TECHNICAL BRIEF

Reducing Facility-based Maternal and Neonatal Mortality with a Total Market Approach

Lessons from Saving Mothers, Giving Life 1.0 in Nigeria

A mother and her newborn in General Hospital Ogoja, Cross River State, Nigeria. Photo Credit: Seun Asala, 2019.

PATHFINDER
MSD for Mothers
USAID FROM THE AMERICAN PEOPLE
E2A EVIDENCE TO ACTION for Strengthened Reproductive Health

SAVING MOTHERS, GIVING LIFE 1.0

INTRODUCTION

Reducing maternal mortality and ensuring women around the world have equitable access to quality sexual and reproductive health (SRH) information and services is a global health priority. During the Millennium Development Goal era, the global maternal mortality ratio declined by 45%—a significant achievement, but short of the goal of 75%. In 2012, the Saving Mothers, Giving Life (SMGL) initiative set out to fast-track reduction of maternal and neonatal deaths in Nigeria, Uganda, and Zambia[1] by focusing support at the subnational level.[2]

Pathfinder International launched SMGL in Nigeria's Cross River State (CRS) in 2016 in partnership with the Nigerian federal and state government with support from the USAID Evidence to Action project for its public sector work and from MSD for Mothers for its private sector work. In CRS, SMGL used a whole-system approach involving partners ranging from communities to tertiary health care facilities, and a total market approach involving public- and private-sector providers to address the three delays in getting life-saving care:

1. Delay in deciding to seek appropriate medical help for an obstetric emergency;
2. Delay in reaching an appropriate obstetric facility; and
3. Delay in receiving adequate care upon reaching a facility.[3]

Over a three-year period, CRS saw a 66% decrease in maternal mortality from the baseline of 313 to 106 deaths per 100,000 live births in supported facilities. This brief shares lessons and achievements from the implementation of SMGL 1.0 in Nigeria.

A **total market approach** is when public and private partners coordinate to meet the health care needs of a population, leveraging the assets of each partner to maximize the reach, quality, equity, and sustainability of health services.[4] The SMGL **total market cluster approach** involved the creation of clusters of public and private health services to ensure that quality services are accessible and acceptable to women across CRS.

CONTEXT

The first target of Sustainable Development Goal 3 is reduction of the global maternal mortality ratio to less than 70 per 100,000 live births.[5] For this to happen, experts recommend prioritizing universal access to quality essential maternal health services that are tailored to the local context.[6] However, balancing the tradeoffs between quality (effectiveness, efficiency, patient centeredness, safety, and timeliness of care), equity (social, economic, demographic, or geographic) and economy (affordability and efficiency) remains a challenge.[7]

IMPLEMENTATION

SMGL covered all 18 local government authorities in CRS. Among this population of 3.8 million people, the project aimed for a 25% reduction in maternal mortality and 35% reduction in neonatal mortality from the initial baseline of 313 and 58 respectively at supported facilities by 2019.[8] SMGL used a whole system approach, engaging the individual, household, community, and health system levels, and a total market approach, working with public, private, and traditional providers; professional associations; and government stakeholders. These efforts helped to address the three delays and ensure women's ability to seek information, services, and necessary resources (such as emergency transportation) at any point between their homes and appropriate health facilities.

A mother and her twin babies in one of the SMGL supported primary health centers, CRS, Nigeria. Photo Credit: Kazeem Arogundade, 2017.

Delay 1: Delay in deciding to seek appropriate medical help for an obstetric emergency

To address delay 1, SMGL worked with community-based organizations, health volunteers, and traditional birth attendants, using a digital platform named **HelloMama** to educate women and heads of the household on important maternal and newborn health (MNH) issues using voice and text messaging to women and heads of households.[9] Messages included age- and pregnancy-stage-appropriate guidance on the importance of antenatal care (ANC), delivery in a health facility, identifying danger signs, breastfeeding, immunization, and contraception. Women could enroll to receive HelloMama messages while registering for their first ANC visit at any of the 67 SMGL-supported facilities selected for introducing HelloMama. This led to a 32% increase in facility-based childbirth services.

Delay 2: Delay in reaching an appropriate obstetric facility

To address delay 2, SMGL supported the CRS Ministry of Health (MOH) stepwise expansion of emergency obstetric and newborn care (EmONC) services by equipping additional facilities within a cluster to provide the required signal functions. In this **hub-and-spoke model**, each cluster was designed to have at least one comprehensive and four basic EmONC facilities per 500,000 people as per WHO guidelines.[10] The hub-and-spoke model helps to improve coordination among public and private facilities, including efficient referrals, data sharing, accuracy, and transparency. The project also introduced digital referral mechanisms that digitized the paper-based referral system into **CommCare**—an open-source mobile platform designed for data collection, client management, decision support, and behavior change communication—within 10 such clusters **(Figure 1)**. The platform helped to facilitate referrals among all facilities (public, private, primary, secondary, and tertiary) within a cluster, enabling referral tracking and strengthening communication and feedback among the facilities and providers.

In addition, SMGL collaborated with ward development committees to implement a system for emergency transportation. The system addressed barriers such as lack of transportation and necessary funds by helping to provide free transport to pregnant women and new mothers. SMGL catalytic funds—raised by wards by soliciting donations from philanthropic and community organizations and monthly contributions from villages—supported the system. Drivers volunteered to transport pregnant women and new mothers. Pregnant women were given vouchers and driver contact information for any maternity-related emergency. In the event of an emergency, women called drivers directly, presented their vouchers, and were transported to the appropriate health facility.

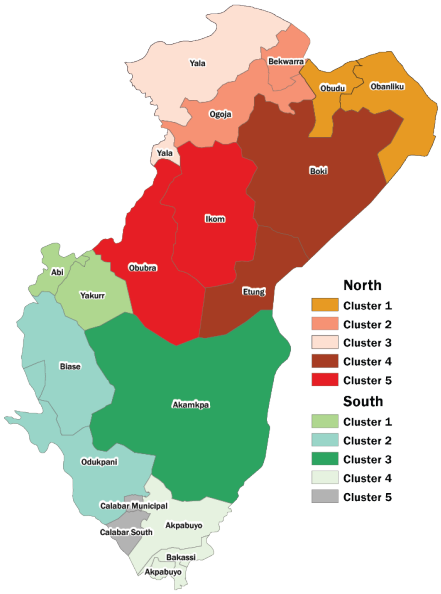


Figure 1. SMGL Implementation Clusters in Cross River State, Nigeria

Delay 3: Delay in receiving adequate care upon reaching a facility

To address delay 3, SMGL focused on improving quality of care in health facilities by partnering with professional organizations to train and mentor 858 providers on quality of care. SMGL's partnerships with the Society of Gynaecology and Obstetrics of Nigeria (SOGON), the Nigerian Society of Neonatal Medicine (NISONM), and the Association of General Private Medical Practitioners of Nigeria (AGPMPN), were instrumental in assessing, improving, and assuring quality of care at both public and private facilities. SOGON and NISONM provided training and mentorship in EmONC, and AGPMPN served as a networking platform to negotiate cost reduction with members for poor clients. With these professional associations, SMGL started a volunteer program at six high-volume secondary facilities, through which obstetric and pediatric specialists paid regular visits to project facilities for on-the-job training. The project used a digital MNH mentorship app, developed in collaboration with professional organizations and aligned with WHO guidelines and standards. The app generates reports on performance and gaps as well as action plans for improvement in antenatal, intrapartum, and postnatal care. SMGL also strengthened health information systems through data monitoring and review; institutionalized Maternal and Perinatal Death Surveillance and Review (MPDSR) by training public and private providers at secondary facilities and introducing electronic

MPDSR in place of paper-based records; supported the development of an integrated supportive supervision checklist; and contributed to improvements in infrastructure, equipment, and supplies.

The 2019 Pathfinder brief "A Whole-System Approach to Saving Mothers in Cross River State, Nigeria" includes project implementation details for addressing each delay.[11] In addition to adopting the three-delay model, the SMGL team recognized the importance of preventing unintended pregnancy. Therefore, the project offered comprehensive family planning services, with a focus on provision of long-acting reversible contraceptives (LARCs) and an emphasis on meeting the needs of first-time parents, to deepen and enrich the initiative. The project engaged with community gatekeepers to generate demand, offered services aimed at statewide coverage—including helping to ensure community-level access by supported the state to implement the MOH task-sharing policy by training community health extension workers to provide LARCs—and strengthened the government of Nigeria's ownership of the program to help ensure sustainability.

PERFORMANCE

SMGL supported 108 facilities, 100 of which were surveyed during the baseline assessment. Multiple baseline and formative assessments preceded implementation, including the following:

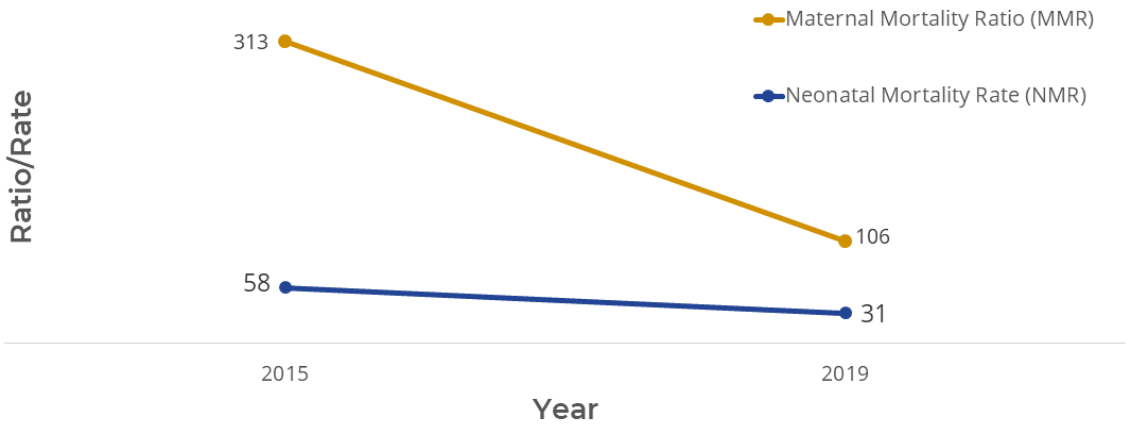
- Baseline assessment of 812 health facilities for readiness to provide EmONC services. (This assessment provided information on the EmONC status in the state and informed the selection of supported facilities.)
- Geospatial assessment of facilities providing EmONC to see if they could be reached within two hours, adjusting for vehicle availability and means of communication.
- Baseline mapping of 1,814 traditional birth attendants/faith-based birth attendants (TBAs/FBBAs) and 1,218 proprietary patent medicine vendors in the catchment communities of supported facilities for location and services provided.
- Qualitative study among TBAs/FBBAs to understand their role in childbirth and the sociocultural norms and practices influencing noninstitutional deliveries. The study included focus group discussions with mothers and fathers of children younger than two, and key informant interviews with elderly women (grandmothers and mothers-in-law), traditional rulers, religious leaders, public and private health care workers, and TBAs/FBBAs.

Table 1. Summary of Change in Key Performance Indicators from Baseline to Endline

Indicator	Baseline	Endline	% Change
Total number of women receiving ANC at a facility	66,963	74,911	**12%**
Number of women who had 4th ANC visit	6,117	8,988	**47%**
Number of women delivering in a facility	13,472	17,727	**32%**
Percentage of facilities with basic EmONC (BEmONC)	16%	30%	**14%**
Percentage of facilities with comprehensive EmONC (CEmONC)	0%	18%	**18%**
Percentage of facilities with vouchers or funds for emergency transportation during referral	3%	57%	**54%**
Percentage of facilities that provided LARCs in the past 3 months	69%	85%	**16%**
Percentage of facilities that routinely use a partograph to manage labor	50%	99%	**49%**
Percentage of facilities that own a cellphone (& used it for referral in past month)	9%	62%	**53%**

SMGL used a similar approach to gather endline data four years later **(Table 1)**. Data from 106 out of the 108 supported facilities (2 facilities were not assessed due to security reasons) showed significant reductions in facility maternal mortality and neonatal mortality rates from baseline to endline, by 66% and 47% respectively **(Figure 2)**.

Figure 2. Reduction in Institutional Maternal and Neonatal Mortality Among SMGL-Supported Facilities (HMIS data, MMR out of 100,000 Live Births and NMR out of 1,000 Live Births)



During project implementation, the significant role of TBAs/FBBAs in maternal health and in sociocultural norms and practices that influence home deliveries in CRS was evident. A qualitative study lent insights into reasons for home delivery by TBAs/FBBAs, including the following:

- Lack of physical and financial access to health facilities;
- Perceived quality of services (lack of respectful care that meets clients' physical, emotional, and spiritual needs);
- Fear of surgical interventions in health facilities;
- Social and cultural influences; and
- Low awareness of the benefits of facility delivery.[12]

The study also revealed that the majority of TBAs/FBBAs were willing to promote institutional deliveries, especially if provided with an alternate source of income. SMGL took the influence and dedication of TBAs/FBBAs into consideration when designing and implementing the project interventions. The study findings helped inform SMGL's training of TBAs/FBBAs, in collaboration with CRS Primary Health Care Development Agency (PHCDA) and the MOH, on identifying early danger signs, acting as referral agents, and escorting pregnant women to health facilities.

The inclusion of TBAs/FBBAs in SMGL helped to maintain their vital position and garner recognition as maternal health champions in their communities. It also generated demand and increased uptake for antenatal and delivery services. More research is needed on the potential long-term benefits of shifting or expanding the roles of TBAs/FBBAs to include creating awareness and demand in the community, providing birth companionship at the facility, and assisting women with prayers during delivery.

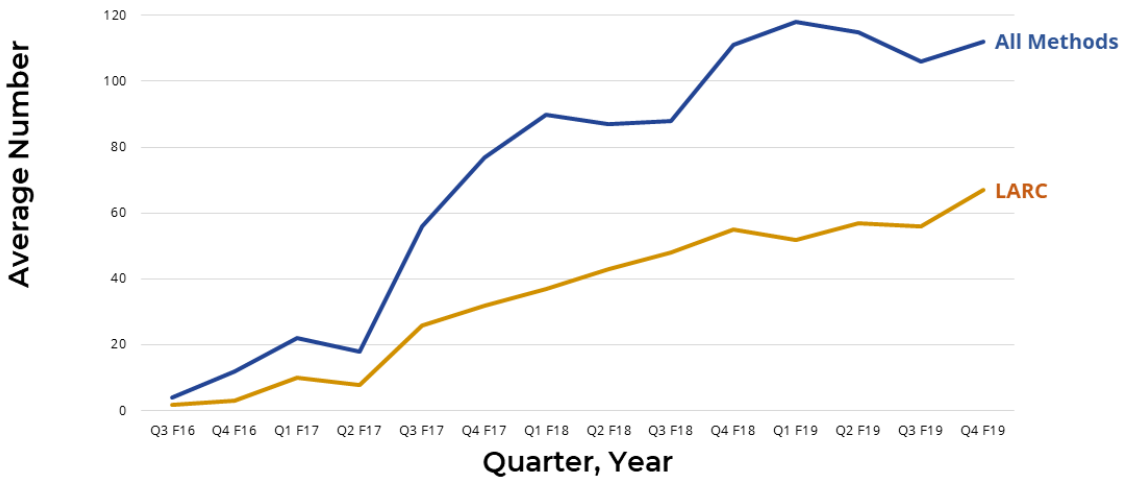
Maternal death secondary to obstructed labor fell from 49% to 12%, and the fresh stillbirth rate decreased from 3% to 1%. The project also demonstrated improvements in intrapartum and postnatal care **(Table 2)**, likely due to better access to CEmONC and BEmONC facilities and investment in quality of care. Geospatial analysis at endline showed a 2% reduction in travel time and improved access to comprehensive and basic EmONC facilities.[13]

Table 2. Changes in Lifesaving Intrapartum Care from 2015-2019 in SMLG-supported Facilities (HMIS data)

Indicator	Baseline	Endline	% Change
% live births put to breast and kept warm within 30 minutes of birth in a health facility	38%	98%	158%
% newborns not breathing or having great difficulty breathing but are resuscitated and are able to breathe	85%	97%	14%
% women who delivered who received uterotonics in the third stage of labor (active management of third stage of labor)	54%	99.6%	84%
% live births performed as C-sections	21%	15%*	-28%
# births in supported facilities	13,675	18,042	32%
% all births that are livebirths	95%	97%	2%
**Note: UNICEF/WHO/UNFPA recommends a C-section rate between 5% and 15% of all births, based on estimates from a variety of sources. Rates less than 5% may indicate inadequate availability and/or access to emergency obstetric care. Rates above 15% suggest overuse of the procedure for non-emergency reasons.*			

Preventive services such as access to family planning services, and particularly the provision of LARCs, was an integral part of SMGL in CRS. These efforts positively influenced overall contraceptive uptake, especially LARC use **(Figure 3).**

Figure 3. Average Number of New Acceptors of Family Planning Methods per Facility per Quarter



MONITORING

The project mainstreamed monitoring into the district health information system (DHIS2) and collected data on uptake of services (ANC, delivery, postnatal care, family planning), quality of care (e.g., deliveries monitored with a partograph, newborns with birth asphyxia successfully resuscitated, and women who received uterotonics in the third stage of labor) and maternal and neonatal deaths in project-supported facilities. Health facilities reviewed their data every month with staff. Quarterly data review at the state level included facility heads and representatives from the MOH and Primary Health Care Development Agency. This data was triangulated with data from the mentorship app to improve performance.

SUSTAINABILITY

SMGL was aligned with global and national priorities for sustainable impact at scale, and the team worked closely with the government and other stakeholders to ensure continuation of the interventions beyond the life of the project. Strategies to help ensure sustainability included the following:

- Orienting 116 ward development committee (WDC) members in wards supported for Emergency Transport System (ETS) on the SMART advocacy approach. Of the 58 WDCs that implemented ETS, 47 (81%) have developed funding mechanisms, including ascribing a percentage of community-generated revenue to ETS to sustain the scheme beyond the life of the project.
- Facilitating the development of a memorandum of understanding (MOU) between the CRS MOH and the University of Calabar Teaching Hospital for continued technical assistance, service provision, and clinical mentorship in high-burden sites through rural posting of resident doctors and specialists from SOGON.
- Conducting technical assistance, trainings, review meetings, and supportive supervision activities jointly with the public sector, in addition to maintaining robust working relationships with SOGON, NISONM, and teaching universities.
- Transitioning the TBA escort service, provision of safe delivery kits, and evidence-based MNH trainings to the government of CRS using platforms such as the Saving One Million Lives program-for-results (SOML-PforR), an initiative launched by the President of Nigeria in response to the poor maternal and child health outcomes in the country.
- Mandating health facilities to institutionalize data review and MPDSR meetings and leverage internally generated revenues to fund these meetings moving forward.
- Integrating referral network meetings into existing local-government-heads-of-unit meetings.
- Adopting the national integrated supportive supervision (ISS) checklist, strengthening the capacity of existing ISS teams at the state and local levels to use the checklist, and creating a budget line for ISS through the SOML workplan.

LESSONS LEARNED

- **The whole system total market approach, guided by the three-delays model, works.** The reduction in overall maternal mortality, fresh still births, and deaths due to obstructed labor indicate the value of using the three-delays model to help ensure that pregnant women can access timely, lifesaving EmONC services and quality intrapartum care. Project interventions that linked the community to facilities, such as community sensitization and an efficient emergency transport system, decreased home deliveries and increased facility-based deliveries. The SMGL approach improved quality of care at both high- and low-volume facilities.
- **Engaging key stakeholders from the beginning is key to successful, sustainable, scalable interventions.** Improved access to family planning and EmONC services and reduced facility-based maternal mortality were possible due to collaboration with MOH and professional associations. Institutionalization of scalable solutions such as electronic MPDSR and task sharing for LARC service provision was a result of SMGL alignment with MOH priorities. Involvement of professional associations in developing evidence-based training materials, providing training and mentorship, and running volunteer programs have demonstrable valuable in sustaining health-systems capacity beyond the life of the project.[14]
- **The private sector plays a vital role in increasing access to lifesaving care.** Improvements in travel time and access to CEmONC and BEmONC in both public and private facilities within a cluster ensured availability of all signal functions and trained providers. The geospatial analysis of health facilities showed that private-sector involvement was critical for access to and coverage of CEmONC within the recommended two-hour period, especially in rural areas. It also allowed women to switch between public and private providers to meet their health needs. Involvement of the private sector led to improved linkages between public and private facilities, better quality of care, and expanding access to all MNH services along the care continuum.

CONCLUSIONS

SMGL successfully addressed all three delays in CRS of Nigeria. The whole system total market approach showed the feasibility and effectiveness of improving all levels of care and involving the private sector in strengthening health-systems capacity. The project confirmed that investment in addressing delays 1 and 2 are critical to ensure equitable access to lifesaving MNH services in countries like Nigeria with low institutional deliveries rates. Furthermore, addressing delay 3 by improving availability and quality of care at EmONC facilities is paramount in reducing facility maternal mortality rates.

NOTES

1 Conlon, Claudia Morrissey, Florina Serbanescu, Lawrence Marum, Jessica Healey, Jonathan LaBrecque, Reeti Hobson, Marta Levitt, et al. "Saving Mothers, Giving Life: It Takes a System to Save a Mother." Global Health: Science and Practice 7, no. Supplement 1 (March 11, 2019): S6–26. https://doi.org/10.9745/GHSP-D-18-00427.

2 Quam, Lois, Angeli Achrekar, and Robert Clay. "Saving Mothers, Giving Life: A Systems Approach to Reducing Maternal and Perinatal Deaths in Uganda and Zambia." Global Health: Science and Practice 7, no. Supplement 1 (March 11, 2019): S1–5. https://doi.org/10.9745/GHSP-D-19-00037.

3 Thaddeus, Sereen, and Deborah Maine. "Too Far to Walk: Maternal Mortality in Context." Social Science & Medicine 38, no. 8 (April 1994): 1091–1110. https://doi.org/10.1016/0277-9536(94)90226-7.

4 "Total Market Approach." n.d. Washington, DC: USAID. Accessed August 3, 2021. https://www.fpfinancingroadmap.org/learning/specific-topics/total-market-approach.

5 "Take Action for the Sustainable Development Goals." New York, NY: United Nations. Accessed July 24, 2020. https://www.un.org/sustainabledevelopment/sustainable-development-goals/.

6 Koblinsky, Marjorie, Cheryl A Moyer, Clara Calvert, James Campbell, Oona M R Campbell, Andrea B Feigl, Wendy J Graham, et al. "Quality Maternity Care for Every Woman, Everywhere: A Call to Action." The Lancet 388, no. 10057 (November 2016): 2307–20. https://doi.org/10.1016/S0140-6736(16)31333-2.

7 Sorato, MM, AA Asl, and M Davari. "Improving Health Care System Efficiency for Equity, Quality and Access: Does the Healthcare Decision Making Involve the Concerns of Equity? Explanatory Review." J Health Med Econ 6, no. 1 (2020): 45.

8 "A Whole-System Approach to Saving Mothers in Cross River State, Nigeria." Watertown, MA, USA: Pathfinder International, 2019. https://www.pathfinder.org/publications/a-whole-system-approach-to-saving-mothers-in-cross-river-state-nigeria/.

9 "HelloMama: Improving Maternal, Newborn and Child Health (MNCH) Using Digital Health Platforms." Watertown, MA, USA: Pathfinder International, 2019. https://www.pathfinder.org/publications/hellomama-improving-maternal-newborn-and-child-health-mnch-using-digital-health-platforms/.

10 Monitoring Emergency Obstetric Care: A Handbook. 2009. World Health Organization, UNFPA, UNICEF, and Mailman School of Public Health. https://www.who.int/reproductivehealth/publications/monitoring/9789241547734/en/.

11 "A Whole-System Approach"

12 "Community-Based Assessment on Roles of Traditional Birth Attendants in Maternal Health and Sociocultural Norms and Practices Influencing Non-Institutional Deliveries in Cross River State, Nigeria." 2019. Watertown, MA, USA: Pathfinder International.

13 "Nigeria - Accessibility to EmONC Facilities in the State of Cross River." Washington, DC: USAID, 2016. https://pdf.usaid.gov/pdf_docs/pa00mdwb.pdf; Ebener, Steeve, Karin Stenberg, Michel Brun, Jean-Pierre Monet, Nicolas Ray, Howard Lawrence Sobel, Nathalie Roos, et al. "Proposing Standardised Geographical Indicators of Physical Access to Emergency Obstetric and Newborn Care in Low-Income and Middle-Income Countries." BMJ Global Health 4, no. Suppl 5 (June 2019): e000778. https://doi.org/10.1136/bmjgh-2018-000778.

14 Chamberlain, J., R. McDonagh, A. Lalonde, and S. Arulkumaran. "The Role of Professional Associations in Reducing Maternal Mortality Worldwide." International Journal of Gynecology & Obstetrics 83, no. 1 (October 2003): 94–102. https://doi.org/10.1016/S0020-7292(03)00185-1.

Project Overview: Saving Mothers, Giving Life (2012-2017) was a United States government-led public-private partnership that used a systems approach at the district level to reduce maternal and newborn mortality in Uganda and Zambia. The program aimed to reduce maternal and newborn mortality by ensuring every pregnant woman has access to quality, respectful care during pregnancy, labor, and delivery, and, in the event of a complication, life-saving care within two hours.

Contributors: Dr. Amina Aminu Dorayi, Yemisi Erhunwunse, Dr. OluwaYemisi Femi-Pius, Liz Futrell, Dr. Farouk Jega, Ogochukwu Kehinde, Dr. Jean Jose Nzau Mvuezolo, Dr. Yordanos Molla

Pathfinder International is supported by funding from MSD, through MSD for Mothers, the company's global initiative to help create a world where no woman has to die while giving life. MSD for Mothers is an initiative of Merck & Co., Inc., Kenilworth, NJ, U.S.A.

Suggested Citation: "Reducing Facility-based Maternal and Neonatal Mortality with a Total Market Approach: Lessons from Saving Mothers Giving Life 1.0 in Nigeria." 2021. Watertown, MA, USA: Pathfinder International.

Pathfinder International
9 Galen Street
Watertown, MA 02472, USA
+1 617 924 7200

Pathfinder International in Nigeria
No 35
Justice George Sowemimo Street
Asokoro, Abuja, Nigeria
+234 9 291 6282

PATHFINDER

pathfinder.org | @pathfinderInt: