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COST OF FAMILY PLANNING SERVICES IN GHANA



This publication was prepared by Felix Ankomah Asante for the Health Policy Project.

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ABBREVIATIONS

AIDS	acquired immune deficiency syndrome
CHPS	Community-Based Health Planning Services
CIC	combined injectable contraceptive
COC	combined oral contraceptive
CPR	contraceptive prevalence rate
DMPA	Depot Metroxyprogesterone Acetate
FHU	family health unit
FP	family planning
GDHS	Ghana Demographic and Health Survey
GHS	Ghana Health Service
GSS	Ghana Statistical Service
HIV	human immunodeficiency virus
HPP	Health Policy Project
IUD	intrauterine device
LAM	lactational amenorrhoea method
MDGs	Millennium Development Goals
NET-EN	Norethisterone Enanthate
NFP	natural family planning
NGOs	nongovernmental organisations
NHIA	National Health Insurance Authority
NHIS	National Health Insurance Scheme
NPC	National Population Council
POI	progestin-only injectable
POP	progestin-only pills
STI	sexually transmitted infection
TFR	total fertility rate

UNFPA United Nations Population Fund
USAID United States Agency for International Development
VSC voluntary surgical contraception

EXECUTIVE SUMMARY

Family planning (FP) is a major component of reproductive health, one of the pillars of safe motherhood, and an entry point to other reproductive health services such as prevention and management of sexually transmitted infections (STIs) and HIV and AIDS, comprehensive abortion care, management of infertility, screening for reproductive tract cancers, and prevention of gender-based violence (GHS, 2007). In 2012, the government of Ghana included FP commodities and services in the benefit package of the National Health Insurance Scheme (NHIS), creating a need to assess the cost of family planning. This activity focused on costing the FP services included in the National Family Planning Protocols of 2007, which are currently being delivered in health facilities and by nongovernmental organisations (NGOs) in Ghana. The objectives of the study were to determine the unit cost (direct and indirect) of providing FP services in Ghana and to project the resource requirements for scaling up FP services from 2012 to 2016.

Methodology

The study was carried out between March and July 2013. A bottom-up ingredients approach to costing, in which all inputs were listed and their contribution to the overall cost tallied, was combined with a step-down approach to allocate direct and indirect costs to each FP service on the basis of utilisation or workload. Nineteen purposefully selected sites were studied: five hospitals, two polyclinics, three health centres, three Community-based Health Planning Services (CHPS), two maternity homes, and four NGO service points. The sites reflect the key characteristics thought to influence unit cost estimation, including the level of health facility; location within the country; and ownership and utilisation of FP services. The study used 2012 service statistics in the 19 selected sites and 2012 prices to value the inputs' economic cost.

Results

The study found that on average the cost per client per year for the provision of FP services ranged from 135.29 Ghanaian cedi (GH¢) (US\$75.16) and GH¢82.60 (US\$45.89) for female condoms and combined injectable contraceptive (CIC) to GH¢11.75 (US\$6.53) and GH¢11.25 (US\$6.25) for natural family planning (NFP) and lactational amenorrhoea method (LAM), respectively. The unit cost for other FP services were as follows: male condoms, GH¢20.43 (US\$11.35); combined oral contraceptive (COC), GH¢26.87 (US\$14.93); progestin-only or mini-pills (POP), GH¢19.46 (US\$10.81); progestin-only injectable (POI), GH¢45.72 (US\$25.40); implants, GH¢63.11 (US\$35.06); intrauterine devices (IUDs), GH¢19.39 (US\$10.77); tubal ligation, GH¢52.20 (US\$29.00); and vasectomy, GH¢46.36 (US\$25.76).

Projecting the cost of providing all FP services in the country shows a rise from US\$40,480,136.02 in 2014 to US\$43,634,330.54 in 2015 and US\$46,922,214.96 in 2016, an increase of 15.91 percent between 2014 and 2016. The cost of FP commodities is expected to grow from US\$8,074,816 in 2014 to US\$8,628,121 in 2015 and US\$9,204,240 in 2016, representing an increase of 13.99 percent between 2014 and 2016.

BACKGROUND

Introduction

Family planning (FP) plays a pivotal role in the attainment of many of the Millennium Development Goals (MDGs) in Ghana. It is a major component of reproductive health, one of the pillars of safe motherhood, and an entry point for other reproductive health services such as prevention and management of sexually transmitted infections (STIs) and HIV and AIDS, comprehensive abortion care, management of infertility and gender-based violence cases, and screening for reproductive tract cancers (GHS, 2007). In Ghana, the National Family Planning Protocols of 2007 provide standard guidance for FP service provision at all levels and for both the public and private sectors, including nongovernmental organisations (NGOs).

Recognizing the link between rapid population growth and social and economic development, the government of Ghana has worked to build a positive policy environment for family planning, an effort spearheaded by the National Population Council (NPC). Article 3, clause 4 of the 1992 Fourth Republican Constitution of Ghana enjoins the government to maintain a population policy that is consistent with the aspirations and development needs of the country. The NPC was established in 1992 and given legal backing by the 1994 National Population Council Act 485. It is responsible for coordinating all population-related programmes in the country, setting targets for programme performance, interpreting and reviewing the population policies, undertaking and commissioning research to inform policy making, and ensuring the integration of population variables into development planning in Ghana.

In 2011, the NPC and its partners initiated a process to cost FP commodities and services in Ghana in support of its advocacy and coordination of FP programme implementation. The aim of this exercise was to assist the council in making a case for the inclusion of FP commodities and services in the benefits package of the National Health Insurance Scheme (NHIS). The government subsequently made pronouncements to do so (NHIA Act 852 of 2012); there is a need to assess the cost of FP commodities and services and combine these cost data with demographic data and coverage goals to generate the resources required for scaling up family planning nationally.

Family Planning in Ghana

Ghana's Population Policy of 1969 was one of the first on the African continent. However, a 1989 assessment by the national Population Policy Technical Advisory Committee documented the lack of progress in achieving the goals the policy had set out, as a result of a lack of grassroots involvement in the development of the policy and a strategic plan for implementation. In 1994, the policy was revised to take these factors into account. The National Population Policy (Revised Edition, 1994) set clear targets regarding fertility and contraceptive use and addressed emerging issues such as HIV and AIDS, population and the environment, concerns about the elderly and children, and the development of new strategies to ensure achievement of the revised policy objectives. The revision also entailed a concerted effort to systematically integrate population variables into all areas of development planning.

Selected Major Goals of the Revised Population Policy (NPC, 1994)

- To reduce the total fertility rate (TFR) from 5.5 in 1993 to 5.0 by year 2000, 4.0 by 2010, and 3.0 by 2020. Accordingly, the policy aims to achieve a contraceptive prevalence rate (CPR) of 15 percent for use of modern methods by year 2000, 28 percent by 2010, and 50 percent by 2020.
- To make family planning services available, accessible and affordable to at least half of all adults by the year 2020.
- To reduce the proportion of women below 20 years and above 34 years having births to 50 percent by the year 2010 and to 80 percent by 2020.
- To reduce the population growth rate from 3 percent to 1.5 percent by 2020 while increasing life expectancy from the current level of 58 years to 65 years by 2010, and 70 years by 2020.

The attainment of these population goals is recognised as an integral component of the national strategy to accelerate economic development, eradicate poverty, and enhance the quality of life for all Ghanaians. These policies are further supported by the current national blueprint for development, the Ghana Shared Growth and Development Agenda (2010–2013), which recognizes family planning as a top priority for inclusion in national development plans and activities at all levels.

In collaboration with the United Nations Population Fund (UNFPA), the United States Agency for International Development (USAID), the World Bank, and other development partners, Ghana has implemented several family planning and reproductive health projects. Support from these agencies has targeted policy coordination, implementation, and service delivery.

Since the revised policy was implemented in 1994, improvements in family planning have accelerated. Data from the 1993 to 2008 *Ghana Demographic and Health Surveys* (GDHS) showed a decrease in the country's TFR—to an average of four children per woman in 2008—and a CPR increase for modern methods to 19 percent in 2003, followed by a decline to 17 percent in 2008. Although the TFR has declined and contraceptive prevalence has increased, unmet need for family planning among married women remained high (50% in 1988 and 42% in 2008) and women continue to have more children than they desire.

The Ghana Health Services/Family Health Unit (FHU) has made the availability and appropriate use of FP services a priority. Data from the five consecutive GDHS (1988–2008) showed marked increases in knowledge about family planning and use of FP services and methods available in Ghana. Between 1993 and 1996, the FHU expanded access to permanent (mini-laparotomy and vasectomy) and long-acting (IUDs and implants) methods and introduced the monthly (combined) injectable and female condom in both the public and private sectors.

Current use of contraception varies by residence (urban or rural, and regional) and levels of education and wealth. The 2008 GDHS showed that women in urban areas were more likely to use modern methods of contraception than women in rural areas (24.2% vs. 14.9%). Use of both male and female condoms, IUDs, and female sterilisation is two to three times higher in urban areas than in rural Ghana. The prevalence of modern method use ranges from 7.7 percent and 9.7 percent in Northern and Upper East regions to 24.8 percent and 26.0 percent in Brong Ahafo and Greater Accra regions, respectively.

The order of preferred methods has changed since the 1998 GDHS. The proportion of non-users who prefer injectables for future use increased from 36 percent in 1998 to 43 percent in 2003, and declined to 39 percent in 2008. The proportion of non-users who prefer pills decreased from 21 percent in 1998 to 15 percent in 2003, and increased to 21 percent in 2008. Preference for implants increased from 4 percent in

1998 to 11 percent in 2003, and remained steady for five years (10% in 2008). Intention to use the IUD also increased from 2 percent in 1998 to 4 percent in 2003, and declined to 1 percent in 2008. In 1998, 4 percent of non-users said that they preferred to use female sterilisation in the future compared with just 2 percent in 2008.

Short-term contraceptive methods include oral contraceptive pills, condoms, and injectables. Long-term contraceptive methods provided include IUDs, female sterilisation, vasectomy, implants, and natural methods. A total of 2,084,686 individuals used some FP service methods in 2010 while 2011 and 2012 recorded 1,699,128 and 1,548,293 users, respectively (Table 1).

Table 1: Number of Users of Family Planning Service Methods, 2010–2012

Family Planning Methods	Number of Users		
	2010	2011	2012
Fertility awareness-based methods			
NFP	66,890	10,299	9,987
LAM	4,678	106,757	108,188
Barrier methods			
Male condom	809,840	442,915	250,894
Female condom	6,227	4,226	7,104
Spermicide (foaming tablet)	554	-	-
Hormonal Methods			
Combined pill (COC)	240,286	153,940	161,041
Mini pill (POP)	25,996	30,536	30,067
Norigynon inject (CIC)	124,368	186,282	84,229
Depo injectable (POI)	733,182	649,924	789,524
Implant	35,740	62,326	80,968
Reversible FP methods			
IUD	21,503	27,313	17,969
Permanent FP methods			
Vasectomy	536	282	995
Tubal ligation	15,440	24,328	7,327
Total users	2,084,686	1,699,128	1,548,293

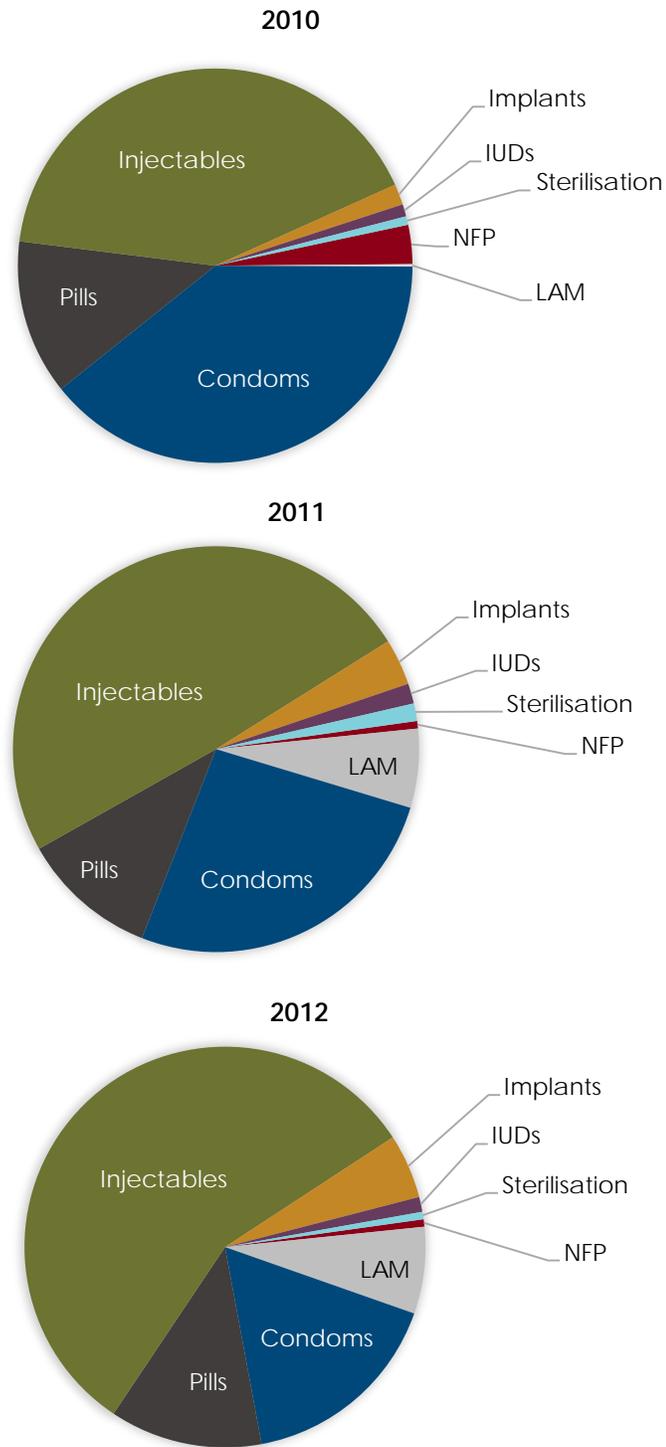
Source: Ghana Health Service, 2010–2012 Annual Reproductive and Child Health Reports, Accra, Ghana.

Injectables accounted for the highest use in all three years, increasing proportionally from 41 percent in 2010 to 50 percent in 2011 and 56 percent in 2012. This is followed by condom use, which formed about 39 percent of total use in 2010, but declined to 27 percent in 2011 and 17 percent in 2012. The pill (both the combined oral contraceptive and mini pill) ranked third in all three years, accounting for 12 percent of total use on average. The use of LAM has increased from 3 percent in 2010 to 6 percent in 2011 and 7 percent in 2012. In 2010, there was some use of spermicidal foaming (contraceptive) tablets (0.03% of total use) but none in 2011 or 2012. Long-term contraceptive methods such as IUDs and vasectomy also received minimal patronage. NFP methods, apart from LAM, accounted for less than 1 percent of total

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use in all three years. Figure 1 shows the national shifts in short- and long-term methods between 2010 and 2012.

Figure 1: Trend in Family Planning Method Preference, 2010–2012



Source: Ghana Health Service, 2010–2012 Annual Reproductive and Child Health Reports, Accra, Ghana.

As shown on Figure 1, more women are choosing long-term methods, and the government will need to ensure the availability of commodities and trained personnel to meet this increased demand (GSS et al., 2008). As the government takes over a greater share of responsibility for financing FP programmes with domestic resources, it requires up-to-date information about the cost of FP services. Such information will feed into future strategic planning and coordination and resource mobilisation for family planning, whether integrated into the NHIS or otherwise.

Study Objectives

The objectives of the FP costing study are primarily to provide the GHS/FHU in the Ministry of Health, as well as other programs into which family planning is integrated, a better understanding of the costs of delivering FP services. The specific objectives of the costing study are to

- Calculate unit cost estimates for a range of FP service delivery methods and commodities
- Identify the cost drivers (direct and indirect) of the specific unit costs for each FP service delivery modality
- Provide estimates of FP costs from 2014 to 2016

The study results provide information on unit costs of delivering FP services through a variety of methods, at different levels of the healthcare system and in different locations throughout the country. Additional analyses should be able to use this data to assess the most efficient ways of delivering FP services, and to identify the best allocation of resources to minimise costs of the FP component of NHIS.

FAMILY PLANNING SERVICE INTERVENTIONS COSTED

The FP services costed in this study are provided at all levels by the public or private sector, including NGOs. In all, 12 service delivery methods in the 2007 National Family Planning Protocols were included in the study.

1.1. Natural Family Planning (NFP)	NFP can be used to either avoid or achieve pregnancy. The service can be provided separately or as a part of an established health and family planning or community agency programme. Delivery of NFP services is not dependent on medically qualified personnel. The NFP methods used include basal body temperature (BBT), calendar (rhythm), and symptothermal.
1.2. Lactational Amenorrhoea (LAM)	LAM is a short-term contraceptive method which can be initiated at the moment of birth or early in the postpartum period and used for up to six months if the mother remains amenorrhoeic and practices exclusive breastfeeding. Suckling at the breast causes suppression of ovulation.
1.3. Condoms (male and female)	Condoms are thin sheaths made of latex rubber, vinyl, or polyurethane, which may be treated with spermicides for added protection against pregnancy and sexually transmitted diseases such as HIV. There are two types of condoms: the male condom and the female condom. Worn by the man, a male condom is a thin covering made of latex, plastic, or animal membrane to prevent sperm from entering a woman's body. Worn by the woman, the female condom is a tube of soft plastic (polyurethane) that helps keep sperm from getting into her body.
1.4. Diaphragm or Cervical Cap	Each of these barrier methods is placed inside the vagina to cover the cervix to block sperm. The diaphragm is a dome-shaped (rubber) shallow cup. The cervical cap is a thimble-shaped (soft rubber) deep cup with a firm, round rim. It fits around the base of the cervix. They are inserted into the vagina with spermicide before sexual intercourse to block or kill sperm.
1.5. Spermicides	Spermicides are chemicals that deactivate or kill sperm cells and provide lubrication and additional barrier effect. They come in several forms: gel, foam, tablet, cream, suppository, or film. Spermicides can be used alone or in combination with a condom, diaphragm, or cervical cap.
1.6. Combined Oral Contraceptive (COC)	COC, also called "the pill," consists of a course of 21 synthetic hormone pills (oestrogen and progestin, similar to hormones naturally present in a woman's body) and seven iron pills per cycle.
1.7. Progestin-Only Pill (POP)	POP, also called "the mini pill" contains only one hormone (progestin) instead of both oestrogen and progestin. POP is a good choice for breastfeeding women who want to use oral contraceptives or those who cannot take oestrogen. It is not a good option for women who have breast cancer or liver disease, or tuberculosis patients on Rifampicin.
1.8. Combined Injectable Contraceptive (CIC)	CIC, or "the shot," is a combination of natural oestrogen and progestin administered at four-week intervals by deep intramuscular injection in a woman's buttocks or arm. The formulation currently available in Ghana is Norigyon.

1.9. Progestin-Only Injectable (POI)	POI, or “the mini shot,” contains only the hormone progestin that is administered via injection in a woman’s buttocks or arm. There are two preparations currently available in Ghana: depot medroxyprogesterone acetate (DMPA), or Depo Provera; and norethisterone enanthate (NET-EN), or Noristerat. A single injection of DMPA or NET-EN provides safe and highly effective contraception for three or two months, respectively.
1.10. Implant	Implant is a single, thin, flexible rod (capsule) that is inserted under the skin of a woman’s upper arm. The rod contains progestin (Levonorgestrel) that is released into the body over three years. There are two types of implants in Ghana: Jadelle, consisting of two small plastic capsules, and Norplant, consisting of six small plastic capsules.
1.11. Intrauterine Devices (IUDs)	The IUD is a small, flexible T-shaped plastic device that is inserted into a woman’s uterine cavity. It releases a small amount of progestin each day to prevent pregnancy. An applicator is used to insert and remove the IUD through the opening of the cervical canal. The most commonly used IUDs in FP programmes in Ghana are the copper-bearing CUT 380 IUD (effective for up to 10–12 years) and Multiload (MLCu250 and 375) and the NOVAT (both effective for up to 5 years).
1.12. Voluntary Surgical Contraception (VSC)	<p>VSC is a minor surgical procedure—vasectomy for men and tubal ligation for women—to prevent the patient from having any more children.</p> <ul style="list-style-type: none"> • Male sterilisation: A vasectomy keeps a man’s sperm from going to his penis, so his ejaculation never has any sperm that can fertilize an egg. • Female sterilization: Tubal ligation (or “tying tubes”) and transcervical sterilisation prevent the sperm and eggs from meeting for fertilization. The woman can have her fallopian tubes tied (or closed) or a tiny device threaded into each fallopian tube.

TARGET AUDIENCES FOR THE STUDY

Many stakeholders in Ghana have an interest in the cost of FP services. The target audiences for this study are

1. The government of Ghana, including the NPC, GHS, Ministry of Health, Ministry of Finance, and the National Health Insurance Authority (NHIA)
2. International donor and technical assistance agencies
3. Civil society organisations in Ghana that provide FP services and for advocate family planning

SCOPE OF THE STUDY

The FP costing exercise built on previous work undertaken by the NPC and its partners. It used a combination of normative approaches listed in the 2007 Family Planning Protocols and collection of data from a number of health facilities in each of the three ecological zones of Ghana: coastal, forest, and savannah.

The sampling was based on the magnitude of utilisation of FP services (high, medium, low) and ownership (government, mission, private, NGO). Selection of the health facilities took into consideration the structure of health delivery systems in Ghana (teaching hospitals, regional hospitals, district hospitals, polyclinics, health centres, CHPS). The data collection was based on service statistics for 2012 to ensure complete statistics in all facilities.

TIMEFRAME AND ANALYTIC HORIZON

For any study, the timeframe (period over which the service is carried out) and analytic horizon (period over which the cost and outcome of the intervention or service occurred) should be long enough to capture all relevant positive and negative programme effects. For this study, we defined both the timeframe and analytic horizon as one year.

METHODOLOGY

Costing Approach

The study focused on unit cost analysis, defined as the cost of providing FP service for one client for one year. An ingredients approach to the costing analysis was used whereby quantities of each input are identified and prices are then attached to estimate their contribution to the overall cost. The approach considered FP services as a system in which direct and indirect inputs are transformed into outputs through processes or actions. The system approach helps to ensure that the analysis captures the full range of inputs, defined as anything the service needs to function and produce the desired outputs. Inputs include recurrent items such as labour (health workers, administrative staff, volunteers); supplies (family planning commodities, medical consumables, office materials, promotional materials); and fixed capital items (medical and office equipment, buildings, land, vehicles). Valuing these inputs (putting a cost or price on them) is the focus of the study.

Study Sites

Ghana's FP service delivery environment is complex and multifaceted. The sample selection of facilities for the FP costing study had to reflect that complexity by including FP service delivery sites from the public, private, and NGO sectors. Additionally, all service delivery modalities had to be represented, as well as geographic disparities, rural/urban areas, and volume of service delivery.

In choosing where to collect data, the team used the GHS-accredited FP sites as a starting point. After consultation with GHS/FHU and its partners, facilities were selected to ensure adequate representation of all variables under consideration in the study. The team chose regions first and then identified associated regional and district hospitals, polyclinics, health centres, and maternity homes within each region, and determined whether they were urban or rural; public, private, or NGO. From the site mapping and breakdowns, a purposive sample was selected according to the following criteria:

- *Level of health facility* (from highest to lowest): teaching, regional, district hospital, health centre, or CHPS
- *Ownership*: government, mission, maternity home, or NGO
- *Location within the country*: including the three main agro-ecological zones (coastal, forest, savannah)
- *Utilisation of FP services*: high, medium, or low

Based on these criteria, 19 sites were selected: 5 hospitals, 2 polyclinics, 3 health centres, 3 CHPS, 2 maternity homes, and 4 NGO service sites (see Table 2 for the list of selected sites/facilities).

Table 2: Site Selection for Cost of Family Planning Services

Facility	Region	Service Utilisation			Ownership of Facility			Type of Facility					Agro-ecology Zone		
		Low	Medium	High	GOV	CHAG	PRIV	HOSP	POLY	HC	CHPS	MH	Coastal	Forest	Savannah
GAR															
1.				X	X			X					X		
2.			X		X				X				X		
3.		X			X						X		X		
4.			X			X		X					X		
ASH															
5.				X	X			X						X	
6.		X			X						X			X	
7.			X		X	X				X				X	
BAR															
8.			X				X					X		X	
9.							X					X		X	
10.				X	X					X				X	
NR															
11.				X		X			X						X
12.		X			X			X							X
13.			X		X			X							X
14.		X				X				X					X
15.		X			X						X				X
NGO															
16.	GAR												X		

Facility	Region	Service Utilisation			Ownership of Facility			Type of Facility					Agro-ecology Zone		
		Low	Medium	High	GOV	CHAG	PRIV	HOSP	POLY	HC	CHPS	MH	Coastal	Forest	Savannah
17.	BAR													X	
18.														X	
19	NR														X

Note:

GAR Greater Accra Region
 Ash Ashanti Region
 BAR Brong Ahafo Region
 NR Northern Region
 GOV Government
 MH Maternity home

CHAG Christian Health Association of Ghana
 HOSP Hospital
 POL Polyclinic
 HC Health centre

Types of Inputs Costed

A full costing of all inputs gives decisionmakers the best sense of the real unit cost of the programme/service. Thus, any input determined to be critical to the successful provision of FP services was included in the costing. For each FP service level, all resources were grouped into direct programme-related items and indirect costs (see Appendix 1 for details of how the costs were estimated).

Direct Costs	Indirect Costs at the Facility Level
<ul style="list-style-type: none"> • Staff time for providing FP services—counselling and clinic visits • FP commodities • Medical consumables • Other consumables, mainly medical supplies • Laboratory testing 	<ul style="list-style-type: none"> • Administrative staff time • Supervision from regional or central level • Office equipment • Medical equipment • Vehicles used for programme administration • Physical infrastructure for administering the programme/service • Transport costs for administration • Public utilities (electricity, water, etc.) • Maintenance and repair • Staff training • Other administrative costs (office supplies, legal costs, audit)

The direct programme-related costs were classified into specific FP methods or delivery services. Costs were then grouped by resource inputs (salaries and allowances, supplies, transport, and capital), and by activity related to each FP method using the classification and framework listed in the Family Planning Protocol (GHS, 2007). Only the costs of activities that were clearly related to the provision of FP services were included. Certain activities were not specific to family planning and were not included in the study. For example, general administrative support from national health authorities and technical assistance from external donor agencies involve activities that would be done in the absence of the family planning. The analysis was undertaken from the perspective of service providers (i.e., health facilities). This implies that out-of-pocket costs incurred by FP clients (e.g., travel costs, opportunity cost of travel time, user fees for services or drugs, and other social costs) were excluded from the analysis.

Data Collection and Analysis

A standard questionnaire to collect data from the 19 selected sites was developed by the research team, pretested, and used to train the data collection team (see Appendix 2 for the final questionnaire). The data collection team travelled to the 19 study sites between April and May 2013 to apply the questionnaire. Site visits included a review of the FP activities run by the facility, collection of financial information, and interviews with key facility service providers/officials to establish costs incurred for specific FP methods. Central sources of data on resource use and prices were collected from the USAID-supported DELIVER Project in Ghana, Ghana Health Services, programme documents, and financial records.

As a general rule, the value of an input should reflect its economic (opportunity) cost. In most cases, the economic cost was the same as the financial cost (the amount paid for it). However, the cost sometimes

differed if the input was not purchased at market price (e.g., donated drugs or volunteer labour). The study aimed to identify both the financial and market cost of inputs (where a difference may exist). For donated or subsidised inputs, market prices were estimated.

Data were entered into an Excel-based costing tool developed as part of this project. The template includes one workbook for each facility, a workbook that summarises the facility data collected, and a workbook that consolidates the data for analysis. Data were then analysed to identify the key cost drivers of each FP service delivery method. The analysis of the unit cost was based on the total annual cost of inputs and the number of FP clients at each of the delivery sites. Where appropriate, the data are presented as national average costs and direct and indirect costs attributable to specific FP services. Costs were calculated in Ghanaian cedi (GH¢) and converted to U.S. dollars using an average 2012 exchange rate of GH¢1.80 to US\$1.

Limitations of the Study

One overarching limitation of the study was the nonrandomised selection of study sites, which introduced an element of uncertainty when extrapolating the results nationally. Another limitation was the relatively small size of the sample, which precluded carrying out tests of statistical significance when comparing groups of sites (e.g., hospitals and health centres).

The data collection teams applied a standard questionnaire at each site, but the quality and completeness of the data were not uniform across sites. Teams attempted to contact and interview those persons who were most knowledgeable about a programme's functioning. However, responsibility for programmes is typically scattered across various persons and departments within sites. The limited amount of time available at each site meant teams were not always able to locate and interview all key informants. This particularly hampered the team's ability to collect data on some of the facility-wide indirect costs shared by the FP service, such as the costs of public utilities, maintenance and repair, and transportation. However, these inputs were minor contributors to overall unit cost, so any underestimate of unit cost arising from this lack of information is probably minimal.

Another limitation was recall bias, because many of the data on resource use were estimated based on providers' recall. The most important of these were the amount of staff time consumed in a typical client visit, and the average number of visits the typical client makes during a year. Although all sites had information on the number of clients, very few providing FP services kept accurate data on the number of visits clients made during the year. Basing the calculations on these estimates could introduce errors into the cost results. Finally, all indirect costs for general programme support—for family planning and from national health authorities on FP services—were not included in the costing because they are centrally managed and not available at the site/facility level.

RESULTS

The results focus on the unit cost of providing FP services for one year (cost per client per year). Where appropriate, results are shown by national averages, direct, and indirect cost.

Unit Cost of Family Planning Services

The most representative indicator of national-level FP service cost is an average across the 19 sites/facilities weighted by the number of clients served at each site. Using this weighted average, the average cost per client per year for the various family planning services in Ghana is shown in Table 3. Cost per client per year for the provision of FP services ranges from GH¢135.29 (US\$75.16) and GH¢82.60 (US\$45.89) for female condoms and CIC to GH¢11.75 (US\$6.53) and GH¢11.25 (US\$6.25) for NFP and LAM, respectively.

The unit cost for VSC (vasectomy) was based on providing the service to only one client in all 19 study sites/facilities; thus, unit cost may be under- or overestimated. In 2012, diaphragms/cervical caps and spermicides were not provided at any of the 19 sites/facilities visited for data collection.

Table 3: Unit Cost of Family Planning Services in Ghana

Family Planning Service	Unit Cost	
	GH¢	US\$
Natural family planning (NFP) method	11.75	6.53
Lactational amenorrhoea method (LAM)	11.25	6.25
Female condoms	135.29	75.16
Male condoms	20.43	11.35
Diaphragm/cervical cap	N/A	N/A
Spermicides	N/A	N/A
Combined oral contraceptive (COC)	26.87	14.93
Combined injectable contraceptive (CIC)	82.60	45.89
Progestin-only pills (POP)	19.46	10.81
Progestin-only injectable (POI)	45.72	25.40
Implants	63.11	35.06
Intrauterine devices (IUDs)	19.39	10.77
Voluntary surgical contraception (tubal ligation)	52.20	29.00
Voluntary surgical contraception (vasectomy)	46.36	25.76

N/A—service was not provided in 2012 by the sites/facilities visited for data collection.

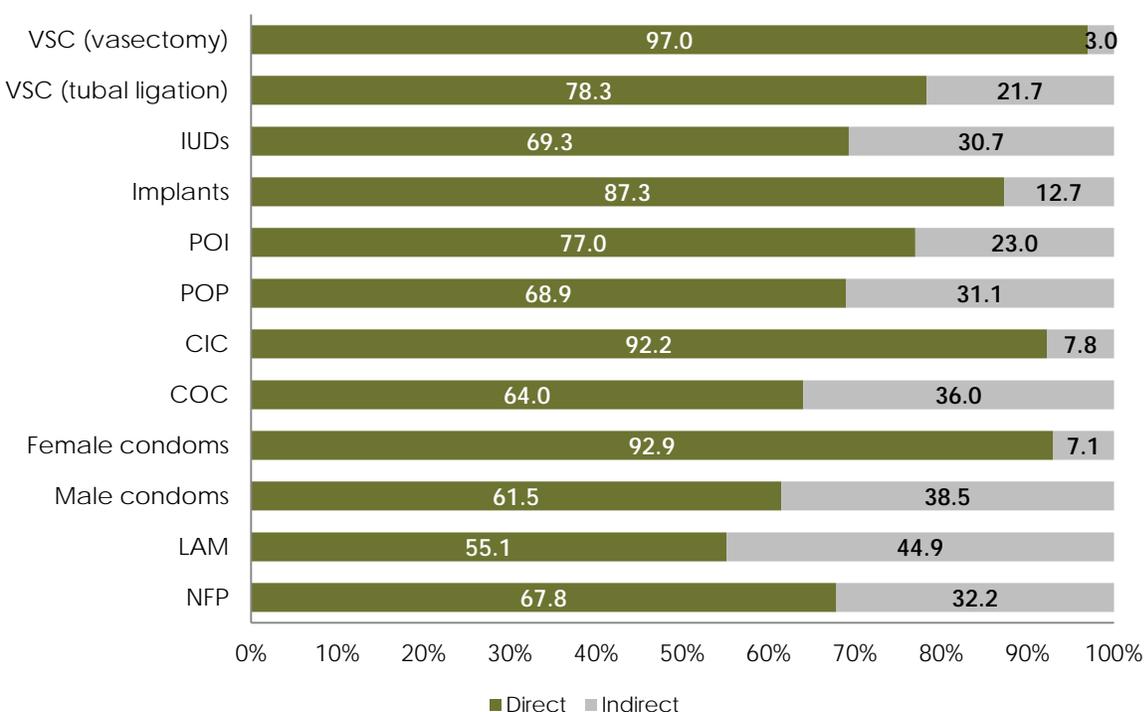
Indirect and Direct Costs

Figure 2 shows the direct and indirect cost (in percent) components in the unit cost of FP services.

The study revealed that LAM, male condoms, COC, and NFP had the highest indirect costs: 44.9 percent, 38.5 percent, 36.0 percent, and 32.3 percent of unit cost, respectively. One reason for this is the frequency with which a client can or will visit the site or facility for the service in a year. The FP service with the lowest percentage of indirect cost was VSC (vasectomy) (3.0%), followed by female condoms (7.1%) and CIC (7.8 %).

The highest percentage of direct cost was for VSC (vasectomy) (97.0%), followed by condoms (89.8%) and VSC (tubal ligation) (78.3%). The FP service with the lowest percentage of direct cost was LAM (55.1%), followed by COC (64.0%) and NFP (67.8%).

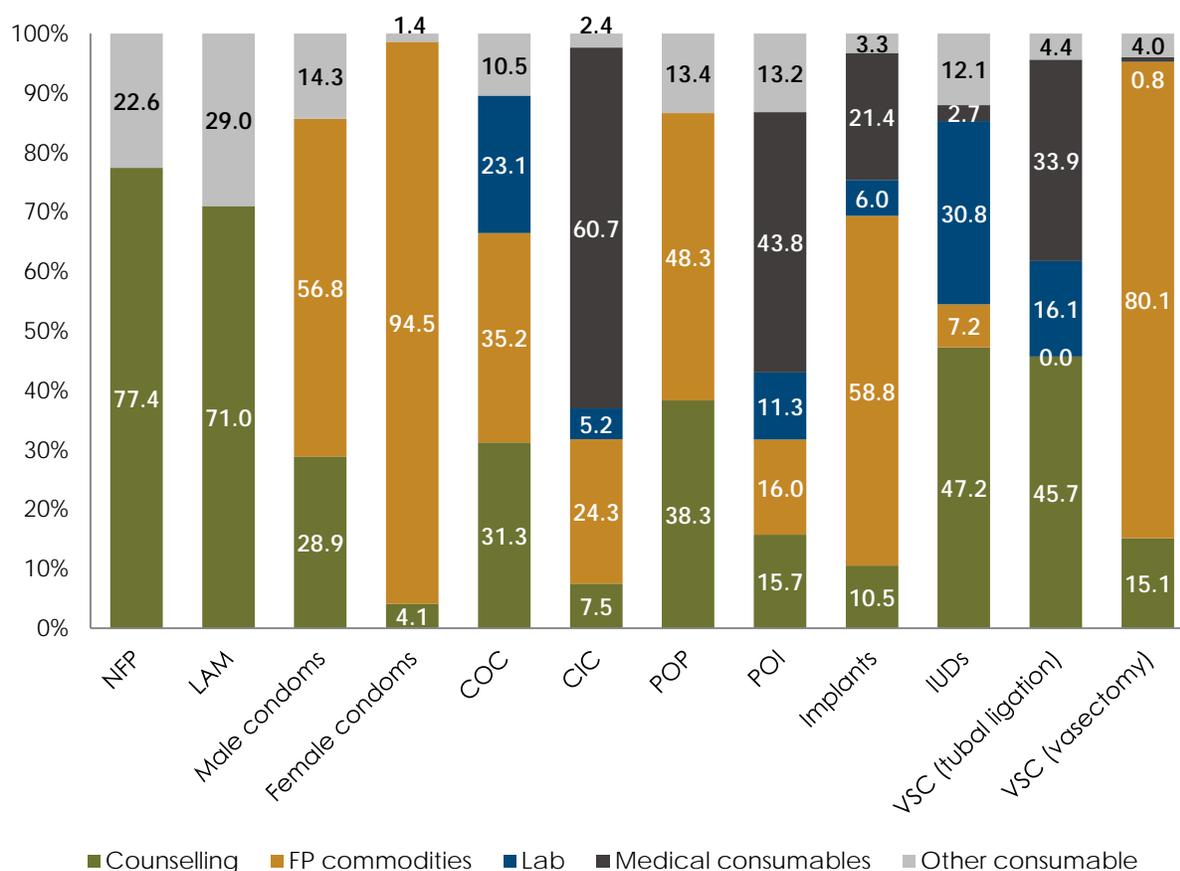
Figure 2: Direct and Indirect Cost of Family Planning Services



Components of Direct Cost

The direct cost of FP services consisted of five components: counselling, FP commodities, laboratory, medical consumables, and other consumables. Figure 3 shows the components of the direct cost (in percentage) of all the services costed in the study. The data reveal the importance of personnel time for counselling in the direct cost of FP service provision. This ranged from 77.4 percent for NFP to 7.1 percent for condoms. Another important factor in the direct cost composition is the FP commodity. This ranges from 90.3 percent of total direct cost for condoms, to 80.1 percent for VSC (vasectomy), and no use of family planning commodities in NFP and LAM.

Figure 3: Components of Direct Cost of Family Planning Services (Percentage)



Projected Cost of Family Planning Services in Ghana, 2012–2016

The projected cost of FP services in Ghana was obtained by multiplying the projected population for each FP service for a year (obtained from the NPC projection) by the unit cost per client per year for delivering the service.

Total Cost

The total projected cost of providing all family planning services in Ghana in 2012 was US\$34,021,632.19. Direct cost constituted 77 percent (US\$26,218,004.51) of total cost, and indirect cost 23 percent (US\$7,803,627.68). The total cost of all FP services in 2013 rose to US\$37,455,149.36, with direct cost again constituting 77 percent (US\$28,784,255.86) and indirect cost 23 percent (US\$8,670,893.50). The total cost of all family planning services in Ghana were projected to increase in 2014 to US\$40,480,136.02. From 2014 to 2016, total cost was projected to increase by about 7.6 percent per annum, with direct cost averaging 76 percent and indirect cost 24 percent for all FP services. By 2016, total cost is expected to reach US\$46,922,214.96 (Table 4).

Components of Direct Cost

The projected total direct cost of all family planning services in Ghana in 2012 was US\$26,218,004.51. Medical consumables accounted for 36 percent (US\$9,513,368.36) of this direct cost and FP commodities 26 percent (US\$6,922,736.50). Laboratory services made up only 10 percent (US\$2,499,684.78) of total direct cost. In 2013, the total direct cost increased to US\$28,784,255.86. Medical consumables remained the most important cost item, again accounting for 36 percent (US\$10,366,552.09) of total direct cost.

Similar to 2012, laboratory services constituted only 9 percent (US\$2,723,859.99) of total direct cost. Total direct cost of all FP services was projected to increase to US\$31,029,039.43 in 2014. Medical consumables were again expected to account for about 36 percent (US\$11,096,577.14) of direct cost, and laboratory services about 9 percent (US\$2,915,680.09). Projections for 2015 and 2016 indicate increases similar to those in 2014. The cost of FP commodities is expected to increase 32.96 percent, from US\$6,922,736 in 2012 to US\$9,204,240 in 2016. Thus, total direct cost of all FP services in Ghana is estimated to reach US\$33,369,071.64 in 2015 and US\$35,807,648.73 by 2016 (Table 5).

Table 4: Projected Total Cost of Family Planning Services in Ghana, 2012–2016 (US\$)

Family Planning Service		Year				
		2012	2013	2014	2015	2016
Natural Family Planning (NFP) Method	Number of users	9,987	16,034	22,380	29,038	36,018
	Unit cost	6.53	6.53	6.53	6.53	6.53
	Total cost of FP service	65,215.11	104,702.02	146,141.40	189,618.14	235,197.54
	Direct cost (67.8)	44,215.84	70,987.97	99,083.87	128,561.10	159,463.93
	Indirect cost (32.2)	20,999.27	33,714.05	47,057.53	61,057.04	75,733.61
Lactational Amenorrhoea Method (LAM)	Population	108,188	173,692	242,443	314,564	390,181
	Unit cost	6.25	6.25	6.25	6.25	6.25
	Total cost of FP service	676,175	1,085,575	1,515,268.75	1,966,025	2,438,631.25
	Direct cost (55.1)	372,572.43	598,151.83	834,913.08	1,083,279.78	1,343,685.82
	Indirect cost (44.9)	303,602.58	487,423.18	680,355.67	882,745.23	1,094,945.43
Female Condoms	Population	7,104	7,741	8,286	8,854	9,445
	Unit cost	75.16	75.16	75.16	75.16	75.16
	Total cost of FP service	533,936.64	581,813.56	622,775.76	665,466.64	709,886.20
	Direct cost (92.9)	496,027.14	540,504.80	578,558.68	618,218.51	659,484.28
	Indirect cost (7.1)	37,909.50	41,308.76	44,217.08	47,248.13	50,401.92
Male Condoms	Population	250,894	273,395	292,648	312,701	333,581
	Unit cost	11.35	11.35	11.35	11.35	11.35
	Total cost of FP service	2,847,646.9	3,103,033.25	3,321,554.8	3,549,156.35	3,786,144.35

Family Planning Service		Year				
		2012	2013	2014	2015	2016
	Direct cost (61.5)	1,751,302.84	1,908,365.45	2,042,756.20	2,182,731.16	2,328,478.78
	Indirect cost (38.5)	1,096,344.06	1,194,667.80	1,278,798.60	1,366,425.19	1,457,665.57
Combined Oral Contraceptive (COC)	Population	161,041	175,483	187,841	200,713	214,115
	Unit cost	14.93	14.93	14.93	14.93	14.93
	Total cost of FP service	2,404,342.13	2,619,961.19	2,804,466.13	2,996,645.09	3,196,736.95
	Direct cost (64.0)	1,538,778.96	1,676,775.16	1,794,858.32	1,917,852.86	2,045,911.65
	Indirect cost (36.0)	865,563.17	943,186.03	1,009,607.81	1,078,792.23	1,150,825.30
Combined Injectable Contraceptive (CIC)	Population	84,229	91,783	98,246	104,978	111,988
	Unit cost	45.89	45.89	45.89	45.89	45.89
	Total cost of FP service	3,865,268.81	4,211,921.87	4,508,508.94	4,817,440.42	5,139,129.32
	Direct cost (92.2)	3,563,777.84	3,883,391.96	4,156,845.24	4,441,680.07	4,738,277.23
	Indirect cost (7.8)	301,490.97	328,529.91	351,663.70	375,760.35	400,852.09
Progestin-Only Pills (POPs)	Population	30,067	32,763	35,071	37,474	39,976
	Unit cost	10.81	10.81	10.81	10.81	10.81
	Total cost of FP service	325,024.27	354,168.03	379,117.51	405,093.94	432,140.56
	Direct cost (68.9)	223,941.72	244,021.77	261,211.96	279,109.72	297,744.85
	Indirect cost (31.1)	101,082.55	110,146.26	117,905.55	125,984.22	134,395.71
Progestin-Only Injectable (POI)	Population	789,524	860,330	920,917	984,020	1,049,728
	Unit cost	25.40	25.40	25.40	25.40	25.40

Cost of Family Planning Services in Ghana

Family Planning Service		Year				
		2012	2013	2014	2015	2016
	Total cost of FP service	20,053,909.60	21,852,382	23,391,291.80	24,994,108	26,663,091.20
	Direct cost (77.0)	15,441,510.39	16,826,334.14	18,011,294.69	19,245,463.16	20,530,580.22
	Indirect cost (23.0)	4,612,399.21	5,026,047.86	5,379,997.11	5,748,644.84	6,132,510.98
Implants	Population	80,390	87,600	93,769	100,194	106,884
	Unit cost	35.06	35.06	35.06	35.06	35.06
	Total cost of FP service	2,818,473.40	3,071,256	3,287,541.14	3,512,801.64	3,747,353.04
	Direct cost (87.3)	2,460,527.28	2,681,206.49	2,870,023.42	3,066,675.83	3,271,439.20
	Indirect cost (12.7)	357,946.12	390,049.51	417,517.72	446,125.81	475,913.84
Intrauterine Devices (IUDs)	Population	17,969	19,580	20,959	22,396	23,891
	Unit cost	10.77	10.77	10.77	10.77	10.77
	Total cost of FP service	193,526.13	210,876.6	225,728.43	241,204.92	257,306.07
	Direct cost (69.3)	134,113.61	146,137.48	156,429.80	167,155.01	178,313.11
	Indirect cost (30.7)	59,412.52	64,739.12	69,298.63	74,049.91	78,992.96
Voluntary Surgical Contraception (tubal ligation)	Population	7,327	7,984	8,546	9,132	9,742
	Unit cost	29.00	29.00	29.00	29.00	29.00
	Total cost of FP service	212,483	231,536	247,834	264,828	282,518
	Direct cost (78.3)	166,374.19	181,292.69	194,054.02	207,360.32	221,211.59
	Indirect cost (21.7)	46,108.81	50,243.31	53,779.98	57,467.68	61,306.41
Voluntary Surgical	Population	995	1,084	1,161	1,240	1,323

Family Planning Service		Year				
		2012	2013	2014	2015	2016
Contraception (vasectomy)	Unit cost	25.76	25.76	25.76	25.76	25.76
	Total cost of FP service	25,631.20	27,923.84	29,907.36	31,942.40	34,080.48
	Direct cost (97.0)	24,862.26	27,086.12	29,010.14	30,984.13	33,058.07
	Indirect cost (3.0)	768.94	837.72	897.22	958.27	1,022.41
All FP Services	Total cost	34,021,632.19	37,455,149.36	40,480,136.02	43,634,330.54	46,922,214.96
	Direct cost	26,218,004.51	28,784,255.86	31,029,039.43	33,369,071.64	35,807,648.73
	Indirect cost	7,803,627.68	8,670,893.50	9,451,096.59	10,265,258.90	11,114,566.23

Note: In 2012, diaphragm/cervical cap and spermicide services were not provided by the sites/facilities visited for data collection.

(): Figures in parentheses are the percentage of total cost.

Table 5: Projected Direct Cost of Family Planning Services in Ghana, 2012–2016 (US\$)

Family Planning Service		Year				
		2012	2013	2014	2015	2016
Natural Family Planning (NFP) Method	Total direct cost	44,215.84	70,987.97	99,083.87	128,561.10	159,463.93
	Counselling (77.4)	34,223.06	54,944.69	76,690.91	99,506.29	123,425.08
	FP commodity (0.0)	0.0	0.0	0.0	0.0	0.0
	Laboratory (0.0)	0.0	0.0	0.0	0.0	0.0
	Medical consumables (0.0)	0.0	0.0	0.0	0.0	0.0

Cost of Family Planning Services in Ghana

Family Planning Service		Year				
		2012	2013	2014	2015	2016
	Other consumables (22.6)	9,992.78	16,043.28	22,392.95	29,054.81	36,038.85
Lactational Amenorrhoea Method (LAM)	Total direct cost	372,572.43	598,151.83	834,913.08	1,083,279.78	1,343,685.82
	Counselling (71.0)	264,526.43	424,687.80	592,788.29	769,128.64	954,016.93
	FP commodity (0.0)	0.0	0.0	0.0	0.0	0.0
	Laboratory (0.0)	0.0	0.0	0.0	0.0	0.0
	Medical consumables (0.0)	0.0	0.0	0.0	0.0	0.0
	Other consumables (29.0)	108,046.00	173,464.03	242,124.79	314,151.13	389,668.89
Female Condoms	Total direct cost	496,027.14	540,504.80	578,558.68	618,218.51	659,484.28
	Counselling (4.1)	20,337.11	22,160.70	23,720.91	25,346.96	27,038.86
	FP commodity (94.5)	468,745.65	510,777.03	546,737.95	584,216.49	623,212.64
	Laboratory (0.0)	0.0	0.0	0.0	0.0	0.0
	Medical consumables (0.0)	0.0	0.0	0.0	0.0	0.0
	Other consumables (1.4)	6,944.38	7,567.07	8,099.82	8,655.06	9,232.78
Male Condoms	Total direct cost	1,751,302.84	1,908,365.45	2,042,756.20	2,182,731.16	2,328,478.78
	Counselling (28.9)	506,126.52	551,517.61	590,356.54	630,809.30	672,930.37
	FP commodity (56.8)	994,740.02	1,083,951.57	1,160,285.52	1,239,791.30	1,322,575.94
	Laboratory (0.0)	0.0	0.0	0.0	0.0	0.0
	Medical consumables (0.0)	0.0	0.0	0.0	0.0	0.0
	Other consumables (14.3)	250,436.31	272,896.26	292,114.14	312,130.56	332,972.46

Family Planning Service		Year				
		2012	2013	2014	2015	2016
Combined Oral Contraceptive (COC)	Total direct cost	1,538,778.96	1,676,775.16	1,794,858.32	1,917,852.86	2,045,911.65
	Counselling (31.3)	481,637.82	524,830.63	561,790.66	600,287.94	640,370.35
	FP commodity (35.2)	541,650.20	590,224.86	631,790.13	675,084.21	720,160.90
	Laboratory (23.0)	353,919.16	385,658.29	412,817.41	441,106.16	470,559.68
	Medical consumables (0.0)	0.0	0.0	0.0	0.0	0.0
	Other consumables (10.5)	161,571.79	176,061.39	188,460.12	201,374.55	214,820.72
Combined Injectables Contraceptive (CIC)	Total direct cost	3,563,777.84	3,883,391.96	4,156,845.24	4,441,680.07	4,738,277.23
	Counselling (7.5)	267,283.34	291,254.40	311,763.39	333,126.01	355,370.79
	FP commodity (24.2)	862,434.24	939,780.86	1,005,956.55	1,074,886.58	1,146,663.09
	Laboratory (5.2)	185,316.45	201,936.38	216,155.95	230,967.36	246,390.42
	Medical consumables (60.7)	2,163,213.15	2,357,218.92	2,523,205.06	2,696,099.80	2,876,134.28
	Other consumables (2.4)	85,530.67	93,201.41	99,764.29	106,600.32	113,718.65
Progestin-Only Pills (POPs)	Total direct cost	223,941.72	244,021.77	261,211.96	279,109.72	297,744.85
	Counselling (38.3)	85,769.68	93,460.34	100,044.18	106,899.02	114,036.28
	FP commodity (48.3)	108,163.85	117,862.52	126,165.38	134,810.00	143,810.76
	Laboratory (0.0)	0.0	0.0	0.0	0.0	0.0
	Medical consumables (0.0)	0.0	0.0	0.0	0.0	0.0
	Other consumables (13.4)	30,008.19	32,698.92	35,002.40	37,400.70	39,897.81
Progestin-Only	Total direct cost	15,441,510.39	16,826,334.14	18,011,294.69	19,245,463.16	20,530,580.22

Cost of Family Planning Services in Ghana

Family Planning Service		Year				
		2012	2013	2014	2015	2016
Injectable (POI)	Counselling (15.7)	2,424,317.13	2,641,734.46	2,827,773.27	3,021,537.72	3,223,301.10
	FP commodity (16.0)	2,470,641.66	2,692,213.46	2,881,807.15	3,079,274.11	3,284,892.84
	Laboratory (11.3)	1,744,890.67	1,901,375.76	2,035,276.30	2,174,737.34	2,319,955.57
	Medical consumables (43.8)	6,763,381.55	7,369,934.35	7,888,947.07	8,429,512.86	8,992,394.14
	Other consumables (13.2)	2,038,279.37	2,221,076.11	2,377,490.90	2,540,401.14	2,710,036.59
Implants	Total direct cost	2,460,527.28	2,681,206.49	2,870,023.42	3,066,675.83	3,271,439.20
	Counselling (10.5)	258,355.36	281,526.68	301,352.46	322,000.96	343,501.12
	FP commodity (58.8)	1,446,790.04	1,576,549.41	1,687,573.77	1,803,205.39	1,923,606.25
	Laboratory (6.0)	147,631.64	160,872.39	172,201.40	184,000.55	196,286.35
	Medical consumables (21.4)	526,552.84	573,778.19	614,185.01	656,268.63	700,087.99
	Other consumables (3.3)	81,197.40	88,479.81	94,710.77	101,200.30	107,957.49
Intrauterine Devices (IUDs)	Total direct cost	134,113.61	146,137.48	156,429.80	167,155.01	178,313.11
	Counselling (47.2)	63,301.62	68,976.89	73,834.87	78,897.16	84,163.79
	FP commodity (7.2)	9,656.18	10,521.90	11,262.95	12,035.16	12,838.54
	Laboratory (30.8)	41,306.99	45,010.35	48,180.38	51,483.74	54,920.44
	Medical consumables (2.7)	3,621.07	3,945.71	4,223.60	4,513.19	4,814.45
	Other consumables (12.1)	16,227.75	17,682.64	18,928.01	20,225.76	21,575.89
Voluntary Surgical Contraception (tubal ligation)	Total direct cost	166,374.19	181,292.69	194,054.02	207,360.32	221,211.59
	Counselling (45.7)	76,033.00	82,850.76	88,682.69	94,763.67	101,093.70

Family Planning Service		Year				
		2012	2013	2014	2015	2016
	FP commodity (0.0)	0.0	0.0	0.0	0.0	0.0
	Laboratory (16.0)	26,619.87	29,006.83	31,048.64	33,177.65	35,393.86
	Medical consumables (33.9)	56,400.85	61,458.22	65,784.31	70,295.15	74,990.73
	Other consumables (4.4)	7,320.46	7,976.88	8,538.38	9,123.85	9,733.31
Voluntary Surgical Contraception (vasectomy)	Total direct cost	24,862.26	27,086.12	29,010.14	30,984.13	33,058.07
	Counselling (15.1)	3,754.20	4,090.00	4,380.53	4,678.60	4,991.77
	FP commodity (80.1)	19,914.67	21,695.99	23,237.12	24,818.29	26,479.51
	Laboratory (0.0)	0.0	0.0	0.0	0.0	0.0
	Medical consumables (0.8)	198.90	216.69	232.08	247.87	264.46
	Other consumables (4.0)	994.49	1,083.44	1,160.41	1,239.37	1,322.32
All FP Services	Total direct cost	26,218,004.51	28,784,255.86	31,029,039.43	33,369,071.64	35,807,648.73
	Counselling	4,485,665.28	5,042,034.95	5,553,178.69	6,086,982.28	6,644,240.11
	FP commodity	6,922,736.50	7,543,577.60	8,074,816.52	8,628,121.51	9,204,240.48
	Laboratory	2,499,684.78	2,723,859.99	2,915,680.09	3,115,472.80	3,323,506.30
	Medical consumables	9,513,368.36	10,366,552.09	11,096,577.14	11,856,937.50	12,648,686.06
	Other consumables	2,796,549.60	3,108,231.23	3,388,786.98	3,681,557.55	3,986,975.77

Note: In 2012, diaphragm/cervical cap and spermicide services were not provided by the sites/facilities visited for data collection.

(): Figures in parentheses are the percentage of total direct cost

CONCLUSION

This study aimed to provide key stakeholders—particularly the government of Ghana, the NPC, and the NHIA—with information on the yearly cost of providing FP services to a client. This study is one of the first attempts to conduct a comprehensive analysis of the provision of FP services in Ghana and will hopefully inform national planning, budgeting, and programme efforts.

In estimating the costs of providing FP services in Ghana as stated in the National Family Planning Protocols of 2007, the study focused on full-cost service provision to one client/person for one year. Using a combination of data from 19 sites/facilities and information on normative use of resources, the study team was able to estimate the cost per client per year for various FP services.

Understanding the composition and unit cost of the different FP services is important given the decision to cover FP services under the National Health Insurance Scheme. Expansion of the client base under the NHIS will likely bring down the unit cost, especially if most of the scale-up occurs at lower-level health facilities such as polyclinics and health centres. The study reveals that long-term FP services such as IUDs are the most efficient, while short-term services like use of condoms, injectables, and pills are less efficient and expensive in the long-term.

The results from the costing exercise indicate that the average unit costs of FP services provided through the public, private, and NGO sectors throughout the country range from a high of US\$75.16 (GH¢135.29) through female condoms to a low of US\$6.25 (GH¢11.25) through LAM in 2012. The projected cost of providing all FP services shows that it will increase from US\$82,919,301 in 2014 to US\$90,610,045 in 2016: a 9.27 percent change. The cost of FP commodities is expected to increase from US\$8,074,816 in 2014 to US\$9,204,240 in 2016, or 13.99 percent. The major cost component of the total cost of FP services is the direct cost, which comprises FP commodities, medical consumables, other consumables, and laboratory services.

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APPENDIX 1: DETAILS OF HOW THE COSTS WERE ESTIMATED

For each type of input, the table describes the methods and sources for estimating quantities of the input, prices, and unit cost (per client per year). The inputs are grouped into (i) direct cost and (ii) indirect cost.

Direct Cost	
Staff time for providing FP services—counselling and clinic visits	
<p><u>Quantities</u> Average number of minutes each health worker directly provides to the client, by type of visit for each FP service</p>	Interviews with facility/site staff
<p><u>Prices</u> Calculated per minute of salary for selected categories of staff based on 2012 Ghana Health Service central-level data on compensation/salary</p>	<p>Ghana Health Service 2012 salary structure</p> <p>Interviews with facility/site staff</p>
<p><u>Unit Cost</u> For staff compensation: Average total number of minutes per worker multiplied by cost per minute, summed across type of worker by different FP services</p>	
Family planning commodities	
<p><u>Quantity</u> Quantity required for one person for one year based on national protocol</p>	National Family Planning Protocol of 2007 and Family Health Unit, Ghana Health Service
<p><u>Prices</u> International rate, prices to port</p>	Central-level information on import prices of FP commodities
<p><u>Unit Cost</u> Quantity needed for one year multiplied by price for each FP commodity</p>	
Medical consumables and other consumables	
<p><u>Quantity</u> Average quantity used per visit by type of visit for each FP service</p>	Facility staff interviews
<p><u>Prices</u> Price of item used for each FP service</p>	Based on international prices and local market prices
<p><u>Unit Cost</u> Price per item multiplied by average quantity of items used in each FP service visit</p>	
Laboratory Testing	
<p><u>Quantity</u> For each test, quantity needed for one patient for one year</p>	Interviews with facility staff

Appendix 1: Details of How the Costs were Estimated

<u>Prices</u> Cost per laboratory test	NHIS diagnostic tariffs
<u>Unit Cost</u> For each test, price per test multiplied average number of tests per client and percentage of clients getting the test	
Indirect Costs	
Other administrative staff time (including volunteers' time)	
<u>Quantity</u> Number of administrative staff and percentage of time spent on family planning in a year	Interviews with facility/site staff
<u>Prices</u> Calculated per minute of salary for selected categories of staff based on 2012 Ghana Health Service central-level data on compensation/salary	Ghana Health Service 2012 salary structure Interview with facility/site staff
<u>Unit Cost</u> Yearly administrative personnel cost divided by yearly number of FP clients served by facility, multiplied by the ratio of clients for each FP service in yearly number of FP clients	
Office equipment	
<u>Quantity</u> Number and type of equipment used for administration of FP services	Facility inventory record from questionnaire
<u>Prices</u> Replacement cost of item, straight-line depreciation by useful life	Estimate based on local prices Useful life for each equipment type provided by facility
<u>Unit Cost</u> Yearly depreciated replacement cost multiplied by use in family planning as a percentage of total use in facility divided by yearly number of FP clients served by the facility and multiplied by the ratio of clients for each FP service in yearly number of FP clients	
Medical equipment	
<u>Quantity</u> Number and type of equipment used in FP services	Interviews with facility staff
<u>Prices</u> Replacement cost of item, straight-line depreciation by useful life	Estimate based on international and local prices

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<u>Unit Cost</u> Yearly depreciated replacement cost multiplied by use in family planning as percentage of total use in facility divided by yearly number of FP clients served by facility and multiplied by the ratio of clients for each FP service in yearly number of FP clients	
Vehicles used for programme administration	
No vehicle was used in the provision of FP services	
Transportation costs for administration	
<u>Quantity</u> None	
<u>Prices</u> Annual transportation cost for FP services	Interviews with facility staff, review of facility records
<u>Unit Cost</u> Total yearly transportation cost for FP services multiplied by ratio of clients for each FP service in yearly number of FP clients	
Public utilities (water, electricity, and telephone)	
<u>Quantity</u> None	
<u>Prices</u> Annual costs for facility as a whole	Interviews with facility staff, review of facility records
<u>Unit Cost</u> Total yearly cost multiplied by FP programme as a proportion of all outpatient visits to the facility multiplied by outpatient visits as a proportion of all facility services divided by the yearly number of FP service clients served by the facility	
Maintenance and repair	
<u>Quantity</u> None	
<u>Prices</u> Annual costs for the facility as a whole	Interviews with facility staff, review of facility records
<u>Unit Cost</u> Total yearly cost multiplied by FP programme as a proportion of all outpatient visits to the facility multiplied by outpatient visits as a proportion of all facility services divided by the yearly number of FP clients served by facility	

APPENDIX 2: QUESTIONNAIRE—ESTIMATING THE UNIT COST OF DELIVERING FAMILY PLANNING SERVICES

Costs per Facility: Hospital

	KOMFO ANOKYE-KUMASI		RIDGE HOSPITAL		TAMALE CENTRAL HOSPITAL		MANNA MISSION HOSPITAL		SAVELUGU HOSPITAL		AVERAGE
	Amount	Assumptions	Amount	Assumptions	Amount	Assumptions	Amount	Assumptions	Amount	Assumptions	
INDIRECT COSTS PER FACILITY											
Vehicles Used for FP Services (including Administration)											
Other Equipment											
Physical Infrastructure											
Personnel	7004.48		4867.29		2688.22		984.67		1679.01		3444.73
Office Equipment											
Administrative Physical Infrastructure											
Other Administrative Costs											
Volunteer Costs											
Monetary Incentive	250.00										250.00
Local Medical Supply Cost	75.00						327288				
Local Travel and Transport Costs											
Public Utilities											
Buildings Cost											
Maintenance and Repair											

Cost of Family Planning Services in Ghana

	7,329		4,867									6098.39
INDIRECT COSTS FROM CENTRAL LEVEL												
Training												
Supervision												

Costs per Facility: Health Centres and Community Health Practitioners

	APPOLONIA CHPS		BUIPE HEALTH CENTRE		KARAGA CH		MAMPONTENG HEALTH CENTRE		OBENEMASE CHPS		YAMFO HEALTH CENTRE		AVERAGE
	Amount	Assumption	Amount	Assumption	Amount	Assumption	Amount	Assumption	Amount	Assumption	Amount	Assumption	
INDIRECT COSTS PER FACILITY													
Vehicles Used for FP Services (including Administration)													
Other Equipment													
Physical Infrastructure					1846.20								1846.20
Personnel	368.37		529.33				4705.70		1155.05		3400.38		2031.77
Office Equipment													
Administrative Physical Infrastructure													
Other Administrative Costs													
Volunteer Costs							120.00						120.00
Monetary Incentive													
Local Medical Supply Cost	56.15												56.15
Local Travel and Transport Costs													
Public Utilities													
Buildings Cost													

Appendix 2: Questionnaire—Estimating the Unit Cost of Delivering Family Planning Services

Maintenance and Repair													
	425	425	529										
INDIRECT COSTS FROM CENTRAL LEVEL													
Training													
Supervision													

Costs per Facility: Health Centres and Community Health Practitioners

	PPAG ACCRA		PPAG SUNYAN		PPAG TECHIMAN		PPAG KPARIGU_NR		AVERAGE
	Amount	Assumptions	Amount	Assumption	Amount	Assumption	Amount	Assumption	
INDIRECT COSTS PER FACILITY									
Vehicles Used for FP Services (including Administration)									
Other Equipment									
Physical Infrastructure									
Personnel	3074.88		1144.52		1291.68		560.38		1517.86
Office Equipment									
Administrative Physical Infrastructure									
Other Administrative Costs									
Volunteer Costs									
Monetary Incentive			520.00						520.00
Local Medical Supply Cost									
Local Travel and Transport Costs									
Public Utilities									

Cost of Family Planning Services in Ghana

Buildings Cost									
Maintenance and Repair									
	3,075		1,665						2369.70
INDIRECT COSTS FROM CENTRAL LEVEL									
Training									
Supervision									

Costs per Facility: Polyclinics

	JANGA POLY CLINIC		MADINA POLYCLINIC		AVERAGE
	Amount	Assumptions	Amount	Assumptions	
INDIRECT COSTS PER FACILITY					
Vehicles Used for FP Services (including Administration)					
Other Equipment					
Physical Infrastructure					
Personnel	703.67		1936.14		1319.91
Office Equipment					
Administrative Physical Infrastructure					
Other Administrative Costs					
Volunteer Costs					
Monetary Incentive					
Local Medical Supply Cost					
Local Travel and Transport Costs					
Public Utilities					
Buildings Cost					
Maintenance and Repair					
INDIRECT COSTS FROM CENTRAL LEVEL					
Training					
Supervision					

Costs per Facility: Maternity Home

	ADJEI MENSAH MATERNITY GOASO		MONICA'S MATERNITY HOME-SUNYANI		AVERAGE
	Amount	Assumptions	Amount	Assumption	
INDIRECT COSTS PER FACILITY					
Vehicles Used for FP Services (including Administration)					
Other Equipment					
Physical Infrastructure					
Personnel	538.72		318.72		428.72
Office Equipment					
Administrative Physical Infrastructure					
Other Administrative Costs					
Volunteer Costs					
Monetary Incentive					
Local Medical Supply Cost	4500.00		46595.00		25547.50
Local Travel and Transport Costs					
Public Utilities					
Buildings Cost					
Maintenance and Repair					
	5,039		46,914		25976.22
INDIRECT COSTS FROM CENTRAL LEVEL					
Training					
Supervision					

For more information, contact:

Health Policy Project

Futures Group

1331 Pennsylvania Ave NW, Suite 600

Washington, DC 20004

Tel: (202) 775-9680

Fax: (202) 775-9694

Email: policyinfo@futuresgroup.com

www.healthpolicyproject.com