

Assessing Facility Readiness of Family Planning Services in Ghana

By

Stephanie Hess

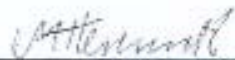
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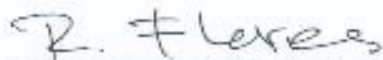
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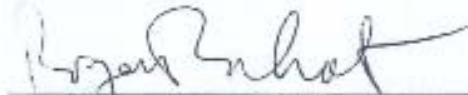
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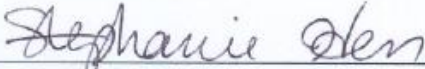


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Abstract

The purpose of this study was to assess the readiness of health facilities in Ghana to provide short-term family planning (FP) methods (i.e. oral contraceptives, male condoms and injectables). Facility readiness was assessed four indicators: staffing, infrastructure, family planning supplies, and equipment.

This study involved an analysis of secondary data from two datasets. A total of 136 health facilities in Ghana were assessed. The presence or absence of a midwife was used to assess staffing levels and benchmarks were set to assess equipment and infrastructure. To assess the adequacy of supplies, existing guidelines from the Centers for Disease Control and Prevention (CDC) were used. Chi-square tests were conducted to determine if associations existed between patient caseload and the indicators for readiness.

Overall findings indicated that 29% of facilities had the minimum requirements for all indicators, staff, infrastructure, supplies and equipment, to provide short-term methods of family planning. Of these 39 facilities, 14 (36%) were government hospitals, one (3%) was a mission hospital, and 24 (61%) were government health centers.

There is an association between having the minimum equipment for FP and caseload ($p=0.04$). There was no association between the level of caseload in a facility and the likelihood of meeting the criteria for minimum infrastructure ($p=0.74$), or having adequate supplies for FP ($p=0.11$).

Needs assessments should be conducted and plans for procurement should be developed for facilities that did not meet the criteria for facility readiness. These facilities should be targeted by the Ministry of Health and NGOs in future interventions to provide the support necessary to ultimately improve the quality of family planning service delivery in Ghana.

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List of Acronyms

DHS	Demographic and Health Survey
FBA	Facility Baseline Assessment
FP	Family Planning
GHS	Ghana Health Service
GSPA	Ghana Service Provision Assessment
GSS	Ghana Statistical Service
HR	Human Resources
HRHD	Human Resources Health Division
LAPM	Long-Acting and Permanent Methods
MoH	Ministry of Health
RCHEA	Reproductive and Child Health Equipment Assessment
RH	Reproductive Health
QHP	Quality Health Partners
USAID	United States Agency for International Development

Chapter 1: INTRODUCTION

Introduction

The purpose of this study is to assess the readiness of health facilities in Ghana to provide short-term family planning (FP) methods (i.e. oral contraceptives, male condoms and injectables). In order to determine how well prepared facilities are to provide this specific type of family planning service, four main indicators of staffing, facility infrastructure, availability of family planning equipment and FP supplies are used in the assessment. Data used in the analysis have been collected from Ghanaian hospitals and health centers by Quality Health Partners¹(QHP), a bi-lateral assistance project dedicated to advancing the quality of healthcare in Ghana. QHP is a five-year project funded by the United States Agency for International Development (USAID) and managed by EngenderHealth whose mission is improving the quality of health services in 30 of Ghana's most deprived districts in order to ultimately advance the health status of all Ghanaians. Specifically, QHP focuses on the improvement of reproductive and child health services in Ghana.

Rationale

Evaluations and inventories of health facilities all over the world are essential to assess the quality of the service provision and to identify areas where improvement is needed. In particular, family planning is the component of reproductive health services that will be focused on in this study, but it is important to note that reproductive health services encompass maternal and child health, antenatal care, postnatal care, delivery, and sexually transmitted infection (STI) services. As defined by the 2002 Ghana Service Provision Assessment, family planning services are:

¹ QHP Website: www.ghanaqhp.org

“designed to assist couples and individuals in their reproductive ages to space or limit the number of births, prevent unwanted pregnancies, manage infertility, and improve reproductive health. Services provided at delivery points include the provision of short-term methods (condoms, spermicides, oral contraceptives, and natural family planning methods), reversible long-term methods (IUDs, injectables, and implants), and permanent long-term methods (minilap tubal ligation, and vasectomy).”
(Ghana Statistical Service. Health Research Unit, Ministry of Health, & ORC Macro, 2003)

In order to provide quality family planning services, facilities must have suitable infrastructure (i.e. on-site water, electricity), and the necessary equipment and staff to provide counseling. A variety of contraceptive methods must also be in adequate supply. The amount of supplies needed depend on the number of FP clients seeking services at the facility.

In Ghana, one of the issues affecting quality service provision is the outdated national staffing guidelines for the health sector. These guidelines would provide a standard for human resource managers and administrators to achieve adequate staffing at health facilities and enable evaluation of staffing against agreed benchmarks. Due to the outdated nature of these guidelines, there may not be enough doctors hired or assigned to work in a district hospital, while in some larger cities, there may be an overabundance of doctors working in a hospital. This study assesses the current staffing situation in Ghanaian health facilities and determines the levels of staffing within health facilities providing family planning services in Ghana.

In addition to these human resource issues, there may not be enough equipment or supplies available in health clinics and hospitals to provide quality family planning services. Specific equipment, such as spotlights and examining tables, and supplies (i.e. oral contraceptive pills and condoms) are essential in providing quality reproductive health services. Without these items, patients are not receiving the best possible care. This analysis

will assess the types and availability of equipment at each health facility, in addition to determining the overall readiness of each facility to provide short-term family planning services.

Results of the analyses will be shared with the Ghana Health Service (GHS) and Quality Health Partners (QHP). These results will provide evidence to inform the creation of formal staffing guidelines by GHS and the Ministry of Health, in addition to playing a role in achieving the QHP mission towards improving reproductive and child health services. It is expected that these results will contribute to the efforts that are currently being taken to provide the best possible healthcare for all people in Ghana.

Specific Aims

The overall aim for this study is to assess the readiness of public sector health facilities in 30 deprived districts in the seven southern regions of Ghana to provide short-term methods of family planning in regional and district hospitals, and health centers in Ghana using selected indicators. In order to achieve this aim, an additional aim for each of the four indicators is listed below.

1. To assess the presence of midwives in regional and district hospitals, and health centers that provide short-term family planning services in Ghana.
2. To assess the type and availability of equipment needed to provide short-term FP methods in regional and district hospitals, and health centers in Ghana.
3. To assess the type and availability of family planning supplies needed to provide short-term FP methods in regional and district hospitals, and health centers in Ghana.
4. To assess the infrastructure needed to provide short-term FP methods in regional and district hospitals, and health centers in Ghana.

Chapter 2: BACKGROUND & LITERATURE REVIEW

Part I. Background

Geography

Ghana is located in West Africa and is bordered by Cote d'Ivoire to the west, Togo to the east, Burkina Faso to the north and the Gulf of Guinea to the south (Figure 2.1).

Originally colonized by the British, Ghana gained its independence in 1957 (CIA, 2007) and recently celebrated 50 years of independence. With a population of 22.4 million people, Ghana is the second most populous country in Western Africa, following Nigeria (Population Reference Bureau, 2006). The residents of Ghana live among 10 geographic regions including the Ashanti, Brong Ahafo, Central, Eastern, Greater Accra, Northern, Upper East, Upper West, Volta and Western regions (Figure 2.2).

Figure 2.1. Map of Ghana



Figure 2.2. Geographic Regions of Ghana



Figure 2.1. Source: <http://atlas.freegk.com/world/africa/ghana/ghana.php> Date Accessed: 2 Feb 2007

Figure 2.2. Source: http://commons.wikimedia.org/wiki/Image:Ghana_regions.png Date Accessed: 2 Feb 2007

Of these 10 regions, the most densely populated is the Greater Accra region which has 897 people per square kilometer (km). This region is also where the country's capital of

Accra is located. The least densely populated is the Northern region with 26 people per square km. Overall, across all regions, Ghana has a population density of 77 people per square kilometer (Ministry of Health Government of the Republic of Ghana, 2001). Table 2.1 shows the estimated population and population density in each of the ten regions. Population density data is presented from 2001 since this was the latest information available. These data represent an important factor in health service provision because of the impact population and population density have on the distribution of health care workers in rural and urban areas. These factors also play a major part in influencing the location and number of facilities needed to adequately serve the surrounding populations in each region.

Table 2.1. Population in Ghana by Region

Region	Estimated Population¹ (2006)	Population Density² (2001)
Ashanti	3,924,925	131
Greater Accra	3,576,312	897
Eastern	2,274,453	109
Western	2,042,753	77
Brong Ahafo	1,968,205	46
Northern	1,760,417	26
Central	1,687,311	161
Volta	1,636,462	78
Upper East	963,448	104
Upper West	561,866	31
Total	20,426,152	77

¹Recreated from Ministry of Health and Government of the Republic of Ghana (2006:18). The total population estimate does not match the population cited by PRB 2006 due to differences in data collection and varying sources of data.

²Recreated from Ministry of Health Government of the Republic of Ghana (2001:57).

Reproductive Health in Ghana

Since Ghana's independence, there has been a decrease in the total fertility rate from 6.4 in 1988 to 4.4 children per woman in 2000. Another notable downward trend is the decrease in infant mortality from 77 in 1998 to 64 per 1000 live births in 2003. Perhaps one

of the most substantial changes has been the decrease in under-five mortality rates from 155 in 1998 to 111 per 1000 live births in 2003 (Ghana Statistical Service, Noguchi Memorial Institute for Medical Research, & ORC Macro, 2004).

Knowledge of modern contraceptive methods is high, with 97.7% of all women having knowledge of at least one method. There has also been an increase in the use of family planning methods, from 12.9% in 1988 to 25.3% in 2003, however, it is important to note that the current unmet need for contraception for all married women is 34% (Ghana Statistical Service et al., 2004).

Long-acting and permanent method (LAPM) use is very low in Ghana. The 2003 DHS shows that current use of female sterilization is 1.3% among all women, use of the IUD is 0.6%, and implants are 0.7% in this group (Ghana Statistical Service et al., 2004). Male sterilization is virtually non-existent, as the 2003 DHS reports 0% of all men ever having undergone sterilization. In 2003, the Ghana Health Service and EngenderHealth began an initiative to introduce and expand vasectomy services in two urban areas of Ghana in hopes of increasing the prevalence of vasectomy (USAID & The ACQUIRE Project, 2005).

The highest usage rates for all women according the 2003 DHS are for the pill (4.1%), injectable (3.7%) and male condom (4.3%). Among the lowest usage rates were the diaphragm (0.0%), spermicidal foam/jelly (0.2%) and female condom (0.2%) (Ghana Statistical Service et al., 2004). The 2002 Ghana Service Provision Assessment confirmed the Demographic and Health Survey data and reports that the methods that were most commonly reported as offered were the injectable, combined oral pill and the male condom (Ghana Statistical Service. Health Research Unit et al., 2003).

National Population Policy

In 1969, twelve years after Ghana received its independence, the government instituted a national population policy. Initially, the reason for the policy was to improve the quality of life for all Ghanaians through the promotion of economic growth and the management of population growth (Harvard University, 1994). The policy was revised in

Table 2.2. Excerpts from Revised Population Policy of 1994

- | |
|---|
| <p>4.4.1 To reduce the total fertility rate (i.e., the number of children a woman is likely to have during her reproductive years) from 5.5 to 5.0 by the year 2000, 4.0 by 2010 and 3.0 by 2020. The policy will accordingly aim at achieving a Contraceptive Prevalence Rate (CPR) of 15 per cent for modern methods by the year 2000, 28 per cent by 2010 and 50 per cent by 2020.</p> <p>4.4.4 To reduce the proportion of women below 20 years and above 34 years having births to 50 per cent by the year 2010 and to 80 per cent by 2020.</p> <p>4.4.12 To make family planning services available, accessible and affordable to at least half of all adults by the year 2020.</p> |
|---|

Source: <http://annualreview.law.harvard.edu/population/policies/GHANA.htm> Date Accessed: 10 Feb 2007

1994 since the 1969 policy did not have the desired impact on the population growth rate.

The initial goal set by the government was to decrease the population growth rate from 3% in 1969 to 1.7% in 2000. As of 1993, the rate was still near 3% and thus failed to demonstrate the desired decrease in growth. Please refer to Table 2.2 for excerpts from the revised 1994 National Population Policy that are specific to family planning (Harvard University, 1994).

Overview of the Health System

The health system in Ghana is divided into the public and private sectors, along with traditional and alternative providers of medicine. The main providers of health services in the public sector are the Ghana Health Service (GHS), teaching hospitals and quasi-governmental institutions. Private sector health facilities include mission, private for profit, civil society and non-governmental organizations. In Ghana, the private sector provides

approximately 35% of all health services which are mostly curative in nature (Ghana Statistical Service. Health Research Unit et al., 2003). Another important group of health care service providers are traditional healers and alternative medicine providers or faith healers, but this group will not be focused upon for the purposes of this study.

The reproductive health services provided by regional and district hospitals include obstetric and gynecological clinical services, and basic family planning services which include tubal ligation and occasionally vasectomy. Many district hospitals are Catholic, therefore influencing the extent of family planning service provision, although the GHS normally provides family planning services in Reproductive and Child Health Units near Catholic mission facilities. District hospitals usually serve anywhere between 100,000 and 200,000 people living in the area, while regional hospitals serve up to 1.2 million. Health centers are usually led by medical assistants and serve around 20,000 people (Ministry of Health Government of the Republic of Ghana, 2001).

The Ministry of Health Five-Year Program of Work (2002-2006)

The role of Ghana's Ministry of Health (MoH) is to formulate national policy and its agencies (such as the GHS) are responsible in implementing the policies. However, there are issues regarding the duplication of activities between MoH and GHS. Ideally, the purpose of the MoH is to advise the Minister of Health on policy development while one of the responsibilities of GHS is to assess how these policies will affect existing costs and productivity.

The Ghana MoH developed a program of work for 2002-2006 and among the five main performance criteria that are addressed in the document, improving the quality and

efficiency of health service delivery are listed as priorities (Ministry of Health Government of the Republic of Ghana, 2001). The MoH acknowledges improving health worker performance and improving the management and administration of health facilities as major areas of intervention. Overall, the government document focuses on the de-centralization of the health system along with building capacity within the health facilities across the country.

The MoH recognizes the importance of increasing the use of modern family planning methods and developing a key strategic plan for human resources which involves the redistribution of staff. One target of this latter activity was set to fill 70% of nurse, medical assistant and doctor posts by 2006. The justification for filling these posts was that high levels of staff attrition are thought to play a role in weakening the structure and capacity of health systems. The plan also addresses the issue of equipment in health facilities with the goal of establishing standardized criteria for basic equipment. An objective was defined to develop a national equipment policy based on international standards to address the shortage of equipment.

Currently there is not enough financial capacity to procure supplies on a regular basis. The MoH proposed several objectives to address the challenge of adequate procurement which include decentralizing the procurement process to MoH agencies and incorporating the existing procurement policy with the national agenda.

Review of Program of Work

The Ministry of Health wrote a review of the 2002-2006 five-year program of work and among the findings was a slight rise in outpatient department (OPD) visits per capita since the start of the program from 0.49 in 2001 to 0.52 in 2005. The target set for 2005 was

0.6, which was not reached (Ministry of Health & Government of the Republic of Ghana, 2006).

According to the MoH, there are currently 43,000 people in Ghana's health sector workforce, 41,000 of whom are employed by the public sector. Of the 41,000 health workers in the public sector, 1,968 (4.8%) are medical doctors and 14,227 (34.7%) are nurses or midwives. These numbers fluctuate in part due to staff attrition, otherwise known as staff turnover, which is a significant problem and one that has been tracked by the MoH Human Resource Health Division (HRHD) since 1993. As of 2004, staff attrition has been highest among nurses, with a total loss of 2,512 nurses, but the trend has also been increasing among doctors with a total loss of 892 doctors in 2004 (Ministry of Health & Government of the Republic of Ghana, 2006). Staff attrition may be due to several reasons, including staff seeking higher salaries and seeking work abroad or leaving the profession altogether. An important caveat here is that interpreting data representing national averages of staff is not always accurate in assessing the current state of human resources because it does not present the variations in staff distribution by region and within districts. The patterns usually represent an inequitable distribution across more impoverished regions with lower population density. Among the recommendations MoH provides regarding human resource policy, the government suggests scaling up the training of more enrolled nurses and medical assistants but it does not mention development of national staffing guidelines. One measure to address staff attrition undertaken by the MoH in 2006 was to substantially increase health worker wages. While this has had other effects, such as lower levels of funding for training, equipment procurement and general operations, health workers are now paid a living wage. This move may help to stem further attrition in the health sector.

An overall decline has been detected in doctor to population ratios and nurse to population ratios which have been monitored since 2001. The doctor to population ratio in 2001 was 1:20,036 and decreased to 1:17,929 in 2005 while the nurse to population ratio declined from 1:1,728 in 2001 to 1:1,508 in 2005. This trend is promising, but far from the desired targets for 2010 which have been set by the MoH at 1 doctor to 5,000 individuals and 1 nurse to 1,000 individuals (Ministry of Health & Government of the Republic of Ghana, 2006). Factors influencing the change in these ratios are staff retention and the high proportion of doctors trained in Ghana.

Looking at reproductive health services since 2001, the MoH acknowledges a lack of funding and low levels of utilization of maternal health services (Ministry of Health Government of the Republic of Ghana, 2001). MoH also addresses the shortage of basic equipment such as blood pressure gauges, stethoscopes and thermometers and concludes that the only way to level out the distribution of resources between health facilities across all regions would be to strive towards a more equitable distribution of staffing and locations of health facilities by continuing to re-distribute health personnel. However, the MoH document does not clearly state how to do this aside from providing the example of using pay reforms as incentives.

Major barriers to addressing these human resource challenges include cost, lack of motivation from health staff and existing centralized management of human resources. These factors contribute to poor accountability, increased overall costs, and a weak HR information system, all of which hinder the goal of improving health outcomes and achieving high-quality service provision.

In the conclusion of the review of the 2002-2006 program of work, MoH declares that they will continue to strive towards the adequate procurement and retention of staff which will ultimately improve health worker productivity and service delivery. The MoH has stated a commitment to working to solve these problems.

Part II. Literature Review

Evaluations of Family Planning Service Provision in Ghana

Ghana Service Provision Assessment (GSPA)

In the 2002 Ghana Service Provision Assessment (GSPA) (Ghana Statistical Service, Health Research Unit et al., 2003), a sample of governmental and non-governmental facilities were taken and assessed for three main purposes. These purposes included assessing facility preparedness to provide quality reproductive health services, identifying gaps in client support services and comparing the differences between facilities operated by different authorities. The sample consisted of a total of 428 health facilities drawing from 1,444 facilities in the sampling frame. Out of the 428 in the sample, 383 facilities offered family planning (FP) services. The sample included health facilities from both the public and private sector, with the majority of family planning service delivery being provided in the public sector under the supervision of the Ghana Health Service's (GHS) Reproductive and Child Health Unit.

Table 2.3 depicts some of the key quality indicators collated from the 2002 GSPA assessment. These indicators served as a guide to select the actual indicators used in this study.

Table 2.3. Sample Quality Indicators Used In Assessment of Reproductive Health Services

Staff

- At least one qualified staff (medical doctor, medical assistant, public health nurse, professional midwife, or a professional nurse) assigned to the facility
- Trained staff

Infrastructure

- Waiting area that protects clients from sun and rain
- Functioning client latrine
- Basic level of cleanliness
- Electricity available 24 hours per day
- Onsite water source available year-round
- Existence of systems for maintenance and repair of major and minor equipment
- Auditory and visual client privacy for counseling, screening, and exams

Specific Indicators for Family Planning

Systems/Services:

- Services to provide temporary methods of family planning at least 1 day per week
- Storage and management systems for contraceptive methods

Supplies:

- Availability of contraceptive methods
- Individual client health cards or records

Equipment:

- Visual aids for client education
- Equipment for client examinations (bed, spotlight, speculum)
- Written guidelines and protocols
- Infection prevention supplies (water, soap, clean or sterile latex gloves, disinfecting solution, sharps box)
- Blood pressure gauge and weighing scale for clients being assessed and followed up for estrogen-based contraceptives
- Equipment for IUD insertion and removal and Implant kits

With regard to family planning services, the GSPA found that 89% of the facilities offer temporary methods of contraception, while only 9% of facilities surveyed offer permanent methods of contraception (male and female sterilization). When stratifying by type of operating authority, it was found that less than 30% of private religious facilities offered at least four modern temporary methods of contraception. Regular provision of family planning is important so clients can rely on being able to receive services that will

fully meet their needs. The GSPA also found that of the facilities offering FP services, 95% offered these services five or more days per week.

In the assessment of infrastructure in health facilities providing family planning services, 79% of facilities provided visual and auditory privacy for counseling of FP and 92% had visual aids for client education. Out of the factors considered necessary to conduct a quality pelvic examination (visual and auditory privacy, examination bed, examination light, vaginal speculum) only 15% of facilities had all of these items. Looking at each item individually, the least available were the examination lights, with only 22% facilities reporting availability. Two-thirds of the facilities offering the IUD and the implant reported having the necessary equipment to offer these contraceptive methods.

One of the components of the GSPA assessment was observations of family planning counseling sessions. From these observations, the most commonly prescribed contraceptive method was the progesterone injectable (71%) and the least popular was the female condom at one percent.

Quality Health Partners Human Resource Management Systems Report

An assessment of human resource management systems in the Ghana Health Service and Ghana's Ministry of Health was completed in May 2005 by Quality Health Partners. One conclusion was "communication of HR [human resource] policies and guidelines to personnel is insufficient," (Quality Health Partners, Ministry of Health, & Ghana Health Service, 2005:10). Key documents regarding conditions of service for GHS staff and other service-related documents have been in draft form since 2000. These draft documents need to be finalized and the policy documents that do exist need to be circulated more widely to ensure equitable distribution of staff and improve service delivery.

Systems for collecting data on staff attrition and retention are essential in monitoring staff and identifying capacity gaps. Six regions in Ghana have data available on staff retention, but four regions do not have this data available. Four of nine regional directors report having a system to monitor staff attrition and assert that retention strategies exist in their areas (Quality Health Partners, Ministry of Health, & Ghana Health Service, 2005). These findings indicate the need to develop and strengthen HR systems and implement procedures for analyzing the data in the facilities that have data available.

Quality Health Partners Facility Baseline Assessment Report

A report on the facility baseline assessment data by Quality Health Partners has been published online, however, to date no analyses have been conducted specific to staffing levels for reproductive health services or associations between staffing levels and levels of equipment. A total of 171 facilities were sampled in the ten regions. This sample consisted of all regional hospitals and all Ghana Health Service (GHS) facilities in 30 target districts in Ghana. One of the objectives of the assessment was to “gather data related to the readiness of facilities to provide quality RCH services,” (Quality Health Partners & Ghana Health Service, 2005:10).

Among the main findings of the report as it pertains to family planning services include the availability of temporary contraceptive methods in 86.5% facilities. Regarding permanent methods of contraception, tubal ligation is offered in 72% of hospitals while vasectomy services are only offered in 17% of hospitals. The most commonly reported method that had a stock-out in the last six months from the time of data collection was spermicide supplies.

The facility baseline assessment also assessed infrastructure and resources in family planning. Sixty-two percent of facilities had protocols or guidelines for family planning and 86% of facilities had visual aids for client education. Using the SPA definition of readiness to perform a quality pelvic examination (functioning spotlight, table and stool for gynecological examination, and visual and auditory privacy), 24% of facilities met all of these conditions. Out of the types of health facilities who met these conditions, the smallest proportion was health centers (14%). Items considered necessary for proper infection prevention were water, soap, clean gloves, sharps container, and decontamination solution for clinical equipment. Less than half of the facilities (44%) had all of these items.

Final recommendations for family planning include encouraging health workers to educate clients further on various methods of family planning, with particular emphasis on vasectomy, IUD and Norplant. QHP recommended that more health professionals should be trained to provide these specific types of services and more staff should have access to guidelines and protocols for family planning.

Human Resources

There is a paucity of literature on human resource staffing guidelines in many sub-Saharan African countries although the issue of inadequate human resources in health systems has been acknowledged (Narasimhan et al., 2004; Palmer, 2006). Narasimhan et al. (2004) recommends increasing awareness of the human resource issue throughout the world through collecting and disseminating statistical evidence to policy makers. This will facilitate the formulation of evidence-based policies that address the human resource crisis.

The authors also state that due to limitations on finances, planning of the health care workforce by ministries of health has failed to meet the needs of the population.

Together, USAID and AED (Agency for Educational Development) wrote an issues paper on the human resource crisis in Africa (USAID, Bureau for Africa, & Office of Sustainable Development, 2003). This paper addresses many reasons for the state of the crisis, including lack of motivation among current health workers due to low pay, poor supervision and management, and inadequate resources to perform the required duties. The number of trained health workers has also been historically low, and this dilemma has been exacerbated by epidemics of HIV and other diseases which are increasing the need for more health workers. This paper also identifies several starting points that should be used as a guide for governments and donors to help address the HR crisis. The relevance of training programs should be reviewed and changed if needed. Staff responsibilities should be clearly defined and communicated to ensure that all staff are adequately informed of their duties. Country case assessments of human resource issues should also be conducted regularly to provide evidence on the crisis and identify gaps so they can be addressed.

Measuring Service Quality

Judith Bruce developed a simple framework to assess the quality of family planning services (Bruce, 1990). This framework was developed with the client's perspective in mind and is composed of six parts: 1) choice of methods; 2) information given to clients; 3) technical competence; 4) interpersonal relations; 5) follow-up and continuity mechanisms; and 6) appropriate constellation of services. The first element, choice of methods, refers to the variety of contraceptive methods offered by the facility. Examples of information given

to clients include pamphlets or brochures containing detailed information about the advantages or disadvantages of various contraceptive methods and possible side effects of these methods. Technical competence refers to the providers' adherence to protocols and being trained in providing clinical services such as sterilization or IUD insertion and removal. Staff to client ratios are an example of an indicator in the fourth component of the framework, interpersonal relations.

Several studies have assessed quality in family planning programs all over the world including Morocco, Nigeria and Peru (Askew, Mensch, & Adewuyi, 1994; Brown et al., 1995; Mensch, Arends-Kuenning, & Jain, 1996). Brown et al. (1995) conducted a study to measure the quality of care of FP services in five provinces in Morocco using the Bruce framework. The most common shortfalls among the facilities assessed were a lack of materials used in counseling for FP and the lack of a specific type of oral contraceptive pill. The authors point to the complexity involved in measuring quality and the complications that exist when measuring quality in a decentralized health system. Data were collected through various methods including inventory, observation and client exit interviews. Some of the indicators used from the inventory data were: number and range of methods available at the service delivery point, printed information available for counseling, and the availability of basic equipment.

Askew et al. (1994) also used the Bruce framework and a situation analysis to measure quality of FP services at 181 service delivery points in Nigeria. The authors discuss methodological issues that arise when attempting to quantify service quality. One of these issues is the unit of analysis, historically being the client, now becoming the service delivery point or the provider of FP services. Individual health care staff provide varying degrees of

quality when it comes to FP services and this presents difficulties when analyzing composite variables that have been created to assess quality. The validity of data collection using the method of direct observation can be weakened due to the Hawthorne effect which may create a bias. The persons collecting the data may also present biases due to preconceived ideas they may have about the meaning of technical competence.

Mensch et al. (1996) addresses an important consideration in the use of a situation analysis to assess quality, since it does not provide data on the quality of care from the client's perspective. The use of the situation analysis does not give the whole picture of quality since observation does not capture staff training or whether the client's needs are being met. There also exist differences in views from the health systems researchers and that of the government. For instance, in Peru, the size and location of health facilities are correlated with the size of the population in the surrounding catchment area, but government policy states that areas with low service utilization will be targeted for improvement, regardless of their location or workload.

Measuring Facility Readiness

Many researchers have designed studies to assess different aspects of facility readiness using a variety of techniques. A 2001 study of public health clinics in South Africa measured the efficiency of service provision using technical and scale efficiency scores (Kirigia, Sambo, & Scheel, 2001). The authors calculated these scores using linear programming software and analyzed input data, such as number of trained staff, and output data, such as the number of family planning visits.

Gill et al. developed a tool to assess emergency obstetric care in resource poor settings (Gill, Bailey, Waxman, & Smith, 2005). Readiness was assessed by having sufficient numbers of staff trained to provide these services, available and functioning supplies and equipment, as well as adequate infrastructure. A walk-through tool was designed for this study and used as a checklist to assess the availability of certain items in health facilities providing emergency obstetric care in Bangladesh, Vietnam and Peru.

In 1999, researchers conducted a study to improve the quality of service provision in Tanzania (Atherton, Mbekem, & Nyalusi, 1999). The authors concluded that the quality of health services across sub-Saharan African can be considerably improved if the barriers that prohibit the effectiveness of the services can be recognized and addressed. The Tanzania Family Health Project implemented several interventions to improve service quality. These interventions can be categorized into three areas: staff factors, facility factors and service factors. Staff interventions involve ensuring that all staff have the clinical skills needed to provide specific services and are trained on a regular basis. Optimally, training sessions take place at the health facility where the staff are employed and can also be directly observed. Techniques to increase staff motivation and strengthen links with the community will ultimately help in achieving sustainable, higher quality services. Facility interventions are targeted towards adequate provision of necessary infrastructure, equipment, and supplies. Service interventions are geared towards effective management, implementing quality assurance techniques, and integration of preventive and curative services. A mid-term evaluation of the project revealed many successes including improved health infrastructure along with the number of staff trained in reproductive health service provision.

Health care reforms usually have the goal of achieving equity in health but improving efficiency of health systems and services are also an important focus (Gilson, 1995). Gilson authored a paper evaluating primary level health care in Tanzania and reported that financing reforms will not solve the problem alone; improvements are needed in organizational and management development as well. She assessed quality by utilizing the view that in order to provide health care services effectively, there are minimum standards of performance that must be achieved. Using this perspective, Gilson assessed health care inputs, health care provision, and client satisfaction. The inputs consisted of indicators of structural quality, which included availability and condition of health infrastructure and supplies, and availability of staff and services. Gilson found evidence of misallocation of staff with respect to workload. Staffing patterns indicated a surplus of staff in areas with fewer clients and shortages of equipment and supplies were detected hindering staff productivity. Staff motivation was also identified as an issue, influenced by unsatisfactory salaries and low morale.

Gilson (1995) proposed using a staff allocation method to address the issue of inequitable staff distribution. Using this method, the time it takes to provide a service is determined and compared with the time staff have available. This indicator provides information regarding staff shortages and allocation inefficiencies that will inform the strategy to reallocate staff. When allocating staff, the workload should always be taken into account in order to achieve the greatest productivity and efficiency. Gilson concluded her evaluation by stating the importance of Tanzania's national health policy and guidelines in providing a framework to assist health officials in managing health care services in their district.

Chapter 3: METHODOLOGY

Introduction

This study used two secondary datasets which contain information on over 200 health facilities in Ghana. These datasets also contained information on various types of equipment in these health facilities. The project Quality Health Partners (QHP) collected the data between 2004 and 2005. The focus of this study was to evaluate the provision of short-term family planning methods in Ghana by examining the staffing levels in hospitals and health centers, as well as assessing how much equipment is available to provide quality family planning services using these datasets. The author performed different analyses in order to answer the research questions and merged both of the available datasets together to allow for a richer set of analyses. A brief explanation of each dataset and the merging process is below.

Datasets

Reproductive & Child Health Equipment Assessment (RCHEA)

The objective of data collection for the RCHEA project was “to gather data related to the availability of key reproductive and child health (RCH) equipment” in 28 target districts of the seven southernmost regions of the country (QHP Equipment Research Proposal, 2005). A team at Quality Health Partners (QHP) collected data between September 2005 and November 2005 on basic infrastructure, facilities providing RCH services, basic equipment, supplies necessary to provide RCH services and average OPD (outpatient department) and IPD (inpatient department) attendance. The research team utilized two research tools: 1) an Equipment Assessment Tool for Hospitals and, 2) an Equipment Assessment Tool for Health Centers. QHP designed and implemented

these tools based on the instruments from the Ghana Service Provision Assessment (Ghana Statistical Service. Health Research Unit et al., 2003). The sample (n=207) included 7 regional hospitals, 31 district hospitals and 151 health centers in deprived districts of Ghana.

Data collection was concentrated in only 30 districts in the seven southernmost regions of Ghana, and therefore the data are not nationally representative. The only region where data from all districts was collected was the Central Region. These results are not generalizable to the situation in Ghana, but rather represent the situation in low-resource settings in the southern part of Ghana.

Facility Baseline Assessment (FBA)

The objective of data collection for the facility baseline assessment was “to gather data related to the readiness of facilities to provide quality RCH services in regional hospitals in 10 regions, in 28 target districts of the seven southern regions” (QHP FBA research proposal, 2004). The regions for which these data were collected are listed in Appendix A. The research team collected data between November 2004 and February 2005 on basic equipment needed for RCH services, human resources (number, types and skills of staff to provide RCH services) and the existence and use of current guidelines and protocols for reproductive and child health. The research tools included: 1) a facility audit (infrastructure, equipment, services available, staffing, training needs, gaps for quality services), and 2) an interview with service providers (training, everyday practice, availability of guidelines, gaps for quality services). Like the RCHEA tools, these were based on the instruments from the Ghana Service Provision Assessment. The sample

(n=171) included 10 regional hospitals, 30 district hospitals and 116 health centers in Ghana. The research team did not conduct observations of family planning services.

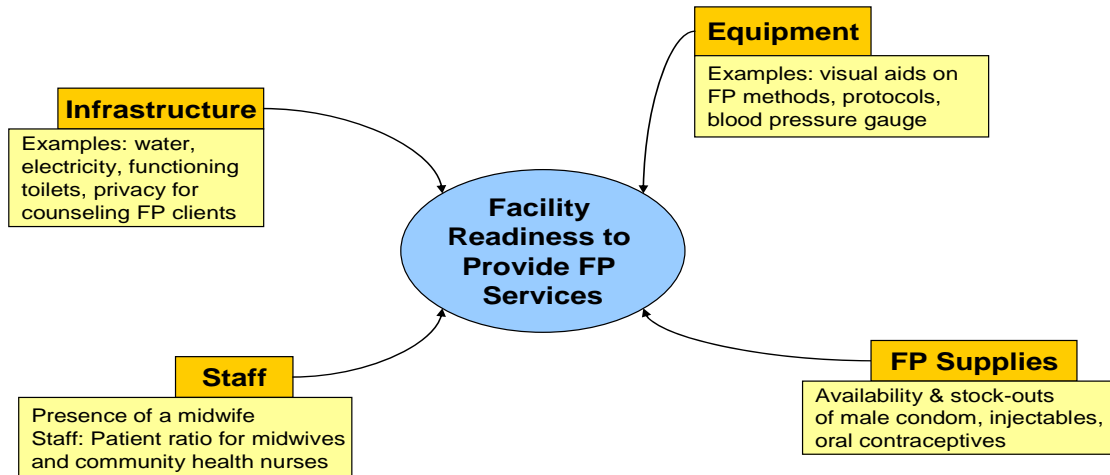
Merged Dataset

These two datasets were merged together to create a set of data specifically for this study. Cases in the FBA dataset were sorted and matched by the facility variable, a variable indicating the identification number of each facility. Then a permanent filter was created to select for only those facilities that have data from FBA and RCHEA and selecting for only those facilities which provide at least one short-term family planning method. Facilities providing at least one short-term family planning method were chosen as the focus since the prevalence of long-term contraceptive method use is very low in Ghana (Ghana Statistical Service et al., 2004). Most of the data used in this study was originally from the FBA dataset, such as data on visual aids for family planning; basic amenities such as water, electricity and a functioning toilet; the number of new FP clients in 2003; and the number of male condoms and oral contraceptives provided in 2003. The rest of the data in this study came from the RCHEA dataset, such as variables containing numbers of outpatients per facility, and visual and auditory privacy for FP counseling.

Research Design and Sample

A conceptual framework used to assess facility readiness using selected indicators has been created (Figure 3.1.).

Figure 3.1. Conceptual Framework



This conceptual framework shows the four key indicators of quality FP provision that were used to assess the readiness of health facilities to provide short-term methods of FP. These four indicators were staffing levels, FP supplies, equipment and infrastructure. Examples of the variables used are provided under each indicator. The availability of FP supplies was assessed by analyzing the availability of three types of short-term contraceptive methods: the male condom, injectable and oral contraceptives. The author assessed staffing by detecting the presence of a midwife in a facility, a key provider of FP services in Ghana. Infrastructure was assessed by looking at six basic amenities necessary to provide FP, namely, on-site water, electricity, functioning toilets, facility cleanliness, protected waiting area and visual and auditory privacy for FP counseling. Lastly, the author assessed the equipment necessary to provide FP services by looking at

the availability of items such as visual aids for FP, the presence of FP service protocols and blood pressure gauges for examination. Facilities were stratified by type of service (hospital, health center) and the operating authority (i.e. government, mission and private). Client demand and workload were also taken into account using outpatient data from the RCHEA dataset.

Analysis

The author conducted all analyses using the statistical analysis software package SPSS v.11.5.0 (2002). Data were cleaned, and outliers were noted and taken into account for the purpose of the analyses. Descriptive analyses were conducted to determine types and number of strata, in addition to computing new variables. Strata were created according to operating authority and facility type. Initially seven strata were created (Table 3.1). Most of the facilities run by missions were Christian, and some Catholic.

Table 3.1. Initial Seven Strata

Stratum	N
Government Regional Hospitals	7
Government District Hospitals	20
Mission District Hospitals	3
Private District Hospitals	1
Government Health Centers	100
Mission Health Centers	3
Private Health Centers	2
Total	136

However, these seven strata were collapsed into four due to the low numbers in several strata (i.e. n=1 for private district hospitals and n=2 for private health centers) and to facilitate the analysis process without the omission of facilities (Table 3.2). The decision

was based on looking at the frequencies of OPD per day and frequencies on selected equipment variables to detect major differences between the strata.

Table 3.2. Collapsed Strata

Stratum	N
Government Regional/District Hospitals	27
Mission/Private District Hospitals	4
Government Health Centers	100
Mission/Private Health Centers	5
Total	136

New variables were computed for each of the four new strata. The number of outpatients per day was not included in the data therefore it was computed by adding the number of outpatients per quarter year and dividing by the number of days in the quarters. This value was then rounded to facilitate the analysis process.

Staff to patient ratios were calculated for the key providers of FP: midwives and community health nurses. These two cadre of staff are the most important providers of FP in Ghana, followed by doctors, public health nurses, professional nurses, and medical assistants (Quality Health Partners, 23 February 2007).

To obtain the ratio, the number of midwives, for example, was divided by the number of outpatients per day for a given facility. Although the human resource indicator for doctors and nurses used in analyses of Ghana's MoH documents is the staff to population ratio, the data used in this analysis did not capture population ratios, so the staff to outpatient ratio was calculated instead. These ratios were calculated to illustrate the average distribution of midwives and CHNs across health facilities in Ghana, but the criterion used in assessing readiness for staffing was the presence of at least one midwife in a facility.

During data collection, the QHP research team coded some items as “observed and “reported available.” For the purposes of this analysis if an item was observed or reported available the author considered it to be available. Composite variables were also developed, for example, the variable for a quality pelvic exam was determined by the presence of visual and auditory privacy for client examination, and availability of an examination bed, an examination light and a vaginal speculum (Quality Health Partners & Ghana Health Service, 2005). Missing data for binary variables were lumped into the “no” category to prevent the exclusion of these cases from the analysis. Missing data for staff variables were also coded as “0,” indicating the facility did not have the staff available.

The author conducted crosstabulations using all the descriptive variables for infrastructure, supplies, equipment and staffing ratios. A series of chi-square tests were conducted to determine if there were significant associations between facility readiness indicators within and between health facilities using a significance level of $p < 0.05$. Chi-square tests were conducted to determine if there were any significant associations between the readiness of government hospitals and government health centers according to three of the indicators. Analyses were conducted to determine if there are any associations between readiness of supplies and infrastructure, equipment and supplies, and infrastructure and equipment. Another series of chi-square tests were conducted to detect whether associations existed between the level of caseload in a facility and the readiness indicators.

In order to assess the overall readiness of facilities to provide short-term methods of FP, variables for each of the four categorical indicators were analyzed. Facility

readiness for staffing was assessed by the presence of at least one midwife in the facility. The supply indicators were analyzed according to CDC guidelines and benchmarks were set for the remaining two categorical indicators.

Short-term family planning methods were selected as the focus of this project, since use of long-term and permanent contraceptive methods (LAPM) is very low in Ghana. The 2003 DHS shows that current use of female sterilization is 1.3% among all women, whereas use of the IUD is 0.6%, and implants are 0.7% in this group (Ghana Statistical Service et al., 2004). Male sterilization is virtually non-existent, as the 2003 DHS reports 0% of all men ever having had undergone a vasectomy. Only in recent years have campaigns been introduced to increase the use of vasectomy among men in Ghana.

Regarding use of short-term methods, the highest usage rates are for the pill (4.1%), injectable (3.7%) and the male condom (4.3%), so the focus has been placed on these methods for the analysis. Other short-term methods had much lower prevalence rates, indicating lower client demand or availability, and thus, facilities were not assessed for their readiness to provide the following short-term methods: diaphragm (0.0%), spermicidal foam/jelly (0.2%) and female condom (0.2%) (Ghana Statistical Service et al., 2004). The 2002 GSPA confirms the DHS data and reports that the methods that were most commonly reported as offered were the injectable, combined oral pill and the male condom (Ghana Statistical Service. Health Research Unit et al., 2003).

The author analyzed all facilities which reported offering at least one short-term method of FP (n=136) to determine if they meet the criteria for facility readiness using four indicators developed for this study: staff, infrastructure, FP supplies and equipment.

They were assessed according to each indicator, and then overall facility readiness was determined using all four indicators. Detailed descriptive tables are attached as appendices, and summarized descriptive tables are presented in the results section.

Table 3.3 contains the variables that were assessed to determine facility readiness to provide short-term methods. A description of the criteria for each variable is provided below.

Table 3.3. Variables Used To Assess Facility Readiness To Provide Short-term FP Methods.

Staff
Presence of at least one midwife in the facility
Infrastructure
Electricity
On-site water
Protected waiting area
Functioning toilet
Clean facility
Visual/auditory privacy for counseling
Supplies
Adequate number of the following methods:
-Combined Pill
-Progesterone-only Pill
-2-3 month supply injectable
-1 month supply injectable
-Male condom
Equipment
-National Reproductive Health Service protocol
-“Essentials of Contraceptive Technology” book (Hatcher 2007)
-Visual aids for FP: different FP methods, condom model, FP posters, Essentials of Contraceptive Technology poster
-Sharps container for infection prevention
-Basic FP examination equipment: functioning blood pressure gauge, weighing scale, stethoscope, and sterile needle

Staff

Descriptive data is presented for midwife:patient and community health nurse (CHN):patient ratios in government hospitals and government health centers. Ratios for other cadres of staff such as doctors, medical assistants and professional nurses were not calculated because CHN's and midwives are the key providers of FP services in Ghana.

For the purposes of this study, if at least one midwife was present in the facility, the facility was considered to have the adequate staff available for short-term family planning service provision. Data on the 24-hour availability of trained service providers is presented in a descriptive table.

Infrastructure

The basic amenities of infrastructure that were included in the analysis are electricity, on-site water, waiting area for clients protected from sun and rain, functioning toilet, cleanliness of a facility and the presence of visual and auditory privacy for FP counseling. The infrastructure data were not analyzed using a percentile ranking due to the binary nature of the variables and is presented in a descriptive table instead. If a facility had three of these six basic amenities, it was considered to have the adequate infrastructure for short-term FP service provision.

Supplies

The author analyzed the data on the availability of oral contraceptive pills, male condoms, and the 2-3 monthly injectable by dividing the number of methods given or sold to clients in 2003 by the number of new FP clients in 2003. The computation of this

variable provided the number of each method provided per person. Then, this number was assessed against the guidelines in Table 3.4 to assess whether the facility had an adequate supply of these methods. If a facility met the guidelines for at least one of these methods, it was considered to have adequate FP supplies. Female condoms, spermicides, the diaphragm and the one-monthly injectable were not analyzed due to the absence of supply guidelines for these methods.

Table 3.4. Guidelines For Calculating Annual Supplies For New FP Clients

Method	Guideline
Pills	7.5 cycles per new user
Condoms	60 per new user
Injectables	2 units of Depo-Provera (3 monthly) per new user 3 units of Noristerat (2 monthly) per new user

Source: CDC, 1999:622.

Equipment

The author analyzed the following variables for equipment: reproductive health protocols and guidelines, visual aids for family planning, sharps container, functioning blood pressure (BP) gauge, weighing scale, stethoscope and a sterile needle. The minimum equipment required to provide FP services was having: 1) at least one of the two protocols or guidelines, 2) at least one of the visual aids for family planning, 3) a sharps container, and 4) at least three of the four basic items for routine examination (functioning BP gauge, weighing scale, stethoscope and sterile needle). Descriptive tables are presented for each the four criteria for equipment.

Overall Facility Readiness

If a facility fulfilled all of the criteria below it was considered to be adequately prepared to provide at least one short-term method of family planning.

Staff

- Facility had at least one midwife present at the facility

Infrastructure

- Facility had three out of the six basic amenities: electricity, on-site water, protected waiting area for clients, functioning toilet, clean facility, and visual/auditory privacy for FP counseling.

Supplies

- At least one method (pill, injectable or male condom) was in adequate supply according to the CDC guidelines.

Equipment

- At least one of the two types of RH protocols/guidelines
- At least one visual aid for FP
- Sharps container
- Three of the four basic items for an exam: functioning BP gauge, weighing scale, stethoscope and sterile needles.

Limitations

Since this study analyzes secondary data, it must be recognized that the data were not collected in order to answer the research questions presented in this study. One limitation in this regards the interpretation of the variable created to indicate OPD

attendance per day. This variable represents outpatients seeking all services at a given facility, not only clients seeking family planning services. Also, the data on the number of health workers present at a given facility represent health workers who provide a range of services not specific to family planning and these workers may not necessarily be available for every day FP services are offered.

Another limitation of the study is that due to the absence of international standards or benchmarks to assess facility readiness, benchmarks have been chosen to assess facility readiness without a strong base of support from existing literature. By lowering or increasing these benchmarks, the results of this study can be greatly altered. Also, each of the four indicators for readiness is given equal weight, but it is possible that they are not all equally important in determining facility readiness for family planning.

Information on staff training was not available in the datasets provided and this could have been helpful in assessing not only the number of staff available, but their specific training levels in FP service provision as well.

Lastly, the quality of the FP service provision could not be assessed using this dataset since FP observation and client exit interviews measuring satisfaction with services were not conducted. Therefore, the scope of the study focused on determining facility readiness rather than assessing quality.

Delimitations

Data were available for 171 facilities in the FBA dataset and 207 facilities in the RCHEA dataset, however merging the datasets resulted in a broader range of data for fewer facilities, rather than having a narrow range of data and a larger *n*. The author

further limited the facilities by selecting only those that contained data from both the FBA and RCHEA dataset, and only those that offered at least one short-term method of family planning. Therefore, only facilities from seven of the ten regions were assessed, even though data on all ten regions were available in the FBA dataset because the RCHEA only collected data from the seven southernmost regions of Ghana. Lastly, out of the 1726 variables available in the dataset, the author used only about 30 since they specifically contained data that was collected in regards to FP services.

Chapter 4: RESULTS

Results are presented according to each indicator, then for all four indicators together. Chi-square test results for associations are also presented at the end of this chapter.

Staffing Levels

Descriptives

Across all facilities, the mean midwife:patient ratio was 0.21, indicating an average number of 21 midwives per 100 patients, and the mean community health nurse (CHN):patient ratio was 0.34, indicating an average number of 34 CHN's per 100 patients. The medians and standard deviations (SD) are presented in Table 4.1 below.

Table 4.1. Mean Midwife and CHN to Patient Ratios in All Facilities

	Mean	Median	SD
Midwife:Patient ratio	0.21	0.12	0.25
CHN:Patient ratio	0.34	0.19	0.52

Stratified tables representing all descriptive statistics for these ratios in all four types of facilities can be found in Appendix B.

Analysis-Findings

All 27 government hospitals and 84 (84%) of the 100 government health centers reported having at least one midwife in the facility. All four mission and private hospitals and four of the five mission and private health centers reported having at least one midwife in the facility.

In Table 4.2 below, the number of facilities is shown that met the criteria for facility readiness on the staffing indicator. Facilities were considered “ready” if they had at least one midwife present.

Table 4.2. Number of Facilities Meeting the Criteria for Staffing (At least one midwife present in the facility)

	Yes	Row %	No	Row %
Govt Hosp	27	100.0	0	0.0
Mission/Private Hosp	4	100.0	0	0.0
Govt HC	84	84.0	16	16.0
Mission/Private HC	4	80.0	1	20.0
Total	119	87.5	17	12.5

Table 4.3. Number of Facilities That Reported Having a Trained Provider Available At All Times 24 Hours/Day

	Yes	Row %	No	Row %
Govt Hosp	27	100.0	0	0.0
Mission/Private Hosp	4	100.0	0	0.0
Govt HC	86	86.0	14	14.0
Mission/Private HC	4	80.0	1	20.0
Total	121	89.6	14	10.4

All hospitals indicated that there was a trained health provider present at the facility at all times, whereas at least 80% of health centers indicated that this was true (Table 4.3). Overall, across the four strata, approximately 90% of all health facilities stated that there was a trained health provider at the facility at all times.

Infrastructure

Descriptives

Descriptive tables for each of the six amenities can be found in Appendix C. All missing data was coded as not being available and it was assumed that the facility did not have these amenities. Of the 27 government hospitals, all had electricity and a waiting area for clients that was protected from sun and rain. Most (96%) had on-site water and

were generally clean (96%). However, only 82% of government hospitals have visual and auditory privacy for counseling and 78% have a functioning toilet. All four mission and private hospitals had all the amenities, however only three of the four (75%) had visual/auditory privacy for FP counseling. Seventy-eight percent of government health centers had electricity, 63% had on-site water, 96% had a protected waiting area for clients, 73% had a functioning toilet, 85% were determined to be clean, and 83% had visual and auditory privacy for FP counseling. All five of the mission and private health centers had all amenities, except only three of five (60%) had on-site water.

Analysis-Findings

All nine of the mission and privately operated health facilities had at least three out of the six basic amenities (electricity, on-site water, protected waiting area for clients, functioning toilet, clean facility, and visual/auditory privacy for FP counseling), whereas 85% of government hospitals and 90% of government health centers met the criteria (Table 4.4).

Table 4.4. Facility Readiness For Having The Infrastructure Necessary To Provide Short-term FP (at least 3 out of 6 basic amenities)

	Yes	%	No	%
Govt Hosp	23	85.2	4	14.8
Mission/Private Hosp	4	100.0	0	0.0
Govt HC	90	90.0	10	10.0
Mission/Private HC	5	100.0	0	0.0
Total	122	89.7	14	10.3

Supplies

Descriptives

Descriptive tables for supply variables can be found in Appendix D. The method with the highest availability was the injectable with 82% of government hospitals, 50% of

mission and private hospitals, 68% of government health centers and 60% of mission and private health centers having an adequate supply of injectable contraceptives when assessed according to the number of new FP clients a year. The least available method was the progesterone-only pill; none of the facilities met this criterion. Falling in between these two extremes were the combined pills and condoms. Twenty-two percent of government hospitals had an adequate supply of combined pills, whereas one (25%) out of four mission and private hospitals and one (20%) out of five mission and private health centers had an adequate supply of combined oral pills. Eleven percent of government health centers had an adequate supply of combined oral pills. Lastly, none of the government hospitals or mission and private health centers met the criteria for having 60 condoms per new user. Only one (25%) of four mission and private hospitals and 10% of government health centers met the criteria.

Analysis- Findings

As shown in Table 4.5, 70% of all 136 facilities have an adequate supply of at least one short-term method (pill, injectable or male condom). Of the 27 government hospitals, 81.5% had an adequate supply of at least one method, whereas two of the four mission and private hospitals met the criteria. Sixty-eight percent of government health centers and three (60%) of the five mission and private health centers met the criteria for adequate supply of at least one short-term method.

Table 4.5. Facility has Adequate Supply of at Least One Short-term Method (pill, injectable, condom)

	Yes	%	No	%
Govt Hosp	22	81.5	5	18.5
Mission/Private Hosp	2	50.0	2	50.0
Govt HC	68	68.0	32	32.0
Mission/Private HC	3	60.0	2	40.0
Total	95	69.9	41	30.1

Equipment

Descriptives

Descriptive tables for FP equipment can be found in Appendix E. Of the 27 government hospitals, all had at least one visual aid, 93% had a container to safely dispose sharps, 89% had at least one protocol or guideline and 82% had three of the four basic items for a routine exam (i.e. functioning BP gauge, stethoscope, weighing scale and sterile needle). Of the four mission and privately operated hospitals, all had at least one visual aid and 50% had at least one protocol, a sharps container, and three of the four basic items for a routine exam. Of the 100 government health centers, most (97%) had at least one visual aid, a sharps container (72%), at least one protocol (66%), and 75% of the basic items for a routine exam (64%). All five mission and privately operated health centers had at least one visual aid and a sharps container, while four (80%) of the five had at least one protocol and three of the four basic items for a routine exam.

Analysis-Findings

As shown in Table 4.6 below, 42% of all 136 facilities have the minimum equipment necessary to provide short-term FP methods. Of the 27 government hospitals, 66.7% met the minimum requirements for equipment, whereas one of the four mission and private hospitals met the criteria. Thirty-five percent of government health centers

and three (60%) of the five mission and private health centers met the criteria for equipment.

Table 4.6. Facility has Minimum Equipment Necessary

	N	Yes	%	No	%
Govt Hosp	27	18	66.7	9	33.3
Mission/Private Hosp	4	1	25.0	3	75.0
Govt HC	100	35	35.0	65	65.0
Mission/Private HC	5	3	60.0	2	40.0
Total	136	57	41.9	79	58.1

Overall Facility Readiness

Finally, overall facility readiness to provide a short-term method of family planning was assessed (Table 4.7). Twenty-nine percent of the 136 facilities met all the criteria. A little more than half of the government hospitals met the minimum requirements for staff, infrastructure, supplies, and equipment whereas 24% of the 100 government health centers met these same requirements. One (25%) of four mission and private hospitals met the criteria while none of the five mission and private health centers met the same criteria for mission and privately operated health facilities.

Table 4.7. Overall Facility Readiness

	Yes	%	No	%	Total
Govt Hosp	14	51.9	13	48.1	27
Mission/Private Hosp	1	25.0	3	75.0	4
Govt HC	24	24.0	76	76.0	100
Mission/Private HC	0	0.0	5	100.0	5
Total	39	28.7	97	71.3	136

The names and regions of the 39 facilities that met the criteria for overall facility readiness are listed in Appendix F. These 39 facilities were located in six of the seven geographic regions included in this study. Zero of the 8 facilities in the Brong Ahafo

region met the criteria for overall facility readiness. It should also be noted that in some regions there are only two or three districts included in the dataset. A list of all of the facilities that were included in the study can be found in Appendix G.

Table 4.8 shows how many facilities met the criteria for each of the four indicators. Ninety percent of the 136 facilities met the criteria for infrastructure, followed by staffing (87.5%), supplies (70%), and lastly, equipment (42%).

Table 4.8. Facility Readiness for Each Indicator

	Yes	Row %	No	Row %
Staffing	119	87.5	17	12.5
Infrastructure	122	89.7	14	10.2
Supplies	95	69.9	41	30.1
Equipment	57	41.9	79	58.1

Associations

Chi-square tests were conducted to determine whether facilities with higher caseloads are better resourced than the facilities with a lower caseload that are seeing fewer patients per day. Another series of tests were conducted to determine if there were associations between facilities meeting the criteria for each of the indicators. For example, if a facility met the criteria for equipment, is this same facility more likely to meet the criteria for supplies? Results of these tests are shown below.

Government Health Facilities

Chi-square tests were conducted to determine if there were associations between the readiness of government hospitals and government health centers on the three of the indicators: supplies, equipment, and infrastructure. The results of these tests indicate that there was no association between government hospitals having an adequate supply of at least one short-term FP method and government health centers having an adequate supply

($p=0.17$). However, there is an association between these same facilities having the minimum equipment necessary ($p=0.03$). Sixty-seven percent of government hospitals had the minimum equipment whereas 35% of government health centers had the minimum equipment, illustrating that of all facilities health centers tend to be less well resourced. There was no association between whether these same facilities had three of the six basic amenities ($p=0.48$).

Readiness within Government Health Centers

Chi-square tests were also conducted to determine if there were associations between the types of readiness within government health centers. No associations were detected between the readiness indicators. It can be concluded that there is no association between a government health center having adequate supplies as well as minimum infrastructure ($p=0.39$), or having minimum equipment and adequate supplies ($p=0.32$), or having the minimum infrastructure and equipment ($p=0.08$).

Readiness within Government Hospitals

Another series of chi-square tests were conducted to determine if there were associations between the types of readiness within government hospitals. No associations were found between the readiness indicators. It can be concluded that there is no association between a government hospital having adequate supplies as well as minimum infrastructure ($p=0.08$), or having minimum equipment and adequate supplies ($p=0.73$), or having the minimum infrastructure and equipment ($p=0.70$).

Readiness by Caseload

Chi-square tests were also conducted to determine if associations existed between the types of readiness according to caseload across all facilities. There is an association

between having the minimum equipment needed and caseload ($p=0.04$). Fifty-five percent of the facilities with a high caseload (>20 outpatients per day) had the minimum equipment whereas less than half of the facilities with medium caseload (6-20 outpatients per day) and low caseload (<6 outpatients per day) had the minimum equipment necessary. There is no association between the type of caseload in a facility and the facility having minimum infrastructure ($p=0.74$), or having adequate supplies for FP ($p=0.11$).

Summary of Results

In summary, most of the 136 facilities met the criteria for infrastructure (90%), staffing (87.5%), followed by supplies (70%), and lastly, equipment (42%). Thirty-nine (28.7%) of the facilities met all four criteria and were determined to be equipped to provide quality short-term FP services. There is an association between the likelihood of having minimum equipment and type of governmental facility (hospital or health center). There is also an association between the level of caseload and the likelihood of having the minimum equipment necessary for family planning.

Chapter 5: DISCUSSION

Introduction

The goal of this study was to assess the readiness of facilities in Ghana to provide short-term family planning methods using multiple variables that comprised four indicators: staffing, infrastructure, FP supplies, and equipment. Criteria to assess readiness were developed from indicators in literature and from the organization, QHP, who was responsible for collecting the data. The presence or absence of a midwife was used to assess staffing and benchmarks were set for how many types of equipment and infrastructural amenities should be available in a facility in order to provide short-term methods of family planning. To assess the adequacy of supplies, existing guidelines from CDC were used as benchmarks. Chi-square tests were also run to determine if any indicators were significantly associated with each other.

Discussion of Main Findings

Government Hospitals

The greatest need for government hospitals is adequate procurement of FP supplies. Even though 82% of these facilities had an adequate supply of the injectable, none of the facilities had an adequate supply of progesterone-only pills or male condoms. Only 22% had an adequate supply of the combined oral pill. Government hospitals should prioritize the procurement of these contraceptive methods so they can be available in order to help decrease the unmet need for contraception.

All the government hospitals reported having at least one midwife in the facility and having a trained provider available 24 hours a day. This indicates that hospitals have

at least one, in most cases more, appropriate staff available to provide short-term methods of family planning.

Over 90% of the government hospitals had four of the six basic infrastructural amenities, electricity, protected waiting area for clients, on-site water, and maintained a level of basic cleanliness. The area where government hospitals fell short was regarding the presence of visual and auditory privacy for FP counseling and a functioning toilet. Eighteen percent of government hospitals do not have privacy for counseling and 22% do not have a functioning toilet. These infrastructural amenities are essential in the provision of FP services and the facilities without these amenities should prioritize developing and maintaining capacity for client privacy and functioning toilets.

Even though all 27 government hospitals had at least one visual aid for FP, ideally every facility should have all the visual aids for FP. Only 82% of the hospitals had three of four basic items for a FP exam (stethoscope, blood pressure gauge, sterile needle and weighing scale). Routine exams are very important in FP service provision and all of the items should be available along with a container to safely dispose of sharps, and both protocols for FP. Eleven percent of hospitals did not report having even one of these protocols and 7% did not have a sharps container.

Mission and Private Hospitals

The main improvement needed in the mission and private hospitals was the procurement of basic equipment for family planning services. Only one out of these four facilities met the criteria for FP equipment. Only two facilities had at least one protocol, a sharps container, and three of four basic items for an exam. All of the four hospitals

had at least one visual aid, but they should strive towards having all types of visual aids available to maximize the quality of FP services.

Mission and private hospitals should also concentrate on acquiring the minimum supply of contraceptive methods in order to meet the demands of new and returning FP clients. The methods that are least supplied are combined oral pills, progesterone-only pills, and male condoms. Only one of the facilities has an adequate supply of combined pills and one has an adequate supply of male condoms, whereas none of the four hospitals have an adequate supply of the progesterone-only pill.

All four mission and private hospitals had electricity, on-site water, a protected waiting area, a functioning toilet, and maintained a level of basic cleanliness but one facility did not have privacy for FP counseling. Privacy is essential in the provision of FP counseling and the facility lacking the ability to provide private counseling should work towards being able to make this service available for their FP clients.

Each of the four mission and private hospitals reported having at least one midwife at the facility. The average midwife to patient ratio among these four hospitals was 16:100 and CHN to patient ratio was 13:100. All four hospitals had a trained provider available 24 hours per day.

Government Health Centers

The area of greatest need for government health centers is procuring the minimum equipment for FP. Only 35% of government health centers met the criteria for equipment. Thirty-four percent of facilities do not have even one protocol for the delivery of FP services, and 36% do not have three of the four basic items for a routine FP exam. Twenty-eight percent did not have a sharps container. Even though most did

have at least one visual aid, all the facilities should work towards getting all the visual aids for FP.

In addition to lack of equipment, government health centers should concentrate efforts on procuring adequate supplies of contraceptive methods, since 32% of health centers did not meet the supply criteria set in this study. The methods in most need are the combined oral pills (11% of facilities with adequate supply), condoms (10% with adequate supply), and progesterone-only pills (0% with adequate supply). The injectable contraceptive was the highest at 68%, but facilities should still work on increasing the percentage of facilities with this method since it has one of the highest usage rates among modern contraceptive methods in the country (Ghana Statistical Service et al., 2004).

Regarding infrastructure, 37% of facilities did not have on-site water, and 27% lacked a functioning toilet, whereas 22% did not have electricity, and 20% did not have privacy, basic cleanliness or a protected waiting area for clients. On-site water and functioning toilets are the amenities in greatest need among government health centers.

Eighty-four percent of the government health centers reported having at least one midwife in the facility and 86% reported having a trained provider available 24 hours a day. This indicates that most government health centers have the necessary staff available to provide short-term methods of family planning.

Mission and Private Health Centers

The areas most in need of improvement for mission and private health centers are supplies and equipment. Most mission and private health centers did not have an adequate supply of the injectable contraceptive, combined oral pills, progesterone-only pills or condoms. These facilities should work towards procuring an adequate supply of

at least one of these short-term methods of FP as an alternative to natural family planning. The facilities that did not have even one protocol for FP (n=1), and did not have three of the four items for a routine FP exam (n=1) should work towards procuring these items to increase the quality of FP service provision.

The managers at the two facilities which did not have on-site water should assess the feasibility of implementing a water system in these facilities. Otherwise, all of the mission and private health centers had electricity, a protected waiting area for clients, a functioning toilet, privacy for FP counseling, and maintained a level of basic cleanliness.

Four of the five health centers had at least one midwife per facility, although the median midwife ratio is 13 per 100 patients and CHN is 11 per 100 patients. All but one health center reported having a trained health provider available 24 hours per day.

Overall Readiness Across 136 Facilities

Overall, the two areas that are in most need of attention are supplies and equipment. For the 97 of the 136 facilities that did not meet the criteria, a closer look should be taken using existing data, such as these datasets, to determine the most urgent priorities and a long-term plan for procurement of these items should be developed. These facilities should be targeted by the government and NGOs in future interventions to provide the support they need in order to ultimately improve the quality of family planning service delivery. The 39 facilities that met the criteria for facility readiness in this study should examine how they can further improve their FP service provision and other areas within the scope of reproductive health service delivery.

Associations

No associations were detected between government hospitals and government health centers having adequate FP supplies or basic infrastructure. A possible explanation for this finding is that these facilities are government-run, therefore there is an increased likelihood that they have the financial resources and capacity available to ensure procurement of supplies and institute the necessary infrastructure. An association was found between government hospitals and government health centers having the minimum equipment necessary with a greater proportion of government hospitals reporting having the minimum equipment (67%) than government health centers (35%). This could be because the scope of the procedures conducted in hospitals is typically wider than health centers since the latter usually do not have the capacity to conduct the same types of procedures. They are also bigger facilities with a greater number of FP clients. Therefore, hospitals require more equipment than health centers and may be more likely to have this equipment since it is most likely not only used for family planning services, but other services as well.

No associations were detected between indicators of readiness within government health centers or within government hospitals. The absence of this association could be explained if the procurement of supplies is managed by staff different than those who are responsible for ensuring the water supply, paying for electricity, or maintaining the latrines.

Lastly, an association between having the minimum equipment necessary and caseload was detected ($p=0.04$). Fifty-five percent of the facilities with a high caseload had the minimum equipment whereas less than half of the facilities with medium

caseload and low caseload had the minimum equipment necessary. This finding is not surprising since it indicates that facilities with a higher caseload are more likely to be well-equipped than facilities with lower caseloads. This is an encouraging sign that facilities provide care for a high number of patients are at least receiving resources to enable their work. However, no association was found between caseload and infrastructure or FP supplies.

Comparing Results with Ghana Service Provision Assessment and Ghana Demographic and Health Survey

Services

In the 2002 Ghana SPA, 89% of the 383 facilities offering FP services offered temporary FP methods and 9% provided permanent methods (vasectomy and tubal ligation). In the current study, 19% of facilities offered sterilization services, but very few actually reported having provided the service in 2003. Although twenty-two (84.6%) of 26 facilities reported offering tubal ligation services, of those 22, only seven reported conducting more than 40 procedures in 2003. On the other hand, only three of the 24 facilities that reported providing vasectomy services actually performed at least one male sterilization procedure of this type in 2003. Therefore, out of the few facilities that state providing sterilization services, the number of sterilization procedures they are performing remains quite low.

Staff

Qualified staff is defined by the GSPA as a medical doctor, medical assistant, public health nurse, professional midwife or a professional nurse (Ghana Statistical Service. Health Research Unit et al., 2003) and while the GSPA did not assess facilities

for the presence or absence of midwife, it did assess facilities that provide basic RCH services that have qualified staff available. Findings indicated that 26% of facilities met this criterion. This study found that 87.5% of facilities that offered short-term methods of family planning have at least one midwife present.

Infrastructure

In the 2002 GSPA assessment of infrastructure of health facilities providing family planning services, 79% of facilities provided visual and auditory privacy for counseling of FP. In this study, 82% of facilities provided this level of privacy for FP counseling sessions. Since the instruments in the RCHEA & QHP datasets were modeled after the GSPA, privacy was defined the same way: as a room with a door. The comparison of these results is facilitated by the use of the same definition.

Approximately, data from the GSPA and the current study indicate a similar proportion of health facilities equipped with visual and auditory privacy for FP counseling.

Supplies

Most facilities in the current study had the injectable available (70%) while the least available method was the progesterone-only pill (0%). These results are compatible with the DHS which found that the one of the most common forms of contraception currently being used is the injectable (3.7%) (Ghana Statistical Service et al., 2004). In the DHS, the pill is not differentiated by type (combined oral pill, progesterone-only), but according to this study's findings, it seems likely that the combined oral pill is in greater demand because it is much more commonly used and available than the progesterone-only pill. Facilities reported dispensing the combined oral pill more often than the progesterone-only pill.

Equipment

The 2002 GSPA reported that 92% of facilities had visual aids for client education, which were defined as: “model for demonstrating use of condom or other visual aids for health education or family planning” (Ghana Statistical Service, Health Research Unit, MoH, & ORC Macro, 2003:95). The definition does not clearly state whether the model demonstrating use of a condom was required to be present in order for the facility to meet this criterion, nor does it state what examples of the visual aids were included. This makes it more difficult to compare to this study’s findings, since this study assessed whether the facility had at least one visual aid. The fact that 98% facilities in this study had at least one visual aid makes sense when comparing it to the 92% of facilities meeting the criteria in the GSPA since a lower criterion was used in this study, making it more likely for facilities to meet this criterion. Also, these two datasets are not exactly comparable because the QHP datasets look at a targeted resource poor setting in the seven southern regions, while the GSPA was representative nationwide.

Public Health Implications

The findings of this study will assist Quality Health Partners and other non-governmental organizations (NGOs) to assess the quality of current family planning services in Ghana. It is the first time that data from both the RCHEA and FBA have been merged together for use in a single study assessing FP services.

The findings of this study provide evidence to MoH and the Ghana Health Service (GHS) for why staffing guidelines are needed and point to the importance of implementing human resource systems where they do not exist, and strengthening the

systems that do exist by developing the capacity to monitor and utilize these systems effectively. This would enable more rigorous research to be undertaken to assess human resource gaps in health facilities providing any type of service in Ghana, not just family planning. Hiring and retaining staff is only one part of the solution; the second part involves training staff adequately to provide specific types of reproductive health services.

Future Recommendations

Future Research

Health facilities in Ghana should be assessed for their readiness to provide services for long-acting and permanent methods (LAPM) of family planning, especially in the next several years since the uptake of these methods, like the vasectomy, is expected to increase due to recent campaigns to increase awareness and the push to train health care staff in providing these methods. Perhaps, this assessment of readiness to provide services for LAPM of family planning will be undertaken by the next GSPA. So far, three SPA's have been conducted in Ghana, in the years 1993, 1996, and 2002.

Future research studies assessing facility readiness in Ghana could alter the criteria used in this study and more indicators can be incorporated to provide a more in-depth assessment that would increase precision in determining facility readiness. For example, levels of training of staff should be taken into account as well as observations of FP services to assess staff compliance with protocols.

Policy Recommendations

These findings and the supporting literature cited in this study can be used as evidence to prioritize the formulation of national staffing guidelines and the strengthening of human resource systems in Ghana. Due to the lack of standards for staffing, infrastructure, and equipment, international standards determining the components necessary to provide quality family planning services should be developed. This will help guide researchers to conduct health facility assessments and guide health administrators in the appropriate procurement of these items.

The results of this study will provide some momentum for the government to improve, strengthen, and monitor the existing human resource systems in order to promote quality health care delivery. The government should provide their full support in this effort and provide the financial resources where available. Support should also be solicited from donors and local NGO's to supplement the support from the Ghana Ministry of Health and the Ghana Health Service.

Readiness Factors

Staff

One limitation in staffing is that midwives do not exclusively provide FP services. Even though midwives can be trained in IUD and Norplant insertion, their first priority is often in the delivery ward. Therefore, when interpreting the results for staffing, the midwife that is reportedly present in the facility does not indicate that the staff member is exclusively providing family planning services. In fact, midwives are typically responsible for providing a range of reproductive health services. Also, since only

midwives were accounted for in the analysis, there are other cadres of staff that may be available and trained in FP service provision such as doctors, community health nurses, and other nurses.

Looking specifically at the results for staffing as they apply to this study, a higher proportion of government hospitals report having a midwife present than government health centers. A possible reason for why hospitals are more likely to have a midwife is due to the broader scope of reproductive health services that a hospital is likely to offer. Another limitation lies in the reality that even if a facility reported having at least one midwife present, this does not mean that this individual is guaranteed to be trained in FP or that he or she will be present at the facility for each day of the week that FP services are provided.

Another finding regarding staffing is that 90% of all facilities reported having a trained health provider present at the facility at all times. Although this seems very high, this finding is not necessarily as applicable to family planning as it may be to labor and delivery services, for which emergencies are more likely to occur and it would be more important to have a trained service provider available.

Infrastructure

Ninety percent of all facilities met the criteria for basic infrastructure necessary to provide FP services. Each amenity was given equal weight, and a facility met the criteria if it had any three of the six amenities, however, which of these three types of amenities it had was not assessed. Although most of the government facilities met this criterion, it is important to note that all nine of the mission and private facilities met this same criterion. This implies the possibility that mission and private operating authorities are associated

with the likelihood of having infrastructural capacity necessary to provide FP services, but it is also possible that these findings could be due to chance since there were fewer mission and private facilities (n=9) than government facilities (n=127). Looking at the descriptive statistics in Appendix B, all nine of the mission and private facilities had electricity, a waiting area for clients protected from sun and rain, a functioning toilet for clients, and were generally clean.

Supplies

The only information that was available to assess whether a facility had an adequate supply of FP methods was the number of each method (i.e. oral contraceptive pill, injectable, male condom) that was given or sold to clients in the year 2003. This was the best information available to assess whether the facility had an adequate supply because it indicated that the facility had to have the methods available in order to dispense them to clients. An actual inventory of methods in stock was not conducted using the research tools in either of the datasets.

Seventy percent of the 136 facilities in this study had an adequate supply of at least one short-term method (pill, injectable or male condom). Given the CDC guidelines, these results may underestimate of the amount of methods that the facility actually had available to dispense to clients. Perhaps a facility had more items in stock, but due to client demand or other factors, such as cost or procurement issues, these methods were not dispensed to clients. Most likely these facilities had more methods in stock than were reported to have been dispensed, and in this case it would have been useful to have inventory data on expired products and storage to indicate wastage of FP methods.

Looking at the stock-out data in Appendix C, there are low levels of stock-outs for the three short-term methods focused on in this study. Only 6% of facilities reported stock-outs of combined oral pills, 10% reported stock-outs of 2-3 monthly injectables, 14% reported stock-outs of 1-monthly injectables and 9% reported stock-outs of male condoms. These descriptive findings present an alternative way that facilities can be assessed for having an adequate number of FP methods available for clients.

Another limitation in the study is that data were not available on observations of family planning clients since this was not one of the methods of data collection in the FBA, whereas it was one of the components of the GSPA. Had this data been collected, it would have been useful in assessing staff compliance with service delivery protocols. Likewise, had exit interviews been conducted with FP clients, client satisfaction with services could have been assessed.

Equipment

Forty-two percent of facilities met the criteria for equipment. Almost all of the facilities (98%) had at least one out of five visual aids, which not surprisingly high since they were only assessed for having one of five types of visual aids. Had the criterion been set to three or four out of five visual aids, this number would likely have been much lower. All items for infection prevention were not assessed (soap, water, clean gloves, towels, sharps container, decontamination solution), because, for example, decontamination solution and clean gloves is not as important in providing short-term FP methods as it would be in providing long-acting and permanent methods (LAPM) due to the invasive procedures for inserting implants or for a tubal ligation procedure. The availability of water was assessed through the infrastructure indicator, and a sharps

container was deemed the most important of these five items since it is the method of administration for the contraceptive injectable.

Conclusion

In conclusion, only 39 (28.7%) of a sample of 136 health facilities in Ghana have been assessed as “ready” to provide short-term methods of family planning. This indicates the need to develop appropriate interventions targeted towards adequately procuring the staff, equipment, supplies and building infrastructure for those remaining 97 facilities that were not determined to be adequately equipped with the resources needed to provide quality short-term methods of family planning.

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Appendix A: REGIONS OF GHANA

List of Regions Where FBA Data Was Collected

ASHANTI
BRONG AHAFO
CENTRAL
EASTERN
GREATER ACCRA
VOLTA
WESTERN

Appendix B: STAFF:PATIENT RATIOS

Table B.1. Midwife to Patient Ratio

	Mean	Median	SD
Govt Hosp	0.17	0.12	0.12
Mission/Private Hosp	0.16	0.17	0.09
Govt HC	0.21	0.12	0.25
Mission/Private HC	0.36	0.13	0.56

Table B.2. Community Health Nurse to Patient Ratio

	Mean	Median	SD
Govt Hosp	0.12	0.12	0.08
Mission/Private Hosp	0.13	0.12	0.16
Govt HC	0.40	0.27	0.56
Mission/Private HC	0.48	0.11	0.88

Appendix C: INFRASTRUCTURE

Table C.1. Electricity

	Yes	Row %	No	Row %
Govt Hosp	27	100.0	0	0.0
Mission/Private Hosp	4	100.0	0	0.0
Govt HC	78	78.2	22	22.0
Mission/Private HC	5	100.0	0	0.0
Total	114	83.8	22	16.2

Table C.2. On-Site Water

	Yes	Row %	No	Row %
Govt Hosp	26	96.3	1	3.7
Mission/Private Hosp	4	100.0	0	0.0
Govt HC	63	63.0	37	37.0
Mission/Private HC	3	60.0	2	40.0
Total	96	70.6	40	29.4

Table C.3. Protected Waiting Area for Clients

	Yes	Row %	No	Row %
Govt Hosp	27	100.0	0	0.0
Mission/Private Hosp	4	100.0	0	0.0
Govt HC	96	96.0	3	3.0
Mission/Private HC	5	100.0	0	0.0
Total	133	97.8	3	2.2

Table C.4. Functioning Toilet/Latrine for Clients

	Yes	Row %	No	Row %
Govt Hosp	21	77.8	6	22.2
Mission/Private Hosp	4	100.0	0	0.0
Govt HC	73	73.0	27	27.0
Mission/Private HC	5	100.0	0	0.0
Total	103	75.7	33	24.3

Table C.5. General Cleanliness of Facility

	Yes	Row %	No	Row %
Govt Hosp	26	96.3	1	3.7
Mission/Private Hosp	4	100.0	0	0.0
Govt HC	85	85.0	15	15.0
Mission/Private HC	5	100.0	0	0.0
Total	120	88.2	16	11.8

**Table C.6. Visual/Auditory Privacy for FP Counseling
(defined as room with a door)**

	Yes	Row %	No	Row %
Govt Hosp	22	81.5	5	18.5
Mission/Private Hosp	3	75.0	1	25.0
Govt HC	82	83.0	18	18.0
Mission/Private HC	5	100.0	0	0.0
Total	112	82.4	24	17.6

Appendix D: SUPPLIES

Table D.1. Meets CDC guideline for having 7.5 combined oral pill packets per new user

	Yes	Row %	No	Row %
Govt Hosp	6	22.2	21	77.8
Mission/Private Hosp	1	25.0	3	75.0
Govt HC	11	11.0	89	89.0
Mission/Private HC	1	20.0	4	80.0
Total	19	14.0	117	86.0

Table D.2. Meets CDC guideline for having 7.5 progesterone pill packets per new user

	Yes	Row %	No	Row %
Govt Hosp	0	0.0	27	100.0
Mission/Private Hosp	0	0.0	4	100.0
Govt HC	0	0.0	100	100.0
Mission/Private HC	0	0.0	5	100.0
Total	0	0.0	136	100.0

Table D.3. Meets CDC guideline for having 2 units of injectable per new user

	Yes	Row %	No	Row %
Govt Hosp	22	81.5	5	18.5
Mission/Private Hosp	2	50.0	2	50.0
Govt HC	68	68.0	32	32.0
Mission/Private HC	3	60.0	2	40.0
Total	95	69.9	41	30.1

Table D.4. Meets CDC guideline for having 60 condoms per new user

	Yes	Row %	No	Row %
Govt Hosp	0	0.0	27	100.0
Mission/Private Hosp	1	25.0	3	75.0
Govt HC	10	10.0	90	90.0
Mission/Private HC	0	0.0	5	100.0
Total	11	8.1	125	91.9

Table D.5. Combined Oral Pill Stock-out in last 6 months

	N (# facilities)	Yes	%	No	%
Govt Hosp	25	3	12.0	22	88.0
Mission/Private Hosp	4	0	0.0	4	100.0
Govt HC	91	3	3.3	88	96.7
Mission/Private HC	5	1	20.0	4	80.0
Total	125	7	0.06	118	0.94

Table D.6. Progesterone Oral Pill Stock-out in last 6 months

	N (# facilities)	Yes	%	No	%
Govt Hosp	23	4	17.4	19	82.6
Mission/Private Hosp	3	0	0.0	3	100.0
Govt HC	69	11	15.9	58	84.1
Mission/Private HC	5	0	0.0	5	100.0
Total	100	15	15.0	85	85.0

Table D.7. 2-3 Monthly Injectable Stock-out in last 6 months

	N (# facilities)	Yes	%	No	%
Govt Hosp	25	4	16.0	21	84.0
Mission/Private Hosp	4	0	0.0	4	100.0
Govt HC	91	8	8.8	83	91.2
Mission/Private HC	5	0	0.0	5	100.0
Total	125	12	0.1	113	90.4

Table D.8. 1-Month Injectable Stock-out in last 6 months

	N (# facilities)	Yes	%	No	%
Govt Hosp	23	3	13.0	20	87.0
Mission/Private Hosp	4	3	75.0	1	25.0
Govt HC	78	8	10.3	70	89.7
Mission/Private HC	5	1	20.0	4	80.0
Total	110	15	13.6	95	86.4

Table D.9. Male Condom Stock-out in last 6 months

	N (# facilities)	Yes	%	No	%
Govt Hosp	25	2	8.0	23	92.0
Mission/Private Hosp	4	1	25.0	3	75.0
Govt HC	85	8	9.4	77	90.6
Mission/Private HC	5	0	0.0	5	100.0
Total	119	11	0.09	108	90.8

**For Tables C.5 through C.9, facilities were only asked about a stock-out of the method if they previously reported offering the method.

Table D.10. Natural FP Counseling Provided

	Yes	%	No	%
Govt Hosp	19	70.4	8	29.6
Mission/Private Hosp	4	100.0	0	0.0
Govt HC	69	69.0	31	32.0
Mission/Private HC	4	80.0	1	20.0
Total	96	70.6	40	29.4

Appendix E: EQUIPMENT

Table E.1. Has at least one protocol

	Yes	Row %	No	Row %
Govt Hosp	24	88.9	3	11.1
Mission/Private Hosp	2	50.0	2	50.0
Govt HC	66	66.0	34	34.0
Mission/Private HC	4	80.0	1	20.0
Total	96	29.4	40	70.6

Table E.2. Has at least one visual aid

	Yes	Row %	No	Row %
Govt Hosp	27	100.0	0	0.0
Mission/Private Hosp	4	100.0	0	0.0
Govt HC	97	97.0	3	3.0
Mission/Private HC	5	100.0	0	0.0
Total	133	97.8	3	2.2

Table E.3. Sharps Container

	Yes	Row %	No	Row %
Govt Hosp	25	92.6	2	7.4
Mission/Private Hosp	2	50.0	2	50.0
Govt HC	72	72.0	28	28.0
Mission/Private HC	5	100.0	0	0.0
Total	104	76.5	32	23.5

Table E.4. Facility has 3 of 4 basic items for a routine exam

	Yes	Row %	No	Row %
Govt Hosp	22	81.5	5	18.5
Mission/Private Hosp	2	50.0	2	50.0
Govt HC	64	64.0	36	36.0
Mission/Private HC	4	80.0	1	20.0
Total	92	67.6	44	32.4

Appendix F: List of all facilities meeting the criteria for facility readiness

Table F.1. List of hospitals meeting the criteria by region

Hospital	Region
KUMASI REGIONAL HOSPITAL	ASHANTI
MANKRANSO HOSPITAL	ASHANTI
ABURA DUNKWA HOSPITAL	CENTRAL
SWEDRU GOV'T HOSPITAL	CENTRAL
CAPE COAST DISTRICT HOSPI	CENTRAL
WINNEBA HOSPITAL	CENTRAL
NEW JUABEN REGIONAL HOSPITAL	EASTERN
ODA GOVT. HOSPITAL	EASTERN
LA GENERAL HOSPITAL	GREATER ACCRA
RIDGE HOSPITAL	GREATER ACCRA
ADIDOME HOSPITAL	VOLTA
NKWANTA DISTRICT HOSPITAL	VOLTA
BATTOR HOSPITAL*	VOLTA
BIBIANI GOV'T HOSPITAL	WESTERN
WESTERN REGIONAL HOSPITAL	WESTERN

*Denotes Mission Hospital

Table F.2. List of health centers meeting the criteria by region

Health Center	Region
JACHIE HEALTH CENTRE	ASHANTI
ABAKRAMPA HEALTH CENTRE	CENTRAL
AGONA KWANYAKO HEALTH CEN	CENTRAL
ANOMABU HEALTH CENTRE	CENTRAL
BAWJIASE HEALTH CENTRE	CENTRAL
BRAKWA HEALTH CENTRE	CENTRAL
ELMINA URBAN HEALTH CENT	CENTRAL
EWIN URBAN HEALTH CENTRE	CENTRAL
MOKWA HEALTH CENTRE	CENTRAL
NASABA HEALTH CENTRE	CENTRAL
NKUM HEALTH CENTRE	CENTRAL
NYAKROM HEALTH CENTRE	CENTRAL
OBUASI HEALTH CENTRE	CENTRAL
ODOBEN HEALTH CENTRE	CENTRAL
NEW ABIRIM HEALTH CENTRE	EASTERN
DODOWA HEALTH CENTRE	GREATER ACCRA
AKATSI HEALTH CENTRE	VOLTA
DABALA HEALTH CENTRE	VOLTA
DODO-AMANFROM H/C	VOLTA
JUAPONG HEALTH CENTRE	VOLTA
KADJEBI HEALTH CENTRE	VOLTA
PAMPAWIE HEALTH CENTRE	VOLTA
Anhwianso Health Centre	WESTERN
Asawinso Health Centre	WESTERN

Appendix G: List of all facilities included in the study, by region

Table G.1. List of hospitals by region (n=31)

Hospital	Region
KUNTANASE HOSPITAL	ASHANTI
KUMASI REGIONAL HOSPITAL	ASHANTI
MANKRANSO HOSPITAL	ASHANTI
ATEBUBU DISTRICT HOSPITAL	BRONG AHAFO
SUNYANI REGIONAL HOSPITAL	BRONG AHAFO
ABURA DUNKWA HOSPITAL	CENTRAL
AJUMAKO HOSPITAL	CENTRAL
ANKAFUL GENERAL HOSPITAL	CENTRAL
C.R.H	CENTRAL
CAPE COAST DISTRICT HOSPI	CENTRAL
DUNKWA OFFIN HOSPITAL	CENTRAL
SALTPONG HOSPITAL	CENTRAL
SWEDRU GOV'T HOSPITAL	CENTRAL
TWIFU PRASO HOSPITAL	CENTRAL
WINNEBA HOSPITAL	CENTRAL
NEW JUABEN REGIONAL HOSPITAL	EASTERN
ODA GOVT. HOSPITAL	EASTERN
PRESBY HOSPITAL	EASTERN
LA GENERAL HOSPITAL	GREATER ACCRA
RIDGE HOSPITAL	GREATER ACCRA
ADIDOME HOSPITAL	VOLTA
BATTOR HOSPITAL	VOLTA
HO REGIONAL HOSPITAL	VOLTA
MARY THERESA HOSPITAL	VOLTA
NKWANTA DISTRICT HOSPITAL	VOLTA
SOGAKOPE HOSPITAL	VOLTA

Table G.2. List of health centers by region (n=105)

Health Center	Region
AHENEMA HEALTH CENTRE	ASHANTI
ANTOAKROM HEALTH CENTRE	ASHANTI
DORA'S MAT. CLINIC	ASHANTI
FOASE HEALTH CENTRE	ASHANTI
JACHIE HEALTH CENTRE	ASHANTI
KWANWOMA HEALTH CENTRE	ASHANTI
MANSO ABORE HEALTH CENTRE	ASHANTI
MANSO HEALTH CENTRE	ASHANTI
POKUKROM HEALTH CENTRE	ASHANTI
TETREFU HEALTH CENTRE	ASHANTI
ACHIRENSUA HEALTH CENTRE	BRONG AHAFO
AYEDU HEALTH CENTRE	BRONG AHAFO
DADIESOABA HEALTH CENTRE	BRONG AHAFO
KNEYASI HEALTH CENTRE	BRONG AHAFO
KOJOKROM HEALTH CENTRE	BRONG AHAFO

Health Center	Region
Kwame Danso Health Centre	BRONG AHAFO
ABAASA HEALTH CENTRE	CENTRAL
ABAKRAMPA HEALTH CENTRE	CENTRAL
ABEASE HEALTH CENTRE	CENTRAL
ADISADEL HEALTH CENTRE	CENTRAL
AGONA KWANYAKO HEALTH CEN	CENTRAL
AJUMAKO KWANYAKO HEALTH C	CENTRAL
ANOMABU HEALTH CENTRE	CENTRAL
ASSIN BERAKU HEALTH CENTR	CENTRAL
ASUASI RURAL CLINIC	CENTRAL
AWUTU BERAKU HEALTH CENTR	CENTRAL
BA SALVATION ARMY CLINIC	CENTRAL
BAWJIASE HEALTH CENTRE	CENTRAL
BEDUM COMMUNITY CLINIC	CENTRAL
BISEASE HEALTH CENTRE	CENTRAL
BOBIKUMA HEALTH CENTRE	CENTRAL
BRAKWA HEALTH CENTRE	CENTRAL
BUDUATTA HEALTH CENTRE	CENTRAL
DIASO HEALTH CENTRE	CENTRAL
ELMINA URBAN HEALTH CENT	CENTRAL
ENYINABRIM HEALTH CENTRE	CENTRAL
ESSUEHYIA HEALTH CENTRE	CENTRAL
EWIN URBAN HEALTH CENTRE	CENTRAL
HEMANG HEALTH CENTRE	CENTRAL
JAKAI HEALTH CENTRE	CENTRAL
JUKWA HEALTH CENTRE	CENTRAL
KISSI HEALTH CENTRE	CENTRAL
KOMENDA HEALTH CENTRE	CENTRAL
KUSHIA HEALTH CENTRE	CENTRAL
Mankrong Health Centre	CENTRAL
MOKWA HEALTH CENTRE	CENTRAL
MOREE HEALTH CENTRE	CENTRAL
NASABA HEALTH CENTRE	CENTRAL
NKUM HEALTH CENTRE	CENTRAL
NKWANTANUM HEALTH CENTRE	CENTRAL
NYAKROM HEALTH CENTRE	CENTRAL
OBUASI HEALTH CENTRE	CENTRAL
ODOBEN HEALTH CENTRE	CENTRAL
OGUAA HEALTH CENTRE	CENTRAL
OPONSO HEALTH CENTRE	CENTRAL
OTUAM HEALTH CENTRE	CENTRAL
PRASO BRESY HEALTH CENTRE	CENTRAL
SUBIN CLINIC	CENTRAL
AMVANA PRASO CLINIC	EASTERN
AYIREBI HEALTH CENTRE	EASTERN
KWASE FANTE HEALTH CENTRE	EASTERN
NEW ABIRIM HEALTH CENTRE	EASTERN
TEASE HEALTH CENTRE	EASTERN
DODOWA HEALTH CENTRE	GREATER ACCRA

Health Center	Region
NINGO HEALTH CENTRE	GREATER ACCRA
PRAMPAM HEALTH CENTRE	GREATER ACCRA
ADUTOR HEALTH CENTRE	VOLTA
AHAMANSU HEALTH CENTRE	VOLTA
AKATSI HEALTH CENTRE	VOLTA
AVENORPEME HEALTH CENTRE	VOLTA
BREWENIASE HEALTH CENTRE	VOLTA
DABALA HEALTH CENTRE	VOLTA
DAMANKO HEALTH CENTRE	VOLTA
DODO-AMANFROM H/C	VOLTA
DOFOR HEALTH CENTRE	VOLTA
DORDOEKOPE HEALTH CENTRE	VOLTA
FORZOKU HEALTH CENTRE	VOLTA
JUAPONG HEALTH CENTRE	VOLTA
KADJEBI HEALTH CENTRE	VOLTA
KECHBI HEALTH CENTRE	VOLTA
KPASSA HEALTH CENTRE	VOLTA
KPOTAME HEALTH CENTRE	VOLTA
KPOVIADZI HEALTH CENTRE	VOLTA
MAFI HEALTH CENTRE	VOLTA
MAFI HEALTH CENTRE	VOLTA
PAMPAWIE HEALTH CENTRE	VOLTA
PODOE HEALTH CENTRE	VOLTA
TEFLE HEALTH CENTRE	VOLTA
TORGOME HEALTH CENTRE	VOLTA
TUTUKPENI HEALTH CENTRE	VOLTA
VOLO HEALTH CENTRE	VOLTA
ABURA HEALTH CENTRE	WESTERN
AGONA HEALTH CENTRE	WESTERN
Anhwianso Health Centre	WESTERN
APOWA HEALTH CENTRE	WESTERN
Asawinso Health Centre	WESTERN
BEKWAI HEALTH CENTRE	WESTERN
EGYAMBRA HEALTH CENTRE	WESTERN
ESSAM GOV'T HEALTH CENTRE	WESTERN
FASIN HEALTH CENTRE	WESTERN
Humjibre Health Centre	WESTERN
KWASIKROM HEALTH CENTRE	WESTERN
MMREWA HEALTH CENTRE	WESTERN
PRINCESS HEALTH CENTRE	WESTERN
RURAL HEALTH CENTRE	WESTERN