# Table of Contents

I. Introduction ....................................................................................................................... 3

II. The Evaluation Process ........................................................................................................ 3

III. Background ........................................................................................................................ 4

- The extent of the problem ........................................................................................................ 4
- The promise of misoprostol ..................................................................................................... 5

IV. The Projects—Engaging both Public and Private Sectors ........................................... 6

- The “Zaria Model” ................................................................................................................ 8
- The Society for Family Health Model ................................................................................ 12

V. Evaluation Findings ........................................................................................................ 16

- The Zaria model may be difficult to scale up ........................................................................ 16
- The Society for Family Health reach was limited and did not penetrate communities ......................................................................................................................... 17
- Lack of clarity about whether trained community agents can distribute misoprostol is biggest barrier ................................................................................................................. 17
- Concerns about “misuse” of misoprostol pose a significant barrier ..................................... 18
- Problems with misoprostol product quality and cost need to be addressed ......................... 20

VI. Recommendations ........................................................................................................ 21

- Recommended modifications to the models .......................................................................... 21
- Recommended actions to facilitate scale up in Nigeria .......................................................... 22
- Recommended actions at the global level ................................................................................ 23

VII. Conclusion ........................................................................................................................ 24

Appendix A. Nigeria Contacts List ....................................................................................... 25

Appendix B. MacArthur Foundation Grants for Misoprostol for Prevention of Postpartum Hemorrhage in Nigeria ............................................................ 26

Appendix C. Work by Other Organizations ........................................................................ 27

- Targeted States High Impact Project .................................................................................... 27
- DKT International/Nigeria ...................................................................................................... 27

References ............................................................................................................................... 28

Acknowledgements .................................................................................................................. 30
I. Introduction

As in many countries where a high percentage of women deliver at home, postpartum hemorrhage is the leading cause of maternal mortality in Nigeria. In an effort to reduce this burden, the Nigerian government began to invest in the use of misoprostol, a heat-stable, inexpensive, and easy-to-use pill which, if taken orally after delivery, has been shown to prevent and treat hemorrhage. In 2006, Nigeria became the first country in Africa to register misoprostol as a drug of choice for the prevention and treatment of postpartum hemorrhage, and, in 2009, a seminal study of community-based distribution of misoprostol in Zaria (Northern Nigeria) demonstrated that misoprostol can safely and effectively be used by women in their homes and communities to reduce their risk of postpartum hemorrhage. Other studies have confirmed that community-based distribution is feasible and very effective in reducing postpartum hemorrhage in women delivering at home or in their community without the help of a skilled birth attendant.\textsuperscript{1–3} Because community-based models of distribution of misoprostol reach women who are at the highest risk of dying from postpartum hemorrhage (precisely because they deliver at home and without skilled attendants) these approaches hold tremendous promise for the reduction of the single most common cause of maternal deaths in this part of the world.

Over the past decade (2004–2014), the MacArthur Foundation has led the way in supporting efforts in Nigeria to distribute misoprostol at the community level to reduce maternal mortality. To better understand the cumulative experiences gained in implementing these projects and to appreciate what it will take to scale up these efforts, the Foundation commissioned an external evaluation of its investments on this issue in Nigeria. This case study describes the findings of this evaluation.

II. The Evaluation Process

In 2014 the MacArthur Foundation commissioned the Public Health Institute to conduct a process evaluation of projects the Foundation has funded to expand access to community-based distribution of misoprostol in Nigeria. The purpose of the evaluation was to gain a deeper understanding of how these projects were implemented, where they were successful, and where they still face obstacles to scale up. A team of experts conducted a desk review of literature and grantee reports, interviewed global experts and local key stakeholders (see Appendix A), and visited the project sites. The interviews and observations were complemented with focus groups of key stakeholders, including women who had used misoprostol, men who had been involved in supporting community-based access, and nurses and community health extension workers who had helped deliver the services. The evaluation was carried out between June and November 2014.
The extent of the problem

Nigeria is one of six countries in the world that when combined, account for over 49% of global maternal mortality. Nigeria’s current maternal mortality ratio is 560 out of 100,000 live births with over 40,000 women dying annually from pregnancy and pregnancy related complications. Postpartum hemorrhage is the leading cause of maternal mortality in Nigeria accounting for close to a quarter of maternal deaths. Rural women in Nigeria who give birth at home are at higher risk for postpartum hemorrhage complications because they lack access to skilled birth attendants and the resources to pay for services.

Most women in Northern Nigeria deliver at home and not in facilities. In every state visited by the evaluation team—Kaduna, Lagos, Ogun, and Gombe—key informants talked about the frequency of home deliveries and confirmed that many occurred without the support of skilled birth attendants. A director in the Federal Ministry of Health affirmed that about 62% of deliveries take place at home without the support of skilled birth attendants. According to participants in the focus group held with community health extension workers in Kaltungo, within some cultures, including the Fulani culture:

*It is a pride for a woman to deliver on her own.*

In these states of Nigeria, the use of antenatal services does not necessarily lead to a woman delivering in a facility; in 2013, 58.2 percent of women in Gombe state received antenatal services but only 27.6 percent delivered in a healthcare facility. And in a study conducted in Zaria, out of 6,919 women who attended antenatal clinics, only 3% returned for delivery (i.e. 97% delivered at home). During a discussion with misoprostol users in the Hayin Ojo community, participants mentioned that although many of them had used antenatal services, many used traditional birth attendants at the time of delivery or delivered at home without the help of an attendant. Reasons given included feeling more comfortable at home, trusting the traditional attendants, and the negative attitudes of the healthcare personnel (not being treated with respect). In the community, there is also a general belief that only complicated cases need to go to hospitals:

*If God has helped us by giving us safe delivery, why do we have to go hospitals to complicate matters?*

—a focus group participant

Supporting this notion, nurses in all the focus group discussions mentioned that many women only come to the health facilities when there are complications during or after childbirth.
The promise of misoprostol

*In home births without skilled attendant, misoprostol may be the only technology available to control postpartum hemorrhage.*

—FIGO/ICM, 2006 Call to Action

One promising approach to preventing postpartum hemorrhage where women have limited access to healthcare facilities is to give pregnant women misoprostol—an inexpensive pill that, when taken immediately after delivery, can reduce the risk of postpartum hemorrhage by between 24 to 47%. Misoprostol was originally used to treat gastric ulcers but, since the late 1980s, has increasingly been used as a uterotonic (an agent used to induce contraction or stimulate muscle tone of the uterus). Misoprostol has multiple indications, including the prevention and treatment of postpartum hemorrhage, induction of labor, termination of pregnancy, and treatment of incomplete abortion.

Misoprostol is an important alternative to another uterotonic—oxytocin—which is commonly used in healthcare facilities to prevent postpartum hemorrhage. Oxytocin is considered by the World Health Organization to be the uterotonic of choice for postpartum hemorrhage prevention due to its higher effectiveness in clinical trials and reduced side effect profile compared to misoprostol. However, because oxytocin is given by injection or intravenously and must be refrigerated to protect potency, it is most practical for use in healthcare facilities. In contrast, misoprostol is easy to administer and heat stable, making it a useful back up to oxytocin in healthcare facilities (in cases of stockouts or when potency has been compromised by heat exposure). Misoprostol also provides a practical tool for increasing uterotonic coverage for home births.

Distributing misoprostol in communities is an effective strategy that has emerged over the past decade to reach women who for whatever reason—distance to a local clinic, finances, or personal or cultural preferences—give birth at home. Models of community-based distribution of misoprostol include:

- **Advance distribution.** This model involves giving a pregnant woman a supply of misoprostol tablets before her anticipated due date so she can take the medication immediately after delivery (either at home, at a facility that lacks oxytocin, or in transit to a facility). Tablets are typically distributed during antenatal care visits or during home visits by a community health extension worker or other community agent;

- **Distribution during home birth.** In this model, a woman giving birth at home is attended by a community health extension worker or traditional birth attendant who administers misoprostol immediately after delivery;

- **Hybrid models.** These involve a combination of the advance distribution and distribution during home birth models.

All of these models focus on trying to reach women who give birth at home and who, as a result, are at high risk of dying from postpartum hemorrhage. Increasingly, governments in countries like Nigeria—where rates of institutional deliveries are low and maternal deaths are high—are taking measures to register misoprostol in their countries and exploring how best to use it to reduce the postpartum hemorrhage in their rural communities.
IV. The Projects—Engaging both Public and Private Sectors

Nigeria’s introduction of misoprostol for postpartum hemorrhage has been truly groundbreaking; it was the first country in Africa (in 2006) to register misoprostol for the prevention and treatment of postpartum hemorrhage and one of the first to demonstrate the feasibility of community-based distribution (study in Zaria in 2009—see below).9 To support these efforts to use misoprostol to prevent postpartum hemorrhage—one of the leading causes of maternal deaths in Nigeria—the MacArthur Foundation made grants to the following organizations (also see Appendix B):

- Population and Reproductive Health Initiative at Ahmadu Bello University to expand the community-based distribution model it had successfully completed in Zaria to eleven other areas of Kaduna State and introduce it in two communities in Sokoto State;
- Society for Family Health (in partnership with Population Services International (PSI)) to increase the availability, access, and use of misoprostol for the prevention and treatment of postpartum hemorrhage across the country;
- Society of Obstetricians and Gynaecologists of Nigeria (SOGON) to ensure that misoprostol be understood and accepted by the medical community;
- Ipas to train medical interns to increase their knowledge and skills for providing high-quality comprehensive abortion care services and to expose them to other maternal health topics, including the use of misoprostol for prevention and management of postpartum hemorrhage.

In making these grants, the MacArthur Foundation strategically provided support to both a public sector model and a private sector approach; Ahmadu Bello University worked with the Ministry of Health, the Society for Family Health/PSI focused on the private sector, and SOGON worked with both sectors to overcome provider bias. The overarching goal of these grants was to demonstrate and document effective approaches to expanded community-based access to misoprostol for postpartum hemorrhage prevention and advocate with government officials, providers, and community leaders for full acceptance of its use—or, in other words, to work towards national scale up (see box, The Challenge of Scale Up).
The Challenge of Scale Up

A significant challenge for any national healthcare system is scaling up interventions that are proven successful in small pilot projects so that they become integrated parts of ongoing national health services. While it is often assumed that scale up will easily follow a successful pilot, the realities surrounding pilot project implementation (significant funding, strengthened infrastructure in the pilot project site) are very different from the realities faced by health systems managers as they try to expand the model (limited funding, competing health priorities, weak infrastructure). The average time for taking a successful pilot to national scale is 15 years.23

Scale up is more likely to be successful if the intervention addresses a compelling need and is supported by evidence. Other important factors leading to successful scale up include being endorsed by credible sources; observable so that potential users can see the results in practice; easy to transfer and adopt; compatible with the system’s established values, norms, and facilities; and able to be tested for feasibility before committing the potential user to full scale up. Community-based distribution of misoprostol to prevent postpartum hemorrhage clearly meets this profile: numerous studies have demonstrated its safety and efficacy; it is endorsed by the World Health Organization; it results in a dramatic reduction in postpartum hemorrhage and death; it can be provided within existing systems; and it addresses the strong community value of safe motherhood.

Even when the intervention to be scaled up is the “perfect solution” to a compelling problem, efforts to expand its use on a widespread basis requires careful planning from the outset. Key steps in the process of scale up include:

- Legitimizing the approach;
- Constituency building;
- Realigning and mobilizing resources;
- Modifying organizational structures;
- Coordinating action;
- Performance monitoring.

An overview of how the grants in this evaluation addressed these steps and the resulting impact on scale up of the intervention is discussed in the Evaluation Findings section of this report.

The following is a description of the two approaches funded: the “Zaria model,” so called because the first demonstration of this model was conducted in Zaria; and the Society for Family Health/PSI model, which focused primarily on engaging the private sector (providers at private facilities and pharmacies).
The “Zaria Model”

According to the initial guidelines under which misoprostol was registered in Nigeria in 2006, its use was limited to health facilities and its administration strictly restricted to skilled birth attendants. In response to demands by stakeholders to review the guidelines and expand misoprostol use beyond health facilities to communities, the Federal Ministry of Health requested evidence on its feasibility, acceptability, and safety. In 2009, the Population and Reproductive Health Initiative (PRHI) at Ahmadu Bello University in Zaria, with Venture Strategies Innovations (VSI), provided evidence by conducting a pilot study in five communities around Zaria. This successful study, which became known as the “Zaria Model,” demonstrated that misoprostol can safely and effectively be used by women delivering at home and that its use can reduce postpartum hemorrhage during home deliveries. In fact, this study provided key evidence upon which the World Health Organization based its recommendation in 2012 to support misoprostol for postpartum hemorrhage at the community level:

In settings where skilled birth attendants are not present and oxytocin is unavailable, the administration of misoprostol (600 µg oral) by community healthcare workers and lay health workers is recommended for the prevention of postpartum hemorrhage.

—WHO

In 2010, the MacArthur Foundation made a grant to Ahmadu Bello University to expand this model to eleven communities in Kaduna State and two communities in Sokoto State. The idea was to expand coverage of this successful intervention to more communities and other states and in doing so, provide answers to questions regarding the model’s potential for scale up: Could this model be replicated? Would it be as successful elsewhere? What would it take to reach women throughout Nigeria?

The study implemented in Kaduna and Sokoto employed the same approaches that had been used in Zaria: community sensitization and engagement designed to gain support and create demand; distribution of misoprostol directly to the women in the communities through trained lay workers doing home outreach; and supplying the product locally through “drug keepers”. The evidence from this work was then used to advocate for and build legitimacy around advance provision of misoprostol by trained lay workers. The figure on the next page provides an overview of the Ahmadu Bello University project including: basic components of the model; key maternal health indicators at the time of project inception; and the main findings of the evaluation.

Community sensitization

The Population and Reproductive Health Initiative employed specific strategies to engage communities in the study sites and to create demand for misoprostol.

Identification of and engagement of key stakeholders. The first step was to identify key stakeholders and potential allies in the communities. Using key informants and focus group discussions, the following types of community leaders were identified: religious and traditional leaders; traditional barbers (Wanzamai); herbalists; youth leaders; patent medicine vendors; healthcare workers; traditional birth attendants; women of reproductive age; their husbands; and several community-based groups (separate female and male associations). In addition to potential allies, the team also identified
potential obstacles. For example, in one of the project locations, Angwar Juma, they came across a group of “well-to-do” men who firmly believed in the superiority of injectable drugs to other prevention and treatment options for hemorrhage and were strongly opposed to the introduction of misoprostol (a tablet). The team had to repeat several sensitization events in this community to gain acceptance.

**Education and demand generation.** The project team utilized several community mobilization and sensitization methods to create demand for misoprostol, including: community dialogues; sensitization meetings; house-to-house counseling of pregnant women; production and distribution of posters and factsheets/handbills; and audio drama recordings with accompanying illustrated booklets. The project also distributed hijabs (head scarves) to Muslim women, head ties to Christian women, butas (water kettles for ablutions) to Muslim men, and T-shirts to Christian men with messages about safe delivery practices, including the use of misoprostol. In addition, the team conducted significant messaging campaigns in mosques about postpartum hemorrhage and the use of misoprostol. Project team members also often tapped into opportunities provided by community events, such as naming and wedding ceremonies, to educate community members about the usefulness of misoprostol as a life-saving drug.
Establishment of community structures. Community sensitization created a high level of acceptance and fostered ownership as well as a sense of responsibility among community members. The project team facilitated a community-led nomination and selection process for key personnel to serve on community structures created to drive the project. Positions included: traditional birth attendants, Community Oriented Resource Persons (CORPS), and drug keepers. The selection criteria for all groups were jointly agreed by community members and validated by village heads who nominated some of the stakeholders to serve on project teams in various categories.

Provision of misoprostol in the communities by trained lay workers

The trained lay workers—traditional birth attendants, Community Oriented Resource Persons (CORPS), and drug keepers—were the backbone of the community-distribution approach. The basic roles of each cadre were:

- **Traditional Birth Attendants** provided outreach and counseling to pregnant women about the risk of postpartum hemorrhage, the importance of delivery at a health facility, and the role of misoprostol in preventing hemorrhage. They also brought the misoprostol to the women (in the form of clean delivery kits that contained misoprostol) either before they delivered or during the delivery;
Community Oriented Resource Persons (CORPS) were community members who counseled and supported pregnant women, including encouraging them to use antenatal services and actually following up to ensure compliance. Some of them doubled as drug keepers (see below). They also helped raise community awareness of the importance of misoprostol in saving a woman’s life;

Drug Keepers included Patent Medicine Vendors, Village Heads or members of their families, traditional birth attendants, and other individuals nominated by the community to be responsible for stocking, storing, tracking, and dispensing the pills to pregnant women, members of their families, and traditional birth attendants.

All three cadres received training about misoprostol for postpartum hemorrhage, including the correct dosage, routes of administration, and side effects of the drug. Both traditional birth attendants and drug keepers were trained to maintain a register to track who obtained the drug from them and for what purpose. In addition, traditional birth attendants were trained to recognize postpartum hemorrhage, given tools to estimate blood loss (including blood drapes—a plastic sheet that is placed under the woman and siphons the blood into a calibrated measuring pocket on the sheet) and instructed on who to call and how to refer their clients when problems or complications arose.

Product supply

During the life of the project, the study team procured and distributed the misoprostol at no cost to the drug keepers. The project periodically sent out supervisors to replenish the stocks, monitor the drug use registers, and discuss ways to address distribution challenges that arose.

In an effort to create a consistent supply of misoprostol that would extend beyond the project time-frame, communities created a community-based Drug Revolving Fund to collectively purchase misoprostol. The idea came out of a local stakeholders meeting the project team convened in March 2013 to explore ways of ensuring that misoprostol would continue to be available in the communities. The Drug Revolving Fund allows the drug keepers to buy the drug and sell it to users at a markup. The project team facilitated the process by procuring the drugs and selling them at cost to the drug keepers. The drug keepers bought them from the study team at Naira210.00 per packet and sold to users at N250.00 (USD1.40). The group developed guidelines for the fund, including membership of the committees and opening of bank accounts, and provided seed stock.

The Chairperson of the Committee in Yakawada, Zaria, where the Drug Revolving Fund scheme was successful and is still functional, described the process of setting up the Committee as highly participatory (translated from Hausa):

I was nominated because I interact a lot with community members. Also, my house and shop are right here in the middle of the market so I can be reached easily. Our committee has 12 members (9 women and 3 men including the Chief of Yakawada. I usually go and procure the drug. We started with 80 doses. We distribute to the 5 drug keepers in our community. I have a register with which I track the stock. When we have sold up to 50 doses, I go and replenish the stock. I pay my own transport fare to go and buy the drug.

The Drug Revolving Fund scheme is being implemented in each of the project communities, except Sokoto State where it is reported that the state government is making arrangements to supply the drugs.
Project outcomes

The replication and expansion of the community-based model of distributing misoprostol in Kaduna and Sokoto States proved as feasible and successful in expanding access to misoprostol—and thereby reducing postpartum hemorrhage—as it had in Zaria. The 2009 study involving nearly 7,000 women in the project areas found:

- **High acceptance of misoprostol in the community.** 83.6% of the women reported using misoprostol. And of those, over 99% would use it in subsequent pregnancies, recommend it to a friend, and be willing to purchase the drug;

- **Prevention of postpartum hemorrhage.** 6.2% of the 4,857 women who used misoprostol for prevention had bleeding and required treatment, as compared to 12.6% of the 1,344 women who did not take the misoprostol for prevention and did not have an injection of oxytocin—a 50% reduction in hemorrhage;

- **Effective distribution in communities by traditional birth attendants.** 87.9% of the women who used misoprostol received it from traditional birth attendants while 11.4% received it from drug keepers. Birth attendants also emerged as the most frequent source of information on misoprostol (52%) compared to other sources;

- **Correct use of misoprostol.** 97.5% of the women had used the correct dose of misoprostol and 87.5% had taken it correctly (by mouth and with correct timing).

Using the evidence generated by this operations research and the earlier Zaria study, the Ahmadu Bello University team called for an official review of the government’s guidelines to expand use of misoprostol to the community level. Through concerted policy advocacy and technical support by the research team at Ahmadu Bello University, and under the leadership of Dr. Clara Ejembi, a national guideline on the community use of misoprostol for the prevention and treatment of postpartum hemorrhage in Nigeria has been developed, endorsed by the Minister of Health, and printed. During an interview in Abuja, a Director from the Federal Ministry of Health referred to the document and stated that it would be launched and disseminated with other guidelines at an opportune time.

The research team also conducted advocacy to policymakers to secure investment in the procurement and use of misoprostol. One of the key successes so far is the inclusion of misoprostol as an option for the prevention and treatment of postpartum hemorrhage in the Federal Ministry of Health’s Mid-term Sector Strategy for Health.

**The Society for Family Health Model**

Recognizing the myriad product issues Nigeria was facing with regard to misoprostol, the MacArthur Foundation gave a grant to Population Services International (PSI) and the Society for Family Health (SFH), to increase access to misoprostol and knowledge about its potential to prevent and treat postpartum hemorrhage. The Society for Family Health, now one of the largest non-profit organizations working on health and development in Nigeria, specializes in social marketing projects in reproductive health. With this support from the Foundation they attempted to raise awareness about misoprostol
for postpartum hemorrhage, train health workers in its use, and ensure access to the drug.\textsuperscript{26} The figure below provides an overview of the Society for Family Health project setting, including: key maternal health indicators at the time of project inception; the model used to address those challenges; and the key findings of the evaluation.

**Education and advocacy**

The Society for Family Health engaged with a wide spectrum of stakeholders including policymakers, health practitioners, communities, and women users. They met with key policymakers at all three levels of government, held seminars and workshops for health practitioners, and conducted advocacy visits to key women’s groups in 16 states. The project framed misoprostol as a safe and less expensive alternative to oxytocin, which is often compromised by heat exposure (due to the unreliability of refrigeration in Nigeria) and requires injection supplies (which are often not available).

The Society for Family Health also leveraged in-house resources to create awareness in the communities of the importance of misoprostol. Taking advantage of other on-going trainings and outreach projects, especially of the Women’s Rights Project, they organized events to sensitize women and communities to the dangers of postpartum hemorrhage and the importance of birth preparedness, and to encourage women to deliver with the help of a skilled birth attendant.

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**THE MODEL — DISTRIBUTION THROUGH FACILITIES**

**NIGERIA**

- **Maternal Mortality Ratio**: 610\textsuperscript{*}
- **Home Delivery**: 55\%\textsuperscript{†}

**Challenges**
- Lack of confidence in health services
- Problems with oxytocin quality and supply in facilities

**KEY FINDINGS**
- Trained 2,478 health care providers
- Distributed misoprostol to 1,000 private sector facilities
- Challenges with misoprostol product quality and supply
- Concerns about use for abortion and induction of labor


**Provider training about misoprostol**

A specific objective of the Society for Family Health’s initiative was to increase knowledge and use of misoprostol among healthcare providers throughout Nigeria. The project trained a variety of types of providers, including nurses, midwives, community health extension workers, nursing attendants, doctors, and pharmacists. (Note: most of the providers trained worked in private sector facilities.)

The Society for Family Health also reached out to its extensive network of social franchising outlets and provided them with misoprostol stock (see below) and instructions on correct use for postpartum hemorrhage prevention. In addition, the project team collaborated with professional associations of providers to generate awareness about the effectiveness of misoprostol, sponsoring workshops and seminars on misoprostol at their annual meetings.27

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A Society for Family Health staff member watches as a community health extension worker and traditional birth attendant talk to women about postpartum hemorrhage and the benefits of using misoprostol in a rural village in Gombe State.
Product supply

A key commitment of the Society for Family Health project was to maintain a regular supply of the drug at an affordable price through stock procurement, price reviews, and efficient distribution. The strengths of the Society for Family Health for accomplishing this task include: warehousing, haulage, and an effective commodity logistics system that is able to distribute drugs to all 36 states of the country and the Federal Capital Territory Abuja within two weeks. In addition, the project worked with 60 wholesalers across the country and maintained a network of facilities that access the product directly from the wholesalers thus reducing the cost. The established drug distribution channel is shown below:

![Drug Distribution Channel Diagram]

Project outcomes

Over the course of the one year project, the Society for Family Health:

- Conducted 15 advocacy visits to federal and state Ministries of Health;
- Held five advocacy seminars with a total of 363 attendees (pharmacists and nurses);
- Trained 2,478 healthcare providers across Nigeria;
- Reached 1,615 Society for Family Health franchise and other facilities for medical detailing and distribution of 54,000 doses of misoprostol, reaching providers in all states of the Federation;
- Contributed to the revision of local and state policies on misoprostol use in Gombe and Bauchi States where lower level health workers (mainly community health extension workers) are now officially permitted to distribute and/or administer the drug to women.
V. Evaluation Findings

The initiatives supported by the MacArthur Foundation addressed very different needs related to misoprostol, with each project making progress on some of the key components necessary to eventually scale up community-based access to misoprostol. The Zaria model addressed a critical situation that many women in Northern Nigeria face—they give birth at home without access to lifesaving uterotonics. The model demonstrated that using trained lay workers to distribute misoprostol in advance to women in their communities was feasible and effective. The evidence-based results of this work helped to legitimize the approach; subsequent advocacy for policy change sought to build constituents and modify organizational structures to ensure continued viability of the approach. The Society for Family Health project’s primary focus was to increase the availability of misoprostol through healthcare facilities in its franchise network to address the problem of poor oxytocin quality in facilities (our findings confirmed the significance of this problem, with “problems with oxytocin potency” being a recurring theme in the focus groups conducted). While not truly a community-based model, the project’s advocacy and education components helped to build constituency for misoprostol in general as well as for distribution by community health extension workers in particular. The project’s work to incorporate the product in private and some public sector facilities distribution systems was an example of modifying organizational structures to support expanded access that could eventually reach to the community level.

Despite these successes, both approaches face limitations in the feasibility of scale up due to both the specifics of the model design as well as the political climate toward misoprostol in Nigeria. In particular, there are significant concerns about the use of trained lay workers to distribute misoprostol, concerns about “misuse” of misoprostol, and challenges related to ensuring that a quality misoprostol product is consistently available at a reasonable cost. Each of these findings is discussed below.

The Zaria model may be difficult to scale up

The Zaria model, while highly successful at generating data to help legitimize the practice of lay worker distribution of misoprostol at the community level, may prove difficult to scale up. This is because the model created new structures within the community (CORPS and drug keepers) rather than integrating the approach within an existing structure in the community environment (such as the healthcare system, a social marketing project, women’s group). Because of this, replication will be dependent upon Ahmadu Bello University either finding resources to introduce the model in other communities (including all training and purchase of misoprostol) or finding champions to take it on themselves. The lack of a host structure for expansion of the model could also threaten the sustainability of the service, as there is no easy mechanism for periodic recruiting and training of new members.

In addition, product issues, including the challenges with ensuring a consistent supply at a reasonable cost, present a significant challenge to bringing this model to scale. Drug keepers, some of whom are also birth attendants, complained about lack of availability of misoprostol and worried about having access to the product after the end of the study. For example, one drug keeper said that he did not have misoprostol in stock at the time of the interview as it was not available in the nearby medicine stores. One exception to this concern was in Sokoto State, where it was reported that the State government was making arrangements with TSHIP to supply the drugs (see Appendix C: Work by Other Organizations).
The Society for Family Health reach was limited and did not penetrate communities

The Society for Family Health model was not as successful as had been hoped in creating a reliable source of supply in the market, establishing price controls, and penetrating into communities. The number of doses to be distributed during the term of the project fell very short of the target: Society for Family Health had projected distributing 480,000 doses and instead distributed 54,000. Focus group participants indicated that reliability of supply and cost of the product were problematic, complaining about the non-availability of misoprostol through Society for Family Health channels. As one community health extension worker in Kaltungo put it:

*We don’t have the drug. They (pregnant women) have to buy it at N350 to N450, sometimes up to N700.*

The fact that Society for Family Health only reached 11% of its distribution goal suggests that a different demand generation approach may have been needed, perhaps one focused on creating demand in the communities, where the biggest share of the market for misoprostol lies. While direct advertising of misoprostol is not allowed under the licensing agreement, had Society for Family Health found strategic ways to educate “end-users” (including pregnant women, their families, and trained community workers) instead of healthcare providers working in facilities, they might have generated more demand and come closer to meeting their distribution target.

Society for Family Health staff attributed the failure to meet its distribution goal to growing competition; free product is being made available through primary healthcare facilities in some states (with free or subsidized products often provided by development partners/non-governmental organizations). Because the Society for Family Health product is sold at cost recovery, it is not always competitive in the local marketplace.

Lack of clarity about whether trained community agents can distribute misoprostol is biggest barrier

The evaluation found that differing interpretations of who is a “trained community agent” is a significant barrier to both models’ ability to reach women with misoprostol services in their communities. As background, the national guideline for the use of misoprostol for postpartum hemorrhage prevention, drawn up and ratified by the National Council on Health, was entitled *Use of misoprostol at community level by “trained community agents” for postpartum hemorrhage prevention*. While a technical review team comprised of representatives from the Federal Ministry of Health and local and international non-governmental organizations had finalized and adopted these guidelines, some key staff of the Federal Ministry of Health insisted that “trained community agents” did not include lower level community health extension workers or traditional birth attendants, interpreting it instead as meaning formally trained workers. According to Ahmadu Bello University staff, this differential interpretation may have been influenced by the World Health Organization’s position on the issue; at the time the guideline was drafted World Health Organization did not support administration of misoprostol by traditional birth attendants. World Health Organization has since reversed its position.

To address this issue, the Ahmadu Bello University team has stepped up their policy advocacy and are trying to ensure that trained community agents, including traditional birth attendants, be allowed...
to distribute misoprostol. Likewise, the Society for Family Health advocated in Gombe and Bauchi States to secure permission for community health extension workers to distribute misoprostol. Should the Federal Ministry of Health’s interpretation stand, the Zaria model will not be viable given that it revolves around the distribution of misoprostol in the communities by traditional birth attendants and lay workers (CORPs and drug keepers). The Society for Family Health model would still be viable, as it mainly distributes through facilities, but any extra efforts to reach women in communities using health extension workers would not be feasible.

The reluctance to involve trained community workers in distributing misoprostol is not limited to health officials. Focus groups uncovered mutual suspicion and mistrust among health workers regarding who can be trusted to distribute and/or administer misoprostol. In the focus group sessions in Society for Family Health project areas (Gombe, Lagos, and Ogun States), some nurses said that community health extension workers and traditional birth attendants (TBAs) were not “qualified” to handle misoprostol. To quote a nurse from Abeokuta:

*TBAs are daft and cannot handle misoprostol.*

Likewise, community health extension workers felt that traditional birth attendants were not qualified to handle the drug. In contrast, there seemed to be a high level of collaboration and trust between health workers in Zaria. This is not surprising given how much investment the Zaria model put into the trainings of the various levels of providers and the framework it presented of supporting trained community agents. But given that the Zaria model hinges on the distribution of misoprostol in the communities by traditional birth attendants and lay workers (CORPs and drug keepers), this pervasive reluctance to allow trained lay workers to handle the drug will continue to be a significant barrier.

**Concerns about “misuse” of misoprostol pose a significant barrier**

The reluctance to let community lay workers distribute misoprostol appears to center on two concerns, the first being the underlying and unsubstantiated fear that misoprostol will be “misused” and the second being the perception that using misoprostol can be dangerous and therefore requires administration by medically trained providers.

Analysis of the focus group discussions revealed that the term “misuse” was usually a euphemism for “use for abortion.” It is widely acknowledged that many women in Nigeria know that misoprostol can be used to safely terminate unwanted pregnancies and that some avail themselves of the drug for that purpose. According to Society for Family Health staff, concern about the use of misoprostol for abortion was prevalent amongst the health providers they trained. Nurses participating in the evaluation in Gombe and Lagos expressed similar concerns about women using the misoprostol for abortion, as well as about other types of providers supplying it to women for this purpose. To quote one from Lagos:

*We should be careful about putting misoprostol in the hands of community health extension workers and traditional birth attendants as they have potential to administer it for abortion.*

According to nurses in Abeokuta, misoprostol is well known among the populace as an abortion-inducing drug, with information readily available on the internet. To quote one of their clients:

*Whatever you ask Google, Google will tell you.*
Given the legal restrictions on abortion in Nigerian law and the strong stigma that surrounds abortion in the country, stakeholders who are anti-abortion are able to easily foment fear about this alternative use of misoprostol and employ it as a reason to restrict its availability for postpartum hemorrhage. But it must be noted that the concerns around this use of misoprostol are political, ethical, and social—not medical; the use of misoprostol to terminate early pregnancies actually protects the health and lives of women who don’t have access to safe abortion services.\textsuperscript{30}

Stakeholders also raised the concern that misoprostol use can be dangerous, potentially leading to uterine rupture and death. However, the danger associated with misoprostol occurs when it is used for a different indication—induction of labor. Misoprostol has many obstetrical uses: it can be used to prevent postpartum hemorrhage, treat hemorrhage when oxytocin has failed to arrest bleeding, terminate pregnancies, treat incomplete abortion, expel the fetus in cases of intra-uterine fetal death, and induce labor. Taking the drug to prevent or treat hemorrhage is easy and safe—one has only to know how many pills to take and ingest them at the correct time. In contrast, the use of misoprostol to induce labor requires a much smaller dose administered over time with careful monitoring. While an effective tool for induction, misoprostol used in this way also carries risks of serious adverse outcomes, including uterine rupture and death.\textsuperscript{31} In situations in which providers lack proper training in using misoprostol for induction, the risks may be higher.

Nurses we spoke with in Gombe, Lagos, and Abeokuta and the community health extension workers in Kaltungo reported a growing use of misoprostol to induce labor. Unlike in the Zaria study where focus group discussants only mentioned using misoprostol for postpartum hemorrhage, health workers in the Society for Family Health project mentioned that they also use the drug to induce labor. A nurse in Gombe said:

\begin{quote}
We usually cut one Miso tablet into four and place it under the client’s tongue to induce labor.
\end{quote}

Other nurses mentioned that at times, when there is prolonged labor, colleagues become impatient and increase the dose. These participants agreed that it was dangerous to use more than a quarter of a tablet for induction purposes (the dose for induction is 25 µg vaginally every six hours or 25 µg orally every two hours;\textsuperscript{32} one tablet is usually 200 µg). To quote one nurse in Gombe:

\begin{quote}
We have seen cases of misuse.
\end{quote}

This practice is problematic not only because it is potentially dangerous to the woman, but also because incorrect use of the drug for induction could have devastating political consequences for misoprostol use for postpartum hemorrhage. Given that misoprostol is already controversial due to its abortion indication, even one death due to the use of misoprostol (for any indication) could result in a political setback. Thus, ironically, as a result of these concerns about “misuse” for abortion and possible incorrect use for induction, the use of misoprostol to prevent postpartum hemorrhage—a proven life-saving intervention—is being significantly impeded.
Problems with misoprostol product quality and cost need to be addressed

A challenge facing any initiative to distribute misoprostol for postpartum hemorrhage (or any other indication) is that product quality is inconsistent. Traditional birth attendants and nurses who participated in focus groups and interviews noted that some brands of misoprostol in the market generally, as well as that supplied through the Society for Family Health, failed to work or were not as effective as expected. According to focus group discussants in all study locations (Lagos, Ogun, Kaduna, and Gombe States), the various brands differ markedly in efficacy with Misoclear (supplied through Marie Stopes International) perceived to be the best brand.

The quality issue came to a head midway through the Society for Family Health project when staff noted a problem with the misoprostol product it had registered under the brand name Mistol; an independent analysis requested by Society for Family Health and conducted by the Nigerian Institute for Pharmaceutical Research and Development revealed that the drug did not meet the standard quality requirements. The project pulled Mistol off the market and replaced it with other brands. Stakeholders involved with global procurement of misoprostol confirmed that product quality is a significant challenge and it is not uncommon to find degraded products with only partial potency. A high level committee of the Federal Government of Nigeria has been set up to look into issues relating to the quality of misoprostol products.

The variable and often high cost of misoprostol is also problematic. As reported above, the cost of product available through Society for Family Health outlets was not always consistent for users and the availability of free or subsidized product in the marketplace made it challenging for the Society for Family Health to be competitive given their cost-recovery pricing structure. Stakeholders in the Zaria model project also expressed concerns about the high cost of obtaining an ongoing supply of misoprostol. Although the Drug Revolving Funds were instituted to address this concern and create a sustainable supply, discussions with participants revealed that while they have been successful in some communities (e.g. Yakawada), they failed in others (e.g. Hayin Ojo); their success appears to be largely tied to having committed champions leading them. Yet, even with a successful structure in place, drug keepers reported difficulty restocking at a reasonable price; misoprostol sells at N500.00 in most communities (pharmacies and drug sellers) and as high as N1000.00 (USD5.60) in some places, making it difficult for the drug keepers when they are forced to purchase the drug on the open market (once the project has ended). Drug keepers and traditional birth attendants we spoke with also commented on the fact that some community members cannot afford to pay for misoprostol and, in their view, the fact that many of them accessed the drug at no cost during the life of the project now makes some people reluctant to pay.
VI. Recommendations

The MacArthur Foundation grantees have helped lay the groundwork for the use of misoprostol to address the problem of postpartum hemorrhage in Nigeria, but each only captured a part of what will be needed to broaden access to misoprostol at the community level. The Zaria model work proved without a doubt that community-based distribution is feasible and safe as well as very effective in reducing postpartum hemorrhage (by 50%). However, the model used will be difficult to bring to scale because it lacks supporting infrastructure for replication. The Society for Family Health project demonstrated that the private sector has the capacity to raise awareness about and distribute misoprostol on a broad scale, although the focus of the project on service providers missed the opportunity for creating demand and access through outreach to women and communities directly.

The biggest roadblock to national scale up of a community-based model in Nigeria today is the Federal Ministry of Health's hesitancy to allow distribution of misoprostol by lower level community health extension workers and traditional birth attendants. Intertwined with this concern and posing another significant roadblock, is the sensitivity around abortion and the fear that misoprostol will be “misused” for abortion.

At this point, there is no need for additional research about the safety and efficacy of community-based distribution of misoprostol; there is sufficient evidence from within Nigeria and elsewhere that it is safe and effective. There is also enough evidence that providing misoprostol directly to pregnant women in advance of their delivery date (advance distribution) is safe and effective and results in high uterotonic coverage. [While the World Health Organization (WHO) has not yet endorsed advance distribution, data supporting this practice have been submitted to WHO for consideration of endorsement.]

What is needed now is careful work to frame community-based distribution of misoprostol in a way that resonates with key constituents and develop a strategy that integrates community-based distribution into existing structures to ensure efficient replication and sustainability. There are also opportunities for the two initiatives to be more synergistic; the Society for Family Health is well situated to help address the access to product that has been challenging at the community level and the Ahmadu Bello University team is a ready resource for helping Society for Family Health reach beyond the facility level.

Recommendations for moving forward are listed below, organized according to suggested modifications to the models tested, actions to facilitate scale up of successful approaches in Nigeria, and actions at the global level that can support country-level initiatives.

**Recommended modifications to the models**

Recommended actions related to the Zaria model focus on exploring ways to integrate the trained lay worker approach within existing systems (to ensure sustainability and ease of replication) and addressing product issues.

- **Integrate lay worker approach within existing systems.** Look to existing structures that can integrate distribution of misoprostol by trained lay workers rather than creating new systems/structures. Coordinate with large, ongoing projects (such as TSHIP) to share lessons learned and test and expand service delivery approaches using trained lay workers. Consider a
hybrid model that pairs community-based outreach by trained lay workers with advance distribution of misoprostol by trained healthcare workers during antenatal care visits. Such a model is proving successful in Ghana and other countries, resulting in higher rates of facility delivery overall and higher rates of uterotonic coverage when women are not able to reach facilities to deliver.

- **Establish a reliable source of product.** Examine further whether drug-revolving fund schemes are a viable strategy in communities to ensure availability of the drug. Look for existing structures in communities that might efficiently host such systems. Rather than relying on repurchasing the product on the open market at the prevailing rate, explore potential partnerships with social marketing firms (Society for Family Health and DKT International) that might ensure a more consistent supply at a negotiated price. Examine whether the recent availability of DKT’s *Miso-Fem* single dose product for postpartum hemorrhage offers new opportunities to reach women through pharmacies and medicine vendors. This dedicated product also may expand the opportunity for advance distribution of misoprostol to women, as each packet contains the correct dosage and instructions for a single postpartum use.

Recommended actions related to the Society for Family Health model focus on the need to move beyond the facility level to address women’s need for access at the community level and addressing product quality, stocking, and cost.

- **Extend beyond facility level.** Consider how the Society for Family Health’s product can become better known and more accessible to women in their communities. While direct advertising is not permitted, consider intensifying efforts to mobilize awareness of misoprostol for postpartum hemorrhage in communities to increase demand for the product through Society for Family Health facilities. Investigate whether mechanisms could be established for advance distribution of misoprostol during antenatal care visits at Society for Family Health facilities if access to a facility at the time of labor is likely to be problematic (women who are able to present at a facility for delivery could bring the misoprostol with them).

- **Address product quality, stocking, and price.** Investigate whether a different product may have a better quality profile that could help to ensure long-term brand reputation. Investigate a single dose product that might facilitate advance distribution through Society for Family Health facilities (as described above). Continue to assess how the Society for Family Health product can remain competitive given free and subsidized misoprostol in the market (including the suggestion by project staff of registering a Society for Family Health brand of misoprostol, which might help build a strong brand equity that would drive up demand).

**Recommended actions to facilitate scale up in Nigeria**

At the country level, a coordinated effort is needed to legitimize change, build constituencies, and modify organizational structures in support of broadening access to misoprostol at the community level.

- **Continue to build constituencies.** Identify and cultivate additional champions within the Federal Ministry of Health and at the state and local levels. One strategy would be to engage professional associations to mobilize support from providers (as SOGON did to pave the way for use of magnesium sulfate for treatment of the life-threatening pregnancy complications
of pre-eclampsia and eclampsia in Nigeria). Another would be to use the advocacy power of activist and women’s groups to create demand for misoprostol access from the ground up (per the human rights framing mentioned below). Nigeria is ripe for this approach, given the number of women’s advocacy organizations (i.e. Federation of Muslim Women Association of Nigeria and the Young Women Christian Association) and their proven record in tackling sensitive political issues.

With all audiences, careful framing of messages to resonate with key constituencies may help to gain support for expanding access to misoprostol at the community level. Possible frames include:

■ Community-based distribution of misoprostol as a way of showing commitment to the achievement of reducing maternal mortality (Millennium Development Goal 5);

■ Access to misoprostol use as a human rights issue. Advocates have been making the case that high maternal mortality is human rights failure. Given misoprostol’s efficacy in preventing postpartum hemorrhage—a problem many women face and fear—it is going to become increasingly difficult to justify not giving women access to this simple, potentially life-saving pill;

■ Access to misoprostol as a harm reduction strategy. Doing so might be a way for politicians to support the use of misoprostol without challenging public concerns around abortion.

■ Modify organizational structures to incorporate misoprostol. Launch and disseminate the national guideline on misoprostol use in communities. Institutionalize training on misoprostol use (e.g. through the Midwives Service Scheme and the curriculum for Schools of Health Technology). Include all indications of misoprostol in training, including a discussion of the dangers of induction, to ensure that all providers are properly equipped with information to use misoprostol correctly. Nigerian states have a mandate to formulate their own policies and laws where necessary. Thus one strategy to circumvent bottlenecks at the federal level is to work more at the state levels to secure policy support for new approaches and commitments for the procurement and distribution of misoprostol. Explore the possible involvement of traditional birth attendants in training to equip them to use misoprostol in their practice. They represent a direct connection to women in need of misoprostol and stand to make a big impact in increasing uterotonic coverage at delivery.

■ Alert donors to the significant amount of work remains to be done. The MacArthur Foundation has led the way in supporting community-based distribution of misoprostol for postpartum hemorrhage in Nigeria and recognizes the importance of maintaining the momentum. Many large donors are now investing in Nigeria, in particular, to reduce maternal mortality. This puts the Foundation in a very influential leadership position, one that could extend much farther than Nigeria.

**Recommended actions at the global level**

Actions at the global level that would support successful community-based use of misoprostol for postpartum hemorrhage in Nigeria and elsewhere include:
Widely share the evidence from Nigeria to legitimize community-based distribution of misoprostol. Continue to share results from Zaria research and other locations that demonstrate the effectiveness and feasibility of using trained lay workers for community-based distribution of misoprostol;

Expedite decision about advance provision of misoprostol. The World Health Organization is expected to soon make a recommendation regarding the advance provision of misoprostol for postpartum hemorrhage prevention and treatment. A recommendation endorsing this practice as a life-saving measure for women who do not have access to a facility or skilled attendant at delivery would provide needed reassurance to policymakers as they consider how to reduce maternal death in Nigeria;

Continue efforts to improve misoprostol product quality. Poor quality misoprostol resulted in a product recall during the project implementation period and local stakeholders reported significant product quality issues. Stakeholders involved with global procurement of misoprostol confirmed that this issue is not unique to Nigeria; product quality is a significant challenge worldwide and it is not uncommon to find degraded products with only partial potency. Both the way the tablets are manufactured and their limited shelf-life (two years) contribute to the challenge of ensuring a steady supply of quality misoprostol at the community level. Current efforts to ensure product quality, such as the work of the Reproductive Health Supplies Coalition and UNFPA to establish pre-qualified vendors for misoprostol, are making progress on this issue and should be continued.

VII. Conclusion

The need for misoprostol to address postpartum hemorrhage in Nigeria is great and the evidence that misoprostol can significantly prevent this major cause of maternal mortality is strong. Nigeria has led the way in proving this, so much so that the World Health Organization has based its support for community-based distribution of misoprostol in large part on evidence coming from Nigeria. Still, because of political concerns about who should be allowed to distribution this drug that can also be used to terminate unwanted pregnancies, national scaling up of the numerous projects that have been successful in reaching out to women who most need it have been stalled. While much work remains, there are many invested stakeholders and local examples that can spur more action to bring this highly effective intervention to women in need. Once word gets out that there exists an inexpensive, easy-to-use pill that can significantly reduce the leading cause of maternal deaths for women in Nigeria, it will be difficult not to make this available to women everywhere. This work, funded by the McArthur Foundation, has led the way in proving this and hopefully, these lessons learned will be heeded by all states in Nigeria as well as other countries.
### Appendix A. Nigeria Contacts List

<table>
<thead>
<tr>
<th>Organization</th>
<th>Person Contacted</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmada Bello University</td>
<td>Dr. Oladipo Shittu</td>
<td>Deputy Project Coordinator; Professor of Ob/Gyn</td>
</tr>
<tr>
<td></td>
<td>Dr. Fatima Adamu</td>
<td>Coordinator, Sokoto site</td>
</tr>
<tr>
<td></td>
<td>Dr. Clara Ladi Ejembi</td>
<td>Project Director; Department of Community Medicine</td>
</tr>
<tr>
<td>Population and Reproductive Health Initiative (PRHI)</td>
<td>Malam Sabitu</td>
<td>Drug Keeper/Community Oriented Resource Person Chairperson, Drug Revolving Scheme, Yakawada, Zaria</td>
</tr>
<tr>
<td></td>
<td>Godiya Iliya</td>
<td>Drug Keeper/TBA</td>
</tr>
<tr>
<td></td>
<td>Alhaaji Shehu Abbas</td>
<td>Drug Keeper / Community Head (Serki), Tsibiri Community, Zaria</td>
</tr>
<tr>
<td>Society for Family Health (SFH)</td>
<td>Dr. Obinna U. Nwogu</td>
<td>Enterprise Fund Manager &amp; Project Lead</td>
</tr>
<tr>
<td></td>
<td>Dr. Obi Oluigbo</td>
<td>Chief Technical Officer</td>
</tr>
<tr>
<td></td>
<td>Dr. Jennifer Anyanti</td>
<td>Director, Technical Services</td>
</tr>
<tr>
<td></td>
<td>Dr. Ejim</td>
<td>SFH Resource Person, Lagos</td>
</tr>
<tr>
<td></td>
<td>Dr. Johnson</td>
<td>SFH Resource Person, Lagos</td>
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<tr>
<td></td>
<td>Dr. Makwe</td>
<td>SFH Resource Person, Lagos</td>
</tr>
<tr>
<td></td>
<td>Nkiru</td>
<td>Miso team member</td>
</tr>
<tr>
<td></td>
<td>Rekiya Idris</td>
<td>Miso team member</td>
</tr>
<tr>
<td>Population Services International (PSI)</td>
<td>Meghan Butler</td>
<td>Associate Program Manager</td>
</tr>
<tr>
<td></td>
<td>Meredith Center</td>
<td>Program Manager</td>
</tr>
<tr>
<td>Federal Ministry of Health</td>
<td>Dr. Oyeniyi</td>
<td>Miso Desk Officer</td>
</tr>
<tr>
<td></td>
<td>Dr. Bose Adeniran</td>
<td>Director</td>
</tr>
<tr>
<td>Society of Obstetrics and Gynecology of Nigeria (SOGON)</td>
<td>Dr. Fred Achem</td>
<td>President</td>
</tr>
<tr>
<td></td>
<td>Dr. Chris Agboghoroma</td>
<td>Secretary</td>
</tr>
<tr>
<td></td>
<td>Dr. Olusegun Adeoye</td>
<td>Program Manager</td>
</tr>
<tr>
<td>DKT International</td>
<td>Dimos Sakellaridis</td>
<td>Country Director</td>
</tr>
<tr>
<td></td>
<td>Amy Coughlin</td>
<td>Senior Health Systems Advisor</td>
</tr>
<tr>
<td></td>
<td>Uche Ekenna</td>
<td>Director, West Africa Region</td>
</tr>
<tr>
<td>Venture Strategies and Innovation (VSI)</td>
<td>Tarra McNally</td>
<td>Formerly with VSI</td>
</tr>
<tr>
<td></td>
<td>Ndola Prata</td>
<td>Medical Director</td>
</tr>
<tr>
<td>Pathfinder International</td>
<td>Ellen Israel</td>
<td>Senior Advisor</td>
</tr>
<tr>
<td></td>
<td>Habeeb Salami</td>
<td>Reproductive Health Manager</td>
</tr>
<tr>
<td>PATH</td>
<td>Christopher Brady</td>
<td>Market Dynamics Specialist</td>
</tr>
<tr>
<td>Marie Stopes International</td>
<td>Tracey Brett</td>
<td>Head of Procurement</td>
</tr>
<tr>
<td>John Snow International</td>
<td>Nancy Harris</td>
<td>Vice President</td>
</tr>
<tr>
<td>MacArthur Foundation</td>
<td>Dr. Kole Shettima</td>
<td>Director, Africa Office</td>
</tr>
<tr>
<td></td>
<td>Erin Sines</td>
<td>Acting Director, Population and Reproductive Health</td>
</tr>
</tbody>
</table>
### Appendix B. MacArthur Foundation Grants for Misoprostol for Prevention of Postpartum Hemorrhage in Nigeria

<table>
<thead>
<tr>
<th>Name of Grantee/Organization</th>
<th>Purpose</th>
<th>Duration of Grant</th>
<th>Size of Grant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population Services International in partnership with the Society for Family Health (Nigeria)</td>
<td>Support to increase the availability, access, and use of misoprostol for the prevention and treatment of PPH. The project aims to improve acceptance through education and advocacy of misoprostol for postpartum hemorrhage, improve health workers’ knowledge and practices in its use, and produce relevant materials including job aids.</td>
<td>34 months (2011; closed)</td>
<td>$223,000</td>
</tr>
<tr>
<td>Ahmadu Bello University</td>
<td>Testing the feasibility of community-based distribution of misoprostol in two sites within Kaduna and Sokoto states in Nigeria.</td>
<td>36 months (2010; closed)</td>
<td>$300,000</td>
</tr>
<tr>
<td>Society of Gynecology and Obstetrics of Nigeria</td>
<td>Training of service providers on current evidence-based interventions for promoting safe motherhood, including magnesium sulfate for the prevention and treatment of eclampsia and misoprostol for the prevention of postpartum hemorrhage.</td>
<td>36 months (2007; closed)</td>
<td>A portion of $250,000</td>
</tr>
<tr>
<td>Ipas</td>
<td>Build the knowledge and skills of medical interns at three teaching hospitals to provide reproductive and maternal healthcare, including use of magnesium sulfate to treat eclampsia and misoprostol for the prevention of postpartum hemorrhage.</td>
<td>36 months (2013; in force)</td>
<td>$500,000</td>
</tr>
</tbody>
</table>
Appendix C. Work by Other Organizations

There are now other donors who are following the MacArthur Foundation’s lead and supporting work in Nigeria to reduce postpartum hemorrhage through the use of misoprostol. The biggest of these is USAID, which is funding the Targeted States High Impact Project that currently supports training and monitoring of service provision in the states of Bauchi and Sokoto. DKT International, a social marketing group, is also actively distributing misoprostol for postpartum hemorrhage. In addition, the Bill and Melinda Gates Foundation recently invested in primary healthcare strengthening that will include capacity building to improve maternal health outcomes.

**Targeted States High Impact Project**

USAID currently provides funding for the Targeted States High Impact Project (TSHIP), implemented by a consortium led by John Snow, Inc. TSHIP was initiated in Bauchi and Sokoto States and has been launched recently in Gombe State. TSHIP works in communities to increase demand for maternal and child health services. In particular, the project has set up and strengthened community structures for the distribution of health commodities, including safe delivery kits that include supplies for cutting the umbilical cord as well as misoprostol for postpartum hemorrhage. Pathfinder, as part of the TSHIP consortium, is implementing community distribution of misoprostol in Kebbi, along with the use of the anti-shock garment, and has plans to scale up to Zamfara State, once they secure funding. (Pathfinder staff noted that these activities are a direct follow on to work funded by the MacArthur Foundation.)

This initiative could be a breakthrough for community-based prevention of postpartum hemorrhage if what we were told is true—that misoprostol is being included in the safe delivery kits and that these kits are being distributed to pregnant women during antenatal visits. We were also told that the Minister of Health of Sokoto is a champion of the project and that the state has agreed to procure the commodities; the Sokoto State government has issued a purchase order to Marie Stopes International (MSI) for the supply of 56,832 doses of misoprostol. (MSI is supplying the drug at half the market price.) Again, this would greatly legitimate the community-based distribution model and be a great example of the realignment and mobilization of resources—two critical elements required for taking a model to scale.

**DKT International/Nigeria**

DKT International/Nigeria is a social marketing enterprise with wide reach in Nigeria. DKT has its own medical detailing and sales team that distributes products directly to providers, clinics, pharmacies, and Patent Proprietary Medicine Vendor outlets. DKT is currently working with mobile community health extension workers to service specific communities with contraceptives and misoprostol. The extension workers bring the products directly to women in their environment (houses, markets, businesses, associations, etc.) and seek to expand access in areas that lack healthcare facilities, pharmacies, and medicine vendors. DKT has also recently registered a four-tablet misoprostol product—Miso-Fem—that is intended for postpartum hemorrhage prevention (three 200 µg tablets orally) and treatment (four 200 µg tablets sublingually). The single dose packaging is appropriate for direct sales to users. The single dose packs are priced at Naira 250 and sold for less when supplied directly from a clinic or through a health extension worker.
References


11. Interview with a Director at the Federal Ministry of Health, Abuja held on 11th October 2014.


**Acknowledgements**

We thank all those individuals interviewed and their institutions and the women and men who participated in the focus group discussions. A special thanks to the staff of the Society for Family Health for helping to facilitate the community-level focus groups in Gombe, Ogun, and Lagos States, and the Population and Reproductive Health Initiative team for their support and guidance during the focus group discussions in Zaria and environs. We would also like to thank Tarra McNally, who contributed background research to this report.

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