

Family planning and reproductive health supply stockouts: problems and remedies for faith-based health facilities in Africa

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Abstract

Background and aims: Faith-based organizations (FBOs) provide a substantial portion of the health care services in many African countries. FBO facilities do consider family planning and reproductive health services as essential to reducing maternal and child mortality, and to the growth of healthy families. Many health facilities, however, struggle to maintain adequate stocks of reproductive health (RH) supplies because of the various RH supply chains and funding sources, which often operate separately from other medicines and supplies. The purpose of this study is to identify the types of supply chain systems used by African faith-based health facilities to acquire reproductive health products (clotrimazole, combined oral contraceptive pills, contraceptive implants, CycleBeads®, emergency contraception, Erythromycin, female condoms, injectable contraceptives, intra-uterine contraceptive devices, magnesium sulfate, male condoms, Methyldopa, Miso-prostol, Nifedpine, Oxytocin, and Progestin-only pills), to describe their problems and challenges, and to identify possible corrective actions.

Methods: Through email surveys, phone interviews, and on-site visits, we studied the supply chains of 46 faith-based health facilities in 13 African countries. Sixteen RH commodities, including contraceptives, were selected as indicators.

Results: Of the 46 facilities surveyed, 55 percent faced stockouts of one or more products in the three months prior to the survey. Stockouts were less common for contraceptives than for other RH products. Significant strengths of the FBO supply chain included creativity in finding other sources of commodities in the face of stockouts, staff designated to monitor quality of the commodities, high capacity for storage, low incidence of expired products, few instances of poor quality, and strong financial sustainability mechanisms, often including patient fees. Weaknesses included unreliable commodity sources and power supplies, long distances to depots, and problems maintaining the cold chain.

Conclusions: By studying the supply chains of faith-based health facilities, Christian Connections for International Health (CCIH) and its members have created new awareness among FBOs and international agencies of the importance and challenges of these systems and have suggested actions toward improvement. The Alliance of Christian Faith-Based Organizations for Family Planning (ACFBOFP) formed in Cameroon to strengthen commodity security may be a good model for other FBOs to consider. Cost recovery models with stronger quantification and forecasting systems, including trained staff, can help meet the FP and RH needs of families and can help assure the long-term sustainability of FBO health systems. This study can serve as a frame of reference as we move forward, anticipating an acceleration in interest to strengthen FBO supply chains to reach as many communities as possible with available, quality supplies and services.

Introduction

Christian Connections for International Health (CCIH), a global network of Christian health organizations, conducted a survey in 2008 among its members about their family planning and reproductive health (FP/RH) activities.¹ One striking finding was their frequent mention of difficulties in ensuring steady supplies of important FP/RH items. To help them address these problems, CCIH collaborated with John Snow, Inc., to produce a simple guide² and webinar³ about how to get RH supplies for health facilities. In 2014, after years of qualitative reports from faith-based facilities, and in order to document how faith-based hospitals and clinics procure and distribute FP/RH supplies, CCIH undertook an investigation focused on a more thorough understanding of supply chain systems and overall commodity security among Christian health facilities in Africa, funded by the Reproductive Health Supplies Coalition (RHSC).⁴

Goals and Objectives

The goals of the study were to understand the supply chain systems of FBOs in Africa, including the stockouts and challenges they faced, and to recommend possible solutions. The objectives were to describe the basic characteristics and challenges of the supply chains at the service-delivery level; to deepen understanding of the types of supply chains used to access vital supplies for family planning and reproductive health (FP/RH) activities; to identify potential partners; and to design strategic interventions to improve FP/RH supply availability at the service-delivery level.

Methods

Data collection was conducted between October 2014 and February 2015 in three phases: email surveys, phone interviews, and country visits. All phases focused on key drivers of commodity security, including the following:

- Sources used by FBO facilities to obtain FP/RH products, *i.e.*, Ministry of Health (MOH)

depots, faith-based supply organizations (FBSO) (broadly referenced pharmaceutical depots operated by faith-based organizations), other sources (*i.e.*, retail pharmacies, wholesalers, social marketing depots), and international sources (*i.e.*, international funders, donor-funded projects, international non-governmental organizations).

- Nature of transactions between the FBO facilities and their suppliers.
- Different types of supply chains and the risk of stockouts associated with each type.
- Facility practices for inventory and storage of products.
- Training of staff responsible for logistics and management of supplies.
- Financing for FP/RH supplies and logistics.
- Institutional and contextual factors influencing the availability of products.

The list of RH products used in this study (see Figure 1) was based on the resource “Essential Medicines for Reproductive Health”⁵ from World Health Organization (WHO), PATH, and the United Nations Population Fund (UNFPA). Essential Medicine Lists (EMLs) were determined by committees appointed by WHO to include medicines that provided safe, effective treatments and were needed to guide a country’s national drug policy to ensure access, quality, and rational use. In most countries, the Ministry of Health (MOH) elected a committee to determine the list for their country, guided by the WHO EMLs. Survey questions were influenced by the “Guide to Conducting Supply Chain Assessments”⁶ from the USAID DELIVER Project.

Part 1: email survey⁷

The survey was written and pretested in English and French. In collaboration with the national health offices of faith groups in 20 African countries, the researchers developed a list of 120 potential FBO health facilities. They then corresponded by email directly with the health facilities, first contacting the medical director, then identifying and corresponding with the staff member responsible for FP/RH

Figure 1. Reproductive health products

Clotrimazole
 Combined oral contraceptive pills
 Contraceptive implants*
 CycleBeads®**
 Emergency contraception
 Erythromycin
 Female condoms
 Injectable contraceptives
 Intra-uterine contraceptive devices
 Magnesium sulfate
 Male condoms
 Methyldopa
 Nifedipine
 Oxytocin
 Progestin-only pills

*Implants added to the list as they are a commonly used FP method

**CycleBeads® added to this list as they are a natural form of FP

supplies. (Exceptions were made for some remote facilities without internet access. In these cases, the central FBO health office printed the survey, sent it to the facility, then collected it and sent the replies by email to the researchers). Each respondent gave informed written consent for participation. The survey asked about the sources and suppliers from which the facility obtained FP/RH items, the characteristics of supply storage at the service-delivery level, and recent stockouts of selected products.

Part 2: phone interviews⁷

Investigators conducted follow-up phone interviews with a subset of 16 of the survey respondents in six countries, representing diverse Christian groups (Baptist, Methodist, Catholic, Pentecostal, Presbyterian, etc.), that also had high levels of reported stockouts. The purpose was to clarify and explore further the details of their supply chains, and to understand why stockouts occurred and how they could be prevented. The phone interview guide was

written in English and French. Some questions for the phone interviews were extracted from existing international logistics assessments; others explored in more detail the responses to the email survey. Verbal informed consent was required from each participant at the start of the phone interview.

Part 3: country visits

The purpose of the country visits was to gain more detailed understanding of the situations and challenges of a range of FBO facilities in two different countries, to explore key factors beyond the facilities (at higher levels of the supply chains), and to inform future supply chain interventions. Three regions of Cameroon (13 meetings) and two regions of the Democratic Republic of the Congo (DRC) (17 meetings) were selected for in-person site visits, as they had high levels of study participation and had different types of supply chains. Field visits were conducted by a consultant fluent in English and French who had lived for extended periods in both countries. In each country, visits included health institutions (many of which had participated in the email surveys and phone interviews), national-level FBO coordinating offices, warehouses of health commodity suppliers, and officials of the Ministry of Health and UNFPA.

Results

Characteristics of FBO health facility respondents

Of the 120 facilities contacted in 20 countries, 46 facilities from 13 countries responded to the email survey. Participating countries included Cameroon, Central African Republic (CAR), Chad, Democratic Republic of the Congo, Ethiopia, Kenya, Malawi, Niger, Nigeria, Tanzania, Uganda, Zambia, and Zimbabwe. Table 1 shows the principal characteristics of the facilities surveyed and Figure 2 shows survey responses by country.

Services provided and service fees

All 46 faith-based health facilities provided antenatal care services (Figure 3), and all but two provided family planning services to their patients. Half the facilities charged patients fees for FP services, while nearly all of them charged for delivering babies.

Survey respondents reported an average of 9.7 family planning patients seen per day in their faith-based health facility. The smaller facilities reported a higher number of FP patients per day (13.6) than the medium (5.8) and large (7.2) facilities. Rural facilities reported a larger average number of FP patients per day (12) than urban facilities (6). Post-abortion care (PAC) was provided by some facilities for women experiencing miscarriage or complications from an induced abortion. Unintended pregnancy, which was the root cause of induced abortion, could result from lack of supplies, contraceptive failure, non-use, lack of knowledge, and other factors. Emergency treatment and post-abortion family planning were part of PAC services; the latter helped prevent future unintended pregnancies and abortions.⁸

Management, sources, and availability of FP/RH supplies

Logistics management of commodities was overseen primarily by clinical staff; only one FBO facility had a professional logistician. The survey asked each facility about 16 selected FP/RH items

and about their suppliers (in-country and out-of-country).

- Twelve of the 16 RH products were used by at least 80 percent (37) of the FBO facilities. These were male condoms, injectable contraceptives, combined and progestin-only oral contraceptives, contraceptive implants, erythromycin, clotrimazole, magnesium sulfate, methyldopa, misoprostal, nifedipine, and oxytocin.
- Among contraceptives, CycleBeads® were the least commonly offered, by only 17 of 46 surveyed facilities. Intra-uterine devices (IUDs) were next, being offered by 30 facilities.
- The MOHs (compared to FBSOs, international sources, or other sources) were the most common suppliers of oral contraceptive pills and CycleBeads®. In fact, 50 percent or more of the facilities reported that their MOH supplied all their contraceptive products, with the exception of IUDs.
- For non-contraceptive RH products, depots of FBSOs were the principal sources.

Table 1. Characteristics of Facilities Responding to the Email Survey

Characteristic	N	Percent of Responding facilities
Language		
Anglophone	29	63%
Francophone	17	37%
Type*		
Health Center	17	37%
Hospital	29	63%
Location**		
Urban	15	33%
Rural	30	67%
Size***		
Small	20	45%
Medium	13	30%
Large	9	20%
Very Large	3	7%

*Location: Missing location data for one facility (urban vs. rural)
 **Type: Countries with just one facility response were left out of the graph
 *** Staff size: Small= <30; Medium: 31-100; Large: 101-300; Very Large: >300

Figure 2

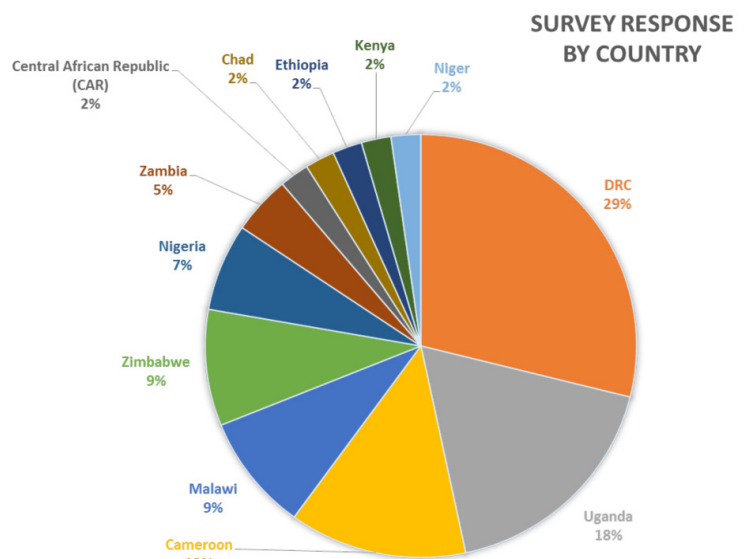
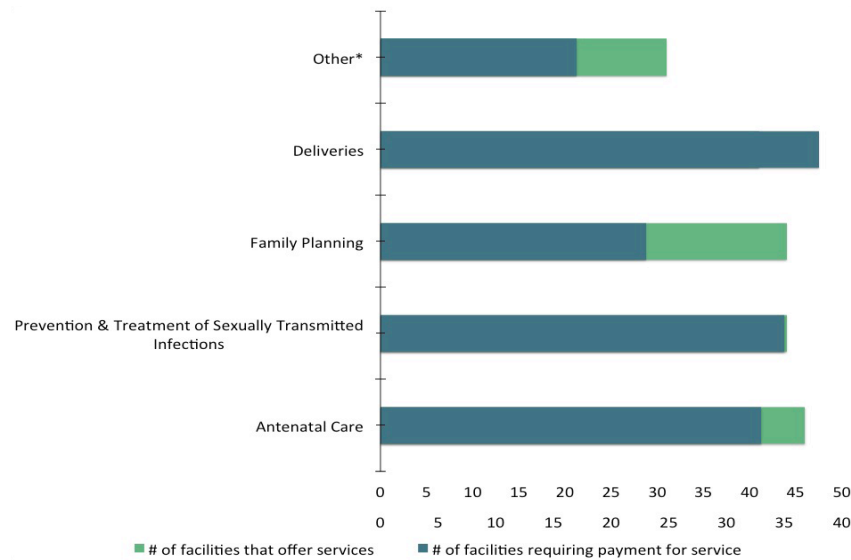


Figure 3: FP/RH services offered and patient payments (n=46 FBO health facilities)



* Other health services mentioned by respondents: breast cancer screening, cervical cancer screening, deliveries, postnatal care, post-abortion care

- Only one product (misoprostol) was received mainly from “other” in-country sources (neither MOH nor FBSOs).
- Contraceptive implants and misoprostol were the two products most commonly out of stock on the day of the survey (Figure 4).
- When facilities were asked whether they would like to be connected with other suppliers of contraceptives, most facilities readily responded, “Yes.” One in Cameroon responded “Yes. Supplies have been stable in the past few months, but we have had stockouts in times past. Other sources will further stabilize our supply and might even be cheaper, reducing cost, which presently acts as a barrier for a significant proportion of our potential clients.” A large rural hospital in Uganda said it had missed opportunities when they did not have supplies. “If a woman comes for contraceptives and we don’t have them, we miss an opportunity to provide for her,” a hospital representative said. A Kenyan facility staff said, “Oxytocin, received from a commercial supplier, was not

working. We injected it, but it was not working. We had to buy another expensive type. We informed the supplier of the problem; they acknowledged it and we took it back. We got a new supply from another supplier.”

A closer look — country visits

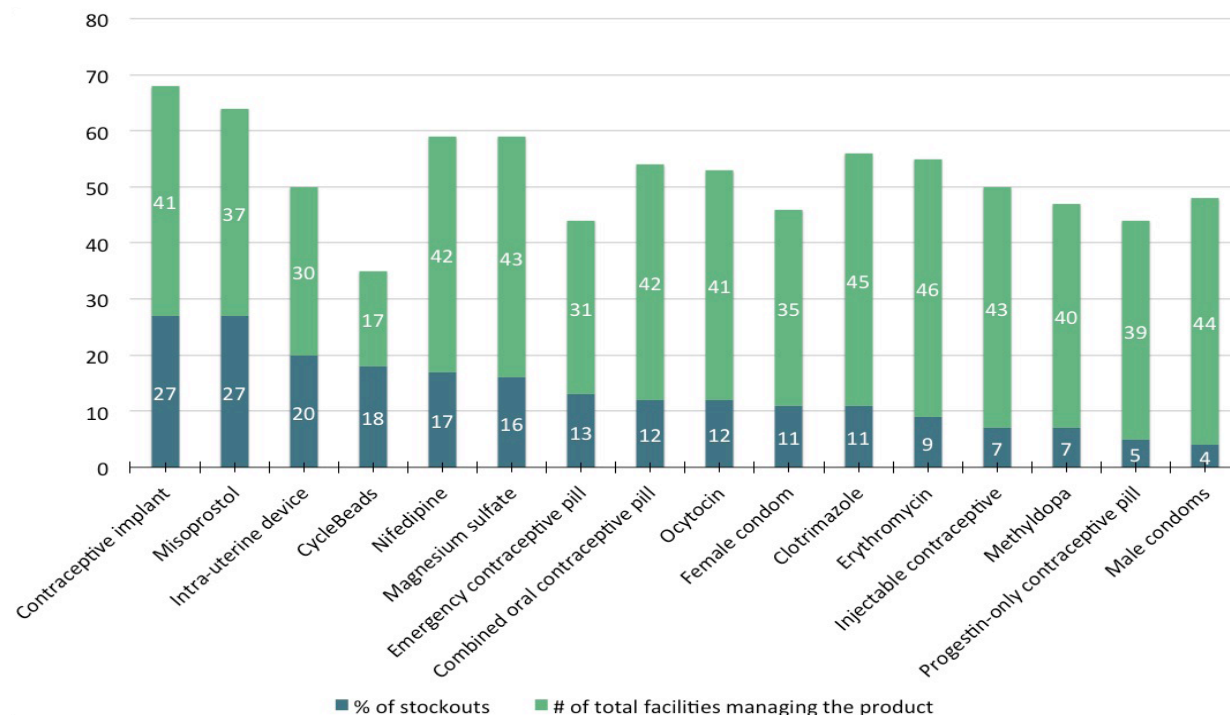
Country visits early in 2015 aimed to document in more detail the context of faith-based health supply systems, the current range of suppliers of commodities to FBO health facilities, and FBO relationships with their ministries of health and international donors.

Case study 1: Cameroon

The field investigator had contact with health facilities and depots located in three provinces and managed by four FBO groups, the health division of the Cameroon Council of Protestant Churches (a countrywide network), the MOH, and UNFPA. The faith-based groups in Cameroon followed MOH guidelines and procedures, but each group procured and managed health supplies on its own. The Cameroon Baptist Convention Health Services (CBCHS) had a large central pharmacy depot, with satellite depots supplying 6 hospitals and 80 health centers in many parts of the country. The Presbyterian Church of Cameroon (PCC), the *Eglise Evangélique du Cameroun* (EEC) (Evangelical Church of Cameroon), and the *Eglise Evangélique Luthérienne* (Evangelical Lutheran Church of Cameroon) in northern Cameroon were also operating numerous health facilities and depots.

The FBSOs in Cameroon ran depots and purchased medicines (including oxytocin, misoprostol, etc.) from varied sources: some from MOH depots, some from overseas shippers, and some from local pharmaceutical companies. The FBSO depots then sold

Figure 4: Number of facilities and percent stocked out on the day of the survey



products to their own networks of hospitals and health centers (though they reported not always receiving prompt payment from their health facilities). The FBO hospitals and health centers charged patients for these medicines and services.

For contraceptive supplies, on the other hand, Cameroonian FBOs depended almost entirely on the Ministry of Health. Since the MOH obtained contraceptives free of charge from the United Nations Population Fund, FBO facilities were not allowed to charge patients for those FP commodities (though they could charge for related services, such as insertion of an implant or an IUD). Health facilities mentioned numerous recent stockouts of contraceptives, particularly implants. In a few stockout episodes, the FBOs reported that they had purchased contraceptives from the national social marketing association and then had to charge patients to offset the costs.

Case study 2: Democratic Republic of the Congo (DRC)

Site visits in DRC were in two mountainous, landlocked eastern provinces (North Kivu and South Kivu). They included rural and urban health facilities, drug depots (faith-based and regional), the social marketing agency, the MOH, and UNFPA. The DRC health system is based on the country’s 516 well-defined health zones (HZ). Within a given HZ, the hospitals and health centers are owned and operated by varying groups, such as the MOH, one or more FBOs, or community groups; they were all expected to collaborate in health zone planning, administrative procedures, and supply procurement. Each of the country’s nine administrative provinces had one or more approved depots for medical supplies operated by the MOH, by an FBO, or by another registered group. International health agencies and other donor organizations, including faith-based donors, were strongly encouraged to work within the depot system and the HZ system, and to

collaborate with each zone's own plans and procedures.

They included HZ offices, health facilities, depots (faith-based and regional), the social marketing agency, MOH, and UNFPA. The standard process for obtaining medicines and supplies (including FP/RH commodities) was as follows:

- The central office of each HZ compiled monthly service reports and also commodity orders from all its health centers and hospitals.
- The HZ central depot then placed a combined order from an approved pharmaceutical depot.
- When the supplies arrived, the HZ depot notified the facilities, and each facility sent their own motorcycle or vehicle, or they rented a vehicle, to pick up their supplies and medicines.

All health facilities (government, church-based, or private) charged patients for procedures and for medicines. Exceptions included certain products that were entirely funded by the MOH and/or international donor programs (immunizations, mosquito nets, tuberculosis tests and medicines, HIV/AIDS tests and medicines, and contraceptives). These fully funded products were provided to the public without charge, though health facilities were allowed to charge only for related services, such as insertion of contraceptive implants or IUDs.

The site visits confirmed that most FP/RH products came from Europe, India, or the USA, sometimes by air, but usually via ocean, then by truck overland to the regional depots. Most FBO health facilities used multiple sources for their RH supplies: primarily the depot of their own health zone, then (when necessary) their regional depot, commercial pharmacies, or a social marketing organization.

Discussion

In the 13 African countries and 46 faith-based health facilities studied, the differences within and among countries, in how they accessed FP/RH supplies and how they managed logistics practices and stockouts, had different strengths and challenges but certain patterns were evident. While FBO health facilities

obtained RH medicines from a variety of sources, 50 percent or more of the FBO facilities reported that nearly all their contraceptive products came through the MOH supply system. This provided an overwhelming challenge if and when the MOH supplies were unavailable or the quantity was insufficient to serve both government and faith-based health facilities. Managing FP/RH commodities through an inconsistent source of supplies reduced the ability of the FBO facilities to consistently offer a full range of services and choices to their patients. The strengths, challenges, and possible interventions discussed below attempt to address the variety of logistical issues in FP/RH supply chain systems. The aim was to ensure whether the right product was adequately stocked at the right place and at the right price for everyone in their community.

1. Ordering FP/RH supplies

Generally, hospitals and health centers made their own ordering decisions for FP/RH products using standard logistics tools. Exceptions occurred in some facilities completely dependent on the MOH (and occasionally on other donors) where the supplier decided on the quantities the facility received.

Strengths: Most FBO facilities considered safety stocks when determining quantities to order, funds permitting. Safety stocks are defined by the USAID DELIVER project as “The additional buffer, cushion, or reserve stock kept on hand to protect against stockouts caused by delayed deliveries, markedly increased demand, or other unexpected events. The safety stock is expressed in number of months of supply, which can also be converted into a quantity.”⁹

Challenges: Fifty-five percent of surveyed facilities experienced stockouts of contraceptives in the three months prior to the email survey, though most had found other sources or substituted other products. While the ingenuity of the facilities is commendable, it is not ideal, as it reduces the facilities' ability to consistently offer a full range of choice to patients. Ordering practices were also inconsistent for FBO facilities, in large part due to irregular supply and/or unpredictable deliveries from sources. Facilities

that could not rely on a consistent source of supply for products were more likely to say they did not consider safety stocks in their inventory. Some facilities said they received products that were not what they ordered or needed. Two facilities that used out-of-country sources reported that supplier stock-outs and time-consuming customs procedures were major hurdles; these problems may prevent many FBOs from considering low-cost, high-volume purchases of FP/RH commodities from international sources. Also, we must wonder if after counseling on all methods, whether the patient's choice of FP method was influenced by what was available in the facility vs. the method they wanted as their first choice, which was unavailable. Also, supply-related bottlenecks such as cost (cost for governments and organizations to procure and distribute methods, and possible costs to the patients) may prevent patients from obtaining and using their methods of choice. FBOs and all health facilities should counsel patients on all FP methods so patients may choose the best method for them. At the same time, FBO health facilities must advocate with their governments and drug supply organizations to obtain products at a low overall cost per year so the systems are sustainable (including cost-recovery, noted below) and costs to patients are realistic and accessible.

2. Cost recovery and financing

Overall, the main source of financing in African FBO health facilities was patient fees, followed by external funding or donations, and subsidies from the Ministry of Health (in the form of salary payments to some staff members, or direct budget subsidies). Responses about fees charged to patients varied widely. Many facilities charged patients for RH medicines, depending on the source of supply. On the other hand, for contraceptives, if the MOH gave them free to a health facility, the facility was typically not permitted to charge patients for the product (though some were allowed to charge for procedures when inserting IUDs and contraceptive implants).

Strengths: The most sustainable supply systems seemed to occur in the facilities with a single faith-based source of all FP/RH products, including

contraceptives, and where patients paid something for all products.

Challenges: A few facilities noted that contraceptives (especially long-term methods) purchased from FBSOs were “too expensive,” compared to those provided free by the MOH or from international organizations. One facility mentioned having a substantial debt burden with its FBSO. Even if FP/RH commodities were funded by international organizations (*i.e.*, USAID, UNFPA), many other costs were incurred in getting the items to the people who needed them. In order to provide contraceptives and other RH supplies sustainably, warehouses run by the MOH or by an FBO need to be able to recover their costs (for the products, customs charges, transport, their personnel, and related services). FBO health facilities, in turn, must cover costs of their personnel and of commodity transport and storage. At the final service delivery point, the prices charged to the patients (for the product and/or related services) must be low enough for the majority of their patients to afford. If FBOs are not allowed to charge any fees, they will sooner or later have serious financing problems. The challenge is to find models of FBOs or other non-governmental organizations in Africa or other parts of the world that have successfully addressed the issue of long-term sustainability. We noted that rural, small FBO facilities in this survey served more FP patients than urban, large facilities, where people had a wider choice of health facilities and pharmacies to obtain their contraceptives. Thus it is essential that staff at smaller facilities be trained to store products properly, to conduct quantification and forecasting, and to provide quality services to their patients. Small, rural facilities face particular problems: Are travel funds available to send staff for trainings on quantification and forecasting? Who will do their job (or multiple jobs) while they are away? Consistent pay schemes must be in place to maintain the trust of the patient, and having variations in pay, depending on the ability or inability of the MOH to provide reliable products, is an issue to consider and overcome. The ability of an FBO to change its suppliers and/or practices will depend upon relationships with the suppliers, ordering

practices, cost of commodities, and the distance and transportation involved. We did not assess why some products were included in some facilities and not in others; presumably such factors as treatment priorities, cost, availability, client preferences, and training all played a role.

3. FBO supply and pipeline management

In any faith-based system, planners must analyze:

- whether the principal public-sector source has mobilized adequate financing to supply subsidized products in a timely fashion to FBOs,
- whether the FBSO and FBO facilities have access to competitive and high-quality sources,
- whether good logistics management practices are in place through the whole supply chain, and whether their staff is trained,
- the strength of the relationship between FBOs and the supply sources, and
- the FBO's influence in the relationship (either individually or as part of a collective).

Finally, we can suggest potential areas of intervention for the two countries studied most closely: Cameroon and the Democratic Republic of the Congo.

Seven Cameroonian faith-based organizations started meeting in early 2016 with an initial introduction to the SMART family planning advocacy framework from Advance Family Planning.¹⁰ They developed group goals and objectives to move forward as a group of Cameroonian FBOs to reduce stockouts in their facilities. They then formally organized themselves as the Alliance of Christian Faith-Based Organizations for Family Planning (ACFBOFP) and registered with the government.¹¹ This group developed a constitution, internal rules, a governing body, and training on family planning methods for its members. It continues to meet on advocacy strategy and is recruiting additional FBOs to the alliance. Four of the Cameroonian FBOs have been trained on the country's UNFPA forecasting system to enable them to strengthen and organize their internal systems to monitor and collect data necessary to participate in the national supply

chain systems. This allows them to participate in the national process for forecasting and receiving commodities. They are moving forward as a team, ensuring that the concerns and issues of each individual FBO are raised at each meeting. This enables the group to revise their next steps toward the full provision of products for the programs and services that meet the needs of their communities. Interventions need to focus on this group's infrastructure, on collaborative advocacy for the faith-based sector, on equipping all groups to participate in the national quantification and forecasting system, and on ensuring commodities are able to be procured, stored, transported, and distributed in a financially sustainable structure.

In the DRC, strong multi-sectoral collaboration was evident in the facilities surveyed and visited. Addressing stockouts will mean understanding and working within the existing HZ system. Solutions must complement the DRC 2014–2020 FP National Multi-sectoral Strategic Plan.¹² Most FBO facilities surveyed had staff already trained to provide FP services; the challenge was obtaining regular and reliable supplies. Therefore, interventions should target HZs currently offering limited FP services because of stockouts. Helping these HZs will mean identifying zones with trained FP providers and helping them link to regular sources of RH supplies at the provincial or national levels. However, the DRC is a large country and working with in-country partners is vital to assessing updated needs and interventions.

Conclusions and recommendations

Faith entities are a critically important component of the overall health system in many countries, particularly in hard-to-reach rural areas; without them, large numbers of people would be deprived of services. Addressing stockouts in a faith-based facility requires understanding its supply chain, its merits and challenges, as well as the broader context in which it exists (*i.e.*, donors of supplies, MOH-FBO relationships, etc.). In addition to cost recovery systems, long-term, sustainable fore-

casting, quantification, and procurement practices need to be considered because of the multiple types of supply chain systems among and within countries. In order for faith-based organizations to provide their communities with the most robust access to good quality and affordable medicines, these issues must be addressed, and models must be tested with faith-based supply organizations. With the right support and infrastructure, the Cameroo-

nian alliance pilot model should be considered for replication by other African countries and FBOs to ensure commodity security for the benefit of the overall country systems. As FBOs continue to provide a large proportion of health care services in Africa, they must be major collaborators in reducing stockouts of reproductive health supplies and ultimately in enhancing the lives of children, women, and families.

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Peer Reviewed

Competing Interests: None declared.

Acknowledgements: Hany Abdallah, MHS (U3 Systems Work International, LLC), Judith Brown, PhD (Consultant, CCIH), and Douglas Huber, MD, M.Sc.(CCIH) provided technical assistance in conducting and reviewing this study. The Reproductive Health Supplies Coalition (RHSC) funded the study and the initial training sessions in Cameroon.

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Cite this article as: Metzger A and Bormet M. Pharmaceutical stockouts: Problems and remedies for faith-based health facilities in Africa. *Christian Journal for Global Health*. July 2017; 4(2):19-29; <https://doi.org/10.15566/cjgh.v4i2.130>.

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