DALYs), which is an internationally used measure of disease burden, expresses the number of years of healthy life lost to death and illness. In 2008, Ugandan women lost an estimated 441,000 years of life due to conditions related to pregnancy and childbirth (WHO 2008). Infants suffering from perinatal conditions, such as birth asphyxia and trauma, low birth weight, neonatal infections and other conditions, lost another 1.4 million productive years of life.

Results:

About 3.2 million Ugandan women—or nearly half (49%) of women of reproductive age—were married, or unmarried and sexually active in the past three months, and able to become pregnant, but wanted to delay having a child for at least two years or wanted no more children. Among currently married women, the overall proportion wanting to avoid pregnancy reached 64% or a total of 2.7 million women. In addition, an estimated 540,000 unmarried sexually active women wished to avoid pregnancy; because nonmarital sexual activity is stigmatized in Uganda and thus is usually underreported (Darabi et al. 2008), this number is likely substantially higher.

Of all women wanting to avoid pregnancy, 57% wanted to wait at least two years before having a(nother) child and 43% wanted to stop childbearing altogether. Yet despite their desires to avoid pregnancy, only 39% of them—made up of roughly equal proportions

using a method to delay and to stop childbearing—were practicing contraception. Thirty-one percent were using a modern¹ contraceptive method and 8%, a traditional method, mostly withdrawal and periodic abstinence. However, the majority of women wanting to avoid pregnancy—61%, or 2 million women—used no contraceptive method at all (Table 1). We consider women who want to avoid pregnancy but are nonetheless not using any method or using a less-effective traditional method to have an unmet need for improved (or modern) contraception.²

The proportion of at-risk women in need of improved contraception is highest in the North (84%), the most socioeconomically disadvantaged region where women are most likely to encounter obstacles to obtaining family planning services; it is lowest in the only highly urbanized region, Kampala (42%), where services are likely to be much more accessible. These findings are echoed in the patterns of unmet need for improved contraception by wealth: The proportion of women wanting to avoid pregnancy who nonetheless use no method or a traditional one rises uniformly with declining wealth, going from just 48% of at-risk women in the wealthiest quintile to 86% in the poorest (Table 1).

In Uganda, where preferred family size is relatively high, the desire for spacing births is generally greater than the desire to stop childbearing: Overall, the majority (60%) of women with unmet need wanted to have a birth in the future (and therefore needed a reversible method), whereas the remaining 40% wanted to stop having children. Ugandan women have a limited range of contraceptive options: The single method that accounts for roughly half of all modern use among women who wish to avoid pregnancy is the

¹ By modern method, we mean sterilization (male or female), pills, IUDs, injectables, implants and male condoms.

² For the purposes of this analysis, our definition of “unmet need” differs from the traditional version used in Demographic and Health Surveys (DHS) in two ways: First, our denominator is narrowed to women who are sexually active, able to become pregnant, and want to limit or postpone childbearing, but the DHS denominator encompasses all married women (and for some countries, sexually active unmarried women as well); likewise, we restrict the denominator for contraceptive prevalence to just women who are at risk for unintended pregnancy. Second, we include women using traditional methods in our definition of those with unmet need, because these methods’ relatively high failure rates (see Hatcher et al. 2007) still leaves women vulnerable to the risk for unintended pregnancy and its negative consequences.

injectable, used by roughly 16% such women. In keeping with the above-mentioned greater unmet need to space than to limit births, women who wish to delay a birth were less likely to be using a modern method than were those who want to stop childbearing (27% vs. 36%).

What is the quantifiable contribution of family planning to women's—and the nation's—health and well-being? The impact that incrementally higher levels of modern contraceptive use would have is apparent in the declining absolute numbers of unintended pregnancies and their unwelcome outcomes (Figure 2). When we compare current use to no use, for example, the positive impact on maternal and newborn health that contraceptive use has already made in Uganda is abundantly clear. At the current level of use, Ugandan women experience roughly 1.2 million unintended pregnancies (which lead to 867,000 unplanned births and miscarriages, and 362,000 unsafe abortions), but if all women wishing to avoid pregnancy did not practice family planning, the country would have to contend with 1.7 million unintended pregnancies (with 1.2 million likely ending in unplanned births and miscarriages, and 515,000 in unsafe abortions).

When we quantify the numbers of unintended pregnancies and abortions that current levels of use avert, around 490,000 unintended pregnancies and 150,000 induced abortions are prevented annually. Thus, because childbirth remains dangerous for many women and clandestine abortions result in high rates of complications, these averted pregnancies and abortions already prevent 1,500 maternal deaths each year and save women from losing almost 100,000 productive years of life. Overall, the current level of family planning reduces these negative outcomes by 28–30% from what would occur in the absence of any use (Table 2).

Giving all nonusers and traditional method users who want to postpone or stop childbearing access to modern methods would greatly increase the benefits to Ugandan women and their families. Under this scenario, there would be 85% fewer unintended pregnancies each year (i.e., just 190,000 vs. the current 1.2 million), which translates into 85% fewer abortions and maternal deaths compared with the current situation in Uganda.

This improvement would yield incalculable gains for the emotional and physical health of women and their families.

Meeting all unmet need for modern contraception may be difficult to achieve in practice over a short period. Not only must current services be ramped up, but expanding access will require improvements in areas such as training of family planning personnel, supply logistics systems and infrastructure. Ugandan women and their families would still benefit greatly over the current situation even if just half of women at risk who are not practicing contraception adopted a method. In this scenario 65% of the women who want to avoid a pregnancy would be using a modern method (Scenario 3). There would be 152,000 fewer induced abortions and an associated 1,600 fewer maternal deaths, not to mention the preservation of 100,000 years of productive life that would otherwise be lost to maternal death and disability.

Significantly raising the level of contraceptive use to reduce unmet need will require increased investments in contraceptive supplies and services. For Uganda, much of that needed investment is likely to come from international donors. Even though family planning is not explicitly stated in the national budget, the Ugandan Ministry of Health recently committed itself to revitalizing the national family planning program and to an attitude of “zero tolerance” toward the all-too-common stockouts of contraceptive commodities (Uganda Ministry of Health 2008). However, progress toward eliminating stockouts has been limited due to insufficient funds and ongoing challenges in management of the supply chain.

The cost of providing modern contraceptive services and supplies to women at risk for unintended pregnancy would vary according to the mix of methods used. For example, the current level of use of specific methods costs an estimated US\$25 million.³ The costs to supply women with the methods to meet half of unmet at the current mix (so 65% of at-risk women would use a modern method) would be \$54 million and the costs to meet

³ All dollar amounts shown are in 2008 U.S. dollars.

all of that need (so 100% would use a modern method) would rise to \$83 million. It should be kept in mind that these are *total* contraceptive costs, which include those borne by the Ugandan people—i.e., a high proportion, 51% of medical expenses are paid out of pocket in the country (World Bank 2009)—and cover not just contraceptive commodities but the substantial overhead (or indirect) costs needed to upgrade the country’s health infrastructure⁴ to provide quality modern contraceptive services.

These costs, which may seem high at first, are more than compensated for by short-term savings to the health system from avoiding medical care related to unintended pregnancies and unplanned childbearing. In 2008, the estimated costs to treat post-abortion complications; provide prenatal, delivery and routine newborn care; and cover all obstetric emergencies amounted to an estimated \$335 million (Figure 3). These costs would be far higher, at \$411 million, without any contraceptive use, because far higher numbers of unintended pregnancies and unplanned births would result.

Women would experience far fewer unintended pregnancies, unplanned births and unsafe abortions with increasing method use, so the associated family planning and medical care costs would fall to \$256 million if half of unmet need were met at the current method mix, and to \$177 million if all at-risk women who wanted to delay or limit childbearing used a method to do so.

Thus, considering *total* costs of both contraceptives and medical care associated with pregnancy and childbirth, current use of contraception results in a *net* savings of \$51 million over what would be spent without any use at all. And although increasingly meeting unmet need would incur higher contraceptive costs at first, net savings would still result, since the higher outlays on contraception are more than offset by declines in medical costs brought about by fewer unplanned pregnancies and births. That is, compared with current overall costs (contraceptive services plus maternal, newborn and

⁴ These include investments in physical infrastructure (maintenance of existing facilities and construction of new facilities); support programs (such as information, education and communication activities); systems for supplying commodities; and improvement in management systems. (See: United Nations Economic and Social Council, 2009)

postabortion care), meeting half of unmet need at the current method mix results in a net savings of \$50 million. Meeting all of that need (so 100% of at-risk women use a modern method) generates a net savings over the current situation of \$101 million. Overall, every dollar spent on family planning saves nearly three dollars (\$2.75) on maternal and newborn care.

Currently, well-off women have better access than poor women to contraceptive services, and thus have benefited disproportionately from the advantages conferred by contraceptive use. But as contraceptive use expands throughout the population, poorer women stand to gain more as the gap in health outcomes between rich and the poor starts to shrink. For example, compared with no family planning use, current use decreases maternal mortality for the wealthiest women by 23 percentage-points more than for the poorest. But when contraceptive use expands to fill 50% of unmet need, the gap in the decrease in maternal mortality between the wealthiest and poorest women narrows to only 16 percentage-points. Thus, benefits from future increases in contraceptive use will be spread more equitably across the population than has been the case up until now.

Further, because unmet need among at-risk women is lowest in Kampala (32%) but highest in the poorest regions of West Nile and North (76–79%)—the very regions that can least afford the increased maternal, newborn and postabortion care costs brought on by unplanned pregnancies and births—improving access to needed contraceptive services would result in proportionately greater savings in those two regions than in the capital: For example, halving unmet need in Kampala would save \$42 per pregnant woman in medical costs incurred by unintended pregnancies and their outcomes, but halving unmet need in the West Nile would reap savings of \$60 per pregnant woman.

Conclusion:

Contraceptive use promotes the health and well-being of women and infants, their families and Ugandan society as a whole. With increased use, the country can attain several MDGs faster, especially those related to maternal and child health, poverty and HIV. We have focused here only on contraception's benefits in terms of preventing

unplanned pregnancy: In a country as hard hit by HIV as Uganda, which has an HIV adult prevalence rate of 6.4% as of 2004/2005 (Uganda AIDS commission 2009), the condom's ability to prevent both pregnancy and HIV presents an unparalleled opportunity to save lives and maximize resources and efficiency through the integration of contraceptive and HIV services (Ricky and Salen 2008).

Without any contraceptive use there would be about 1.7 million unintended pregnancies each year, compared with the current level of 1.2 million pregnancies. However, there could be as few as 190,000 unintended pregnancies annually if all couples with unmet need could reap the benefits of modern family planning. As family size preferences continue to decline, the demand for modern contraception will only go up further. The responsibility to meet this growing demand needs to be shared by a variety of players, including the private sector, the Ugandan government and international donors. Increasing publicly funded contraceptive services is especially important for poorer women who experience disproportionately high levels of unmet need. Thus, to maximize benefits, resources will need to be directed to areas of the country where unmet need is greatest.

Investing in contraceptive services not only promotes healthy mothers and babies, it also saves money. Higher levels of contraceptive practice also strengthen the labor force through improving the health of working women of childbearing age and the well-being of future generations. Taking on the cost of such services now enables the country to avoid much greater expenses down the road. The monetary savings from averting unintended pregnancy and its negative outcomes can be redirected toward public services and economic development; the human savings from maintaining and improving quality of life would be incalculable to every Ugandan family.

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Unintended Pregnancies and Their Outcomes

Table 1. Unmet need for improved contraception among Ugandan women aged 15-49 wanting to avoid pregnancy and outcomes of pregnancies, by region and wealth, 2008

Region and wealth quintile	No. of women aged 15-49	Women who want to avoid pregnancy*			All pregnancies†			% ending in induced abortions			
		Total no. of women	% using no method	% using a traditional method‡	% with unmet need for modern methods§	Total no. of pregnancies	% unintended		% mistimed births**	% ending in unwanted births††	
Total	6,640,000	3,250,000	61%	8%	69%	2,180,000	44%	56%	22%	9%	17%
Central 1	720,000	370,000	46%	12%	59%	220,000	40%	60%	22%	9%	20%
Central 2	700,000	380,000	48%	8%	56%	230,000	40%	60%	20%	12%	19%
Kampala	340,000	170,000	32%	9%	42%	80,000	47%	53%	13%	6%	29%
East Central	760,000	410,000	62%	9%	71%	260,000	44%	56%	23%	12%	13%
Eastern	970,000	500,000	69%	5%	74%	340,000	47%	53%	25%	8%	12%
North	990,000	440,000	79%	5%	84%	370,000	42%	58%	24%	7%	19%
West Nile	510,000	220,000	76%	5%	80%	180,000	36%	64%	25%	9%	20%
Western	1,020,000	500,000	62%	10%	72%	340,000	45%	55%	23%	11%	14%
Southwest	670,000	300,000	56%	13%	69%	200,000	51%	49%	19%	8%	15%
Q1- poorest	1,200,000	510,000	82%	4%	86%	460,000	45%	55%	24%	8%	14%
Q2	1,280,000	580,000	75%	5%	80%	480,000	44%	56%	24%	10%	15%
Q3	1,260,000	610,000	69%	8%	77%	430,000	44%	56%	22%	10%	16%
Q4	1,270,000	650,000	59%	10%	69%	430,000	43%	57%	22%	11%	16%
Q5 - wealthiest	1,650,000	920,000	37%	11%	48%	390,000	41%	59%	19%	9%	23%

Note: Data were calculated using a range of sources. See details at Web site url to come.

*Women who are married or are unmarried and sexually active (within past three months), are able to become pregnant (in the absence of contraceptive use), and do not want any more children or do not want a child in the next two years.

†Includes miscarriages, which are estimated at 16% of all known pregnancies. Because we don't present miscarriages separately, the final three columns that break down unintended pregnancies do not add up to the total of unintended pregnancies.

‡Rhythm, withdrawal and folk methods.

§Includes nonusers and users of traditional methods. By modern methods, we mean the pill, IUD, injectable, implant, male condom, and male and female sterilization.

**Mistimed births are those to women who did not want a child for at least two years when they became pregnant.

††Unwanted births are those to women who wanted no more children when they became pregnant.

Figure 1. Ugandan women are having more children than they want, especially if they are poor

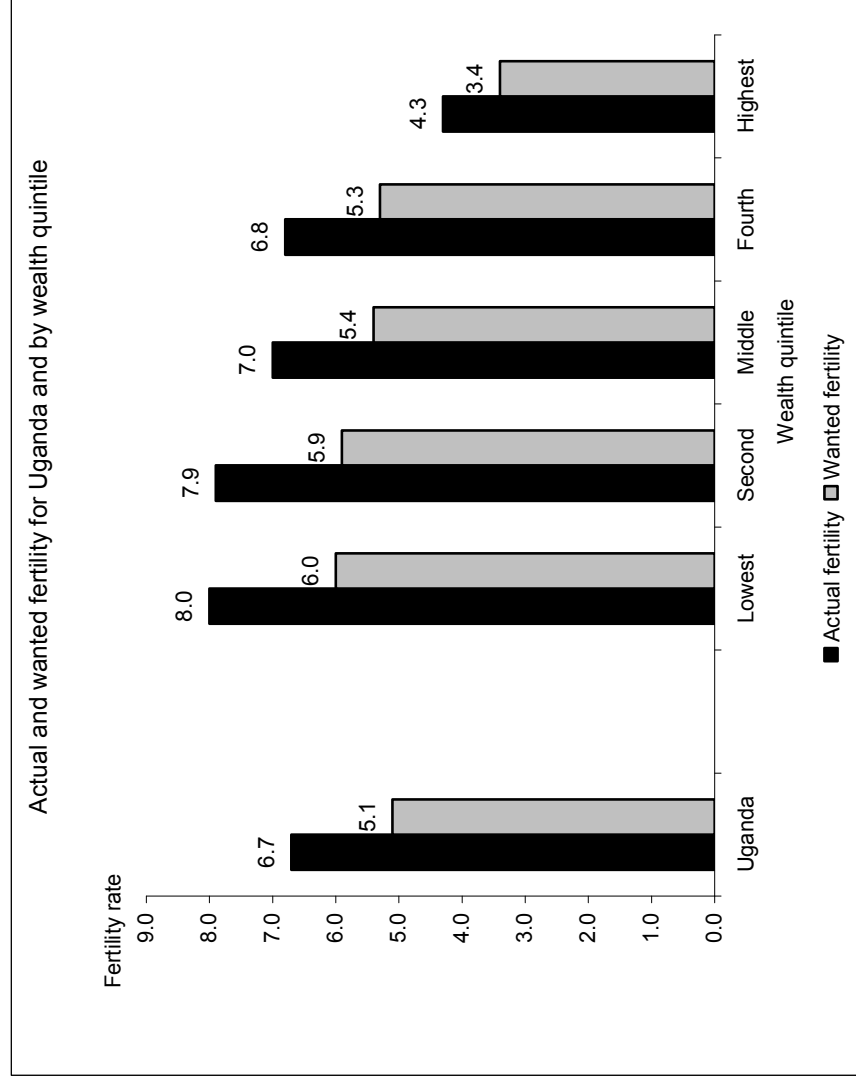
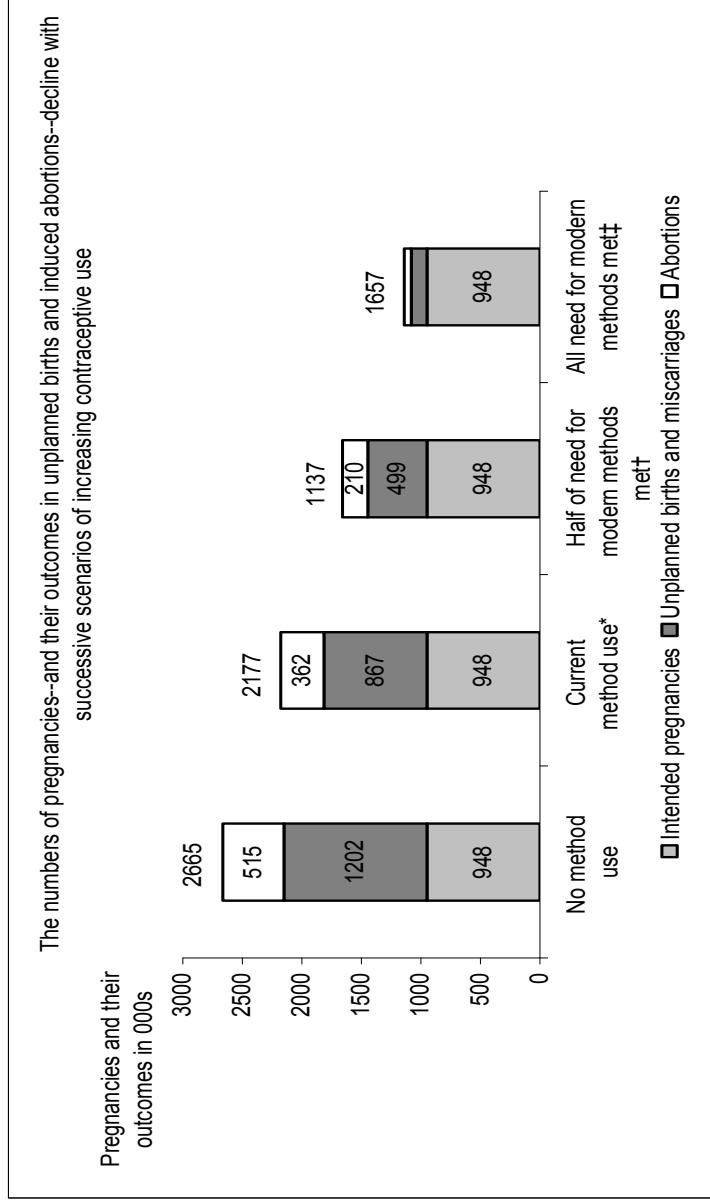


Figure 2. Use of contraception, especially modern methods, reduces abortions and unplanned births

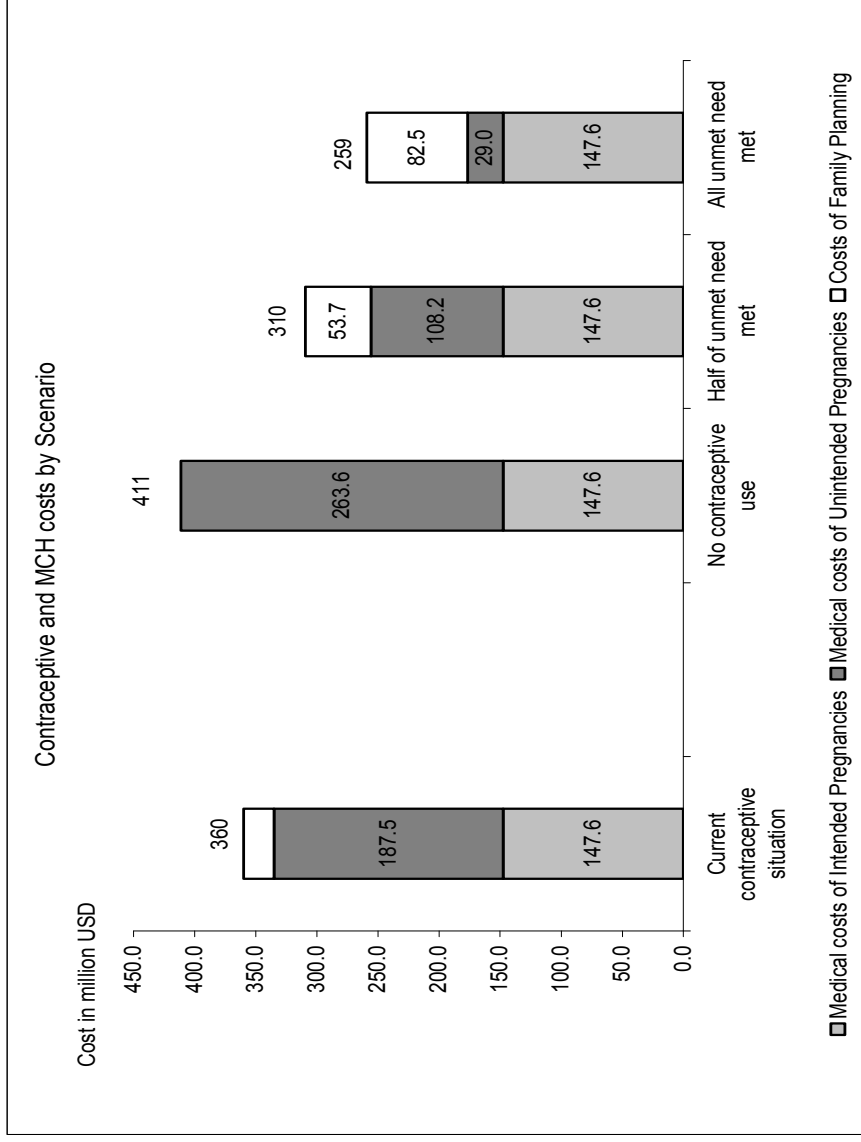


*Method mix of 31% modern, 8% traditional, 61% none.

†Method mix of 65% modern, 4% traditional, 31% none.

‡100% modern method use.

Figure 3. Investing in contraception could greatly reduce costs associated with unintended pregnancy



Note: Medical costs include costs for prenatal care, routine newborn care, professional delivery care, obstetric emergency care and treatment of complications from unsafe abortion.

Appendix 1:

Methodology⁵

Information on risk for unintended pregnancy and contraceptive use was tabulated from the 2006 Uganda Demographic and Health Survey (DHS). Women were considered at risk for unintended pregnancy if they were sexually active, fecund and desired to delay having a child for more than 2 years or to have no more children.⁶ These distributions were applied to the Uganda census data to estimate method use and nonuse among women at risk for unintended pregnancy in 2008. All calculations were made separately for nine regions and for wealth-status quintiles using special DHS data tabulations and census estimates for regional populations.

Birth rates from women in the 2006 DHS were used to estimate births in 2008, by whether they were desired when the pregnancy occurred, were desired at a later time, or were not wanted at all. This information, plus estimates of levels of induced abortion in Uganda in 2003 – which was obtained from a Guttmacher report on the incidence of induced abortions – were used to allocate estimated unintended pregnancies by outcome. Miscarriages were estimated as proportions of live births and induced abortions. The number of unintended pregnancies and their outcomes (births, induced abortions and miscarriages) for three hypothetical scenarios (zero contraceptive use, zero unmet need, and 50% of unmet need met) are estimated from adjusted method-specific contraceptive failure rates. Again, all analysis was carried out for nine regions and five wealth quintiles separately.

Pregnancy-related mortality and morbidity rates for women and infant mortality and morbidity were taken from the World Health Organization (WHO) studies of maternal deaths and deaths from unsafe abortion, from 2006 DHS infant mortality data and from the 2004 revision of the Disability-Adjusted Life Years (DALYs) estimated by the WHO Global Burden of Disease project.

Costs of contraceptive services and maternal newborn health care were estimated from basic cost elements. For each contraceptive method or MNH intervention, cost of drugs, supplies and materials, cost of labor, cost of hospitalization and program and system costs were marshaled to arrive at a cost per user per year of protection against unwanted pregnancy (in US\$ 2008). Program and system costs refer to indirect costs such as overhead and capital expenditure.⁷ The UNFPA Reproductive Health Costing Tool (RHCT) was the main source of input costs, while other cost elements were gathered from cost studies conducted in Uganda. Program and system costs (overhead and capital costs) were taken from the United Nations.⁸

⁵ A *Methodological Note* containing details of methods and data used in this study will soon be available online at www.guttmacher.org.

⁶ Women who self-reported that they were infertile for non-contraceptive reasons are excluded from the analysis.

⁷ The 2009 Program and System Costs for sub-Saharan Africa were used in the calculations.

⁸ United Nations, Economic and Social Council. 2009