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On the Frontlines of Community Health: An Endline Evaluation of a Village Health Worker Program in Borno State, Nigeria

May 2022



The Women's Refugee Commission (WRC) improves the lives and protects the rights of women, children, and youth displaced by conflict and crisis. We research their needs, identify solutions, and advocate for programs and policies to strengthen their resilience and drive change in humanitarian practice.

Acknowledgments

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Datasets collected for the evaluation may be made available to consortium partners for secondary data analysis upon request to the BSPHCDA and WRC.

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Cover photo: A village health worker in Borno State, Nigeria, conducts a middle-upper arm circumference (MUAC) test on a young child. The test serves as a quick diagnostic of acute or severe malnutrition. © Bintu Bukar Imam, Borno State Primary Health Care Development Agency.

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Executive Summary

The humanitarian crisis in Northeast Nigeria remains one of the grimmest in the world. As of February 2022, 8.3 million people were in need of urgent humanitarian assistance as they faced limited access to basic health care and other essential services.¹ The ongoing conflict continues to affect millions of people, forcing them into new or recurring displacement, threats of violence, and poverty. As of December 2021, there were 1.7 million internally displaced persons (IDPs) in Borno State, the epicenter of the crisis, who face alarming health and protection needs. These adversities have been exacerbated by COVID-19, which has complicated the response.²

In 2017, the Women's Refugee Commission (WRC) received funding from the Bill & Melinda Gates Foundation for the Reproductive, Maternal, Newborn, Child, and Adolescent Health and Nutrition (RMNCAHN) Project, including its cornerstone component, the Village Health Worker (VHW) Program, to address the conflict-driven health crisis in Borno State. The project adopted a localized approach to strengthen public health systems within the state. Coordinated by WRC, the RMNCAHN Project brought together five partners: the Borno State Primary Health Care Development Agency; the Mwada-Gana Foundation; M-Space; i+solutions; and a long-term research consultant.

The federal government of Nigeria's minimum standards for primary health centers, including for RMNCAHN services and associated personnel, include minimum standards of equipment and personnel required to deliver the optimal treatment for citizens. However, the ongoing conflict in Borno inhibits these standards from being realized in the state. People living in Borno face alarming health and protection needs; according to the latest estimates as of 2020, only 30 percent of the health facilities were fully functioning (OCHA, 2022). These adversities were exacerbated by COVID-19, which increased the number of people in need of humanitarian assistance and complicated the response.³ Coordination between government entities, national and community-based organizations, and international partners is essential for timely, effective, and quality RMNCAHN services to displaced and host communities in Borno.

The RMNCAHN Project aimed to support The Borno State Primary Health Care Development Agency to decrease the morbidity and mortality rates of women, newborns, children, and adolescents through building the capacity of VHWs to improve families' health-seeking behavior and RMNCAHN practices, while advancing the quality of health care provided through complementary interventions. The project developed a targeted community health curriculum, linked to standards in community health programming while tailored to the Borno State context and communities, and a tailored monitoring system. The Borno State Primary Health Care Development Agency, with support from the Mwada-Gana Foundation, trained and deployed 219 VHWs in three local government authorities (LGAs).

The endline assessment aimed to gather information on the effects of the project among households in two of the selected LGAs, Mafa and Bayo, in order to assess the success of the project for accountability and learning. By June 2021, VHWs had conducted more than 50,000 household visits across these two LGAs. The RMNCAHN Project was implemented in a third location, Kaga LGA, for only five months; therefore, this LGA was not included in the endline assessment. The assessment employed mixed methods, including key informant interviews with senior VHWs; focus group discussions with community members and VHWs; and secondary analysis of program monitoring data. The study procedures were reviewed and received approval from the Borno State Ministry of Health Research Ethics Committee (MOH/GEN/6679/1) prior to data collection.

1 OCHA, Nigeria | Global Humanitarian Overview 2022. <https://gho.unocha.org/nigeria>.

2 OCHA, Nigeria | Situation Reports 2021. <https://reports.unocha.org/en/country/nigeria>.

3 Ibid.

Our key findings

- Monitoring data and endline consultations with community members and VHW staff suggested that the VHW Program was effective in increasing demand for RMNCAHN services. The VHW Program improved health-seeking behavior at facilities through provision of information to households, referrals, and a community-based emergency transportation system.
- Endline consultations with community members, including VHWs, indicated that the communities felt ownership and acceptance of the program.
- Overall, monitoring data and consultations with community members, including VHWs and senior VHWs, showed improvements in community health behaviors, including use of contraceptives, facility-based delivery, antenatal and postnatal care, and newborn and child health and nutrition services.
- Although demand for health services increased, community members reported that lack of access to drugs and commodities for RMNCAHN services limited their access to health care and deterred them from seeking care. Some reported relying on traditional methods instead as a result. Other barriers to seeking care included resistance from men and challenges with engaging adolescents in the households around sexual and reproductive health (SRH) issues.

Our top recommendations

It is essential that the government of Nigeria prioritize access to and use of RMNCAHN services to communities in Borno. The endline assessment shows promising results that justify the continuation and scale-up of the VHW Program model, or similar community-based community health programming, with appropriate adaptations, to other LGAs in Borno.

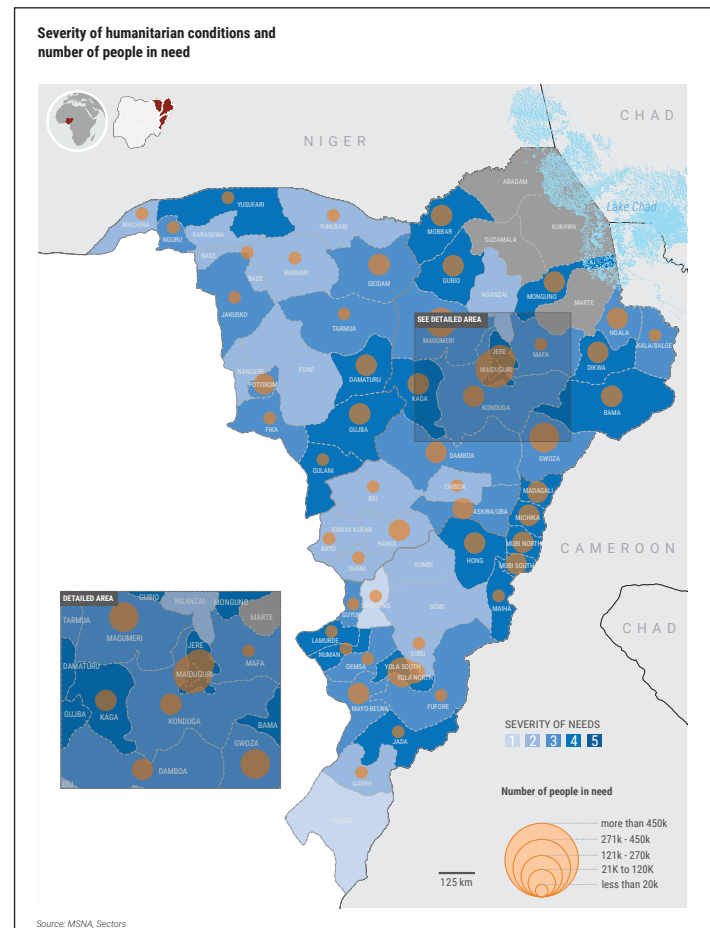
- **The Borno State Primary Health Care Development Agency and Borno State Ministry of Health should improve supply chain management** to ensure health facilities are stocked with essential drugs, commodities, and supplies. They should also implement task-sharing/ task-shifting guidelines by equipping community-level workers with medicines approved for community-based distribution (such as paracetamol, zinc, iron, emergency contraceptive pills, condoms), after appropriate training.
- **The Borno State Primary Health Care Development Agency should strengthen community-based acceptance and promotion of RMNCAHN** by implementing targeted efforts to strengthen programming that supports gender-transformative attitudes and behavior change around sexual reproductive health and rights (SRHR); expanding efforts to reach men and boys; conducting targeted efforts to reach adolescents; and hiring and training additional VHWs to ensure programming reaches the most remote or isolated communities.
- **Donors should support quality RMNCAHN service provision by expanding the VHW Program** or similar community health programming to reach additional areas in Borno; supporting availability of commodities in health facilities and strengthening government ownership and capacity to ensure commodity security; and continuing to support diverse, equitable partnerships that facilitate high quality programming and research and promote women-led organizations and civil society to drive durable community-grounded health solutions.

I. Introduction

The humanitarian crisis in Northeast Nigeria remains one of the grimmest in the world. As of February 2022, 8.3 million people were in need of urgent humanitarian assistance as they faced limited access to basic health care and other essential services.⁴ The ongoing conflict, resulting from insurgencies by militant terrorist groups, continues to affect millions of people, forcing them into new or recurring displacement, threats of violence, and poverty. As of December 2021, there were 1.7 million internally displaced persons (IDPs) in Borno State, the epicenter of the crisis, who face alarming health and protection needs. These adversities have been exacerbated by COVID-19, which has complicated the response.⁵

As of 2020, only 30 percent of health facilities in Borno State were fully functioning.⁶ Meanwhile, across Northeast Nigeria, 1.7 million women of reproductive age required reproductive health care and support⁷ and over 50,000 live births faced complications.⁸ COVID-19 has weakened health systems and persistent insecurity causes frequent turnover among health workers. Therefore, Borno State faces a dearth of skilled health workers to provide RMNCAHN services.⁹ For those primary health services that are functional, most operate only during daylight hours because health workers are not comfortable working at night due to safety concerns.¹⁰ Moreover, the threat of violence deters displaced pregnant women, postnatal mothers, and others living in affected communities from accessing available RMNCAHN services in health facilities.¹¹

The federal government of Nigeria's minimum standards for primary health centers, including for RMNCAHN services and associated personnel, specify the essential personnel and equipment required to deliver the optimal health care for citizens, with detailed specifications for women, children,



From Nigeria Humanitarian Needs Overview 2022 (February 2022), OCHA. reliefweb.int/report/nigeria/nigeria-humanitarian-needs-overview-2022-february-2022.

4 OCHA (2022).

5 Ibid.

6 WHO Regional Office for Africa, *WHO-EU Partnership Targets 600,000 People with Integrated Healthcare in Borno State* (2020). <https://www.afro.who.int/news/who-eu-partnership-targets-600000-people-integrated-healthcare-borno-state>.

7 Ibid.

8 OCHA (2021).

9 Ibid.

10 Ibid.

11 Ibid.

and infants.¹² Mandated services at the primary health level include but are not limited to maternal, newborn, and child health, family planning, nutrition counseling, and mental health care. However, the ongoing conflict in Borno interferes with realizing these standards in the state. Coordination among government entities, local organizations, and international partners is therefore essential to delivering timely, effective, and quality RMNCAHN services to displaced and host communities in Borno.

The Women’s Refugee Commission (WRC) provided funding and technical support, under a generous grant from the Bill & Melinda Gates Foundation, to the Borno State Primary Health Care Development Agency (BSPHCDA) and other local organizations to implement the RMNCAHN Project to increase access to and uptake of these services, in turn improving health outcomes. The BSPHCDA is the state-level entity under the National Primary Health Care Development Agency, a parastatal of Nigeria’s Federal Ministry of Health focused on improving the effectiveness and efficiency of primary health care delivery in Nigeria. The RMNCAHN Project, including its cornerstone component, the Village Health Worker (VHW) Program, aimed to support the Borno State Primary Health Care Development Agency to decrease morbidity and mortality rates of women, newborns, children, and adolescents through building the capacity of VHWs to improve families’ health-seeking behavior and RMNCAHN practices, while advancing the quality of health care provided through complementary interventions.

Problem statement

According to the Demographic and Health Survey, RMNCAHN outcomes in Borno State improved overall between 2013 and 2018; however, maternal and newborn health outcomes remain among the worst in the world. Contraceptive use among women is extremely low. From 2013 to 2018, there was a small increase, from 1.8 percent to 5.4 percent, in the use of modern contraceptive methods¹³ among women and adolescent girls aged 15–49 years in Borno.^{14,15} However, teenage pregnancy¹⁶ rates remain high – almost 15 percent of women aged 15–19 had a child or were pregnant in 2018.¹⁷ The percentage of deliveries inside health facilities in Borno increased between 2013 and 2018; however, in 2018 the great majority of deliveries in Borno still occurred outside of health facilities (83 percent in 2013,¹⁸ and 74 percent in 2018¹⁹). Notably, any improvements between 2013 and 2018 may have deteriorated since then due to heightened barriers to health services amidst ongoing conflict and COVID-19.²⁰

Newborn and child health indicators showed mixed results during the same period. As of 2018, 31.2 percent of newborns in Borno State had a postnatal check-up within two days of birth,²¹ compared to 2.7 percent in 2013.²² In 2018, approximately 31 percent of children aged 12–23 months received all basic vaccinations,²³ compared to only 9.7 percent in 2013. However, as of 2018, 22.7 percent of children in Borno still had received no vaccinations at all.²⁴ Some measures of child malnourishment

12 NPHCDA, National Primary Health Care Development Agency, *Minimum Standards for Primary Health Care in Nigeria* (2015). www.medbox.org/countries/minimum-standards-for-primary-health-care-in-nigeria/preview.

13 Modern contraceptive methods are defined as defined as female sterilization, male sterilization, the intrauterine contraceptive device (IUD), implants, injectables, the pill, condoms, and the lactational amenorrhea method (LAM).

14 National Population Commission (NPC) [Nigeria] and ICF International, *Nigeria Demographic and Health Survey 2013* (2013).

15 NPC [Nigeria] and ICF, *The Federal Republic of Nigeria Nigeria Demographic and Health Survey 2018* (2018).

16 Teenage pregnancy is defined as either having had a live birth or being currently pregnant with a first child as a 15–19-year-old.

17 NPC [Nigeria] and ICF (2018).

18 Ibid.

19 Ibid.

20 OCHA (2021).

21 NPC [Nigeria] and ICF (2018).

22 NPC [Nigeria] and ICF (2013).

23 NPC [Nigeria] and ICF (2018).

24 Ibid.



rates became less severe, yet malnutrition remains a challenge. For example, in 2018, 17.0 percent of children were underweight for their height (defined as below -2 standard deviations in weight for height)²⁵ compared to 28.2 percent in 2013.²⁶ In contrast, stunting, defined as below -2 SD in height for age, increased from 26.8 percent in 2013²⁷ to 48.1 percent in 2018.²⁸

II. RMNCAHN Project

Overview

To address RMNCAHN needs in Borno State, WRC, with funding from the Bill & Melinda Gates Foundation, financed five consortium partners to design and implement a set of community and primary health interventions in Borno State. BSPHCDA, with support from the consortium of NGO partners, designed and implemented the VHW Program and Complementary Interventions (hereafter referred to as the “RMNCAHN Project”) in three local government areas (LGAs) to increase access to RMNCAHN services in Borno.

The aim of the VHW intervention component (hereafter referred to in the report as the “VHW Program”) was to develop a cadre of community health workers trained to go door to door within their communities to provide information about primary health care and nutrition, encourage health-seeking behavior, and refer community members to nearby health facilities. Four complementary interventions aimed to improve access to and quality of RMNCAHN care provided in health facilities in the communities where the VHW Program was implemented. 1) The primary health center (PHC) intervention was designed to address gaps in health worker capacity at PHCs in the three LGAs. 2) The supply chain intervention aimed to improve availability of the supplies needed to provide RMNCAHN services at the health facilities. 3) The emergency transport component was designed to provide transportation to health facilities for community members in medical distress. 4) Finally, the policy component sought to improve the enabling policy environment for provision of community and primary health services in Borno State.

Project consortium

The RMNCAHN Project’s package of interventions was implemented primarily through BSPHCDA, with technical support from WRC and four consortium partners. BSPHCDA was responsible for leading implementation of the RMNCAHN Project, including the VHW Program, and WRC was responsible for providing technical support, oversight, and partner coordination. Other partners were: 1) Mwada-Gana Foundation, a local community-based organization that provided day-to-day project management and technical support to BSPHCDA; 2) i+solutions, a procurement and logistics agency with an office in Nigeria, which provided support to BSPHCDA to strengthen supply chain management and commodity availability for RMNCAHN; 3) M-SPACE, a Nigerian organization that provided advocacy and policy support to BSPHCDA to improve the enabling environment; and 4) a research and monitoring and evaluation (M&E) consultant responsible for conducting a needs assessment to inform the design of the RMNCAHN Project, managing the VHW M&E system, and conducting an endline assessment to assess its impacts.

25 NPC [Nigeria] and ICF (2018).

26 NPC [Nigeria] and ICF (2013).

27 Ibid.

28 NPC [Nigeria] and ICF (2018).



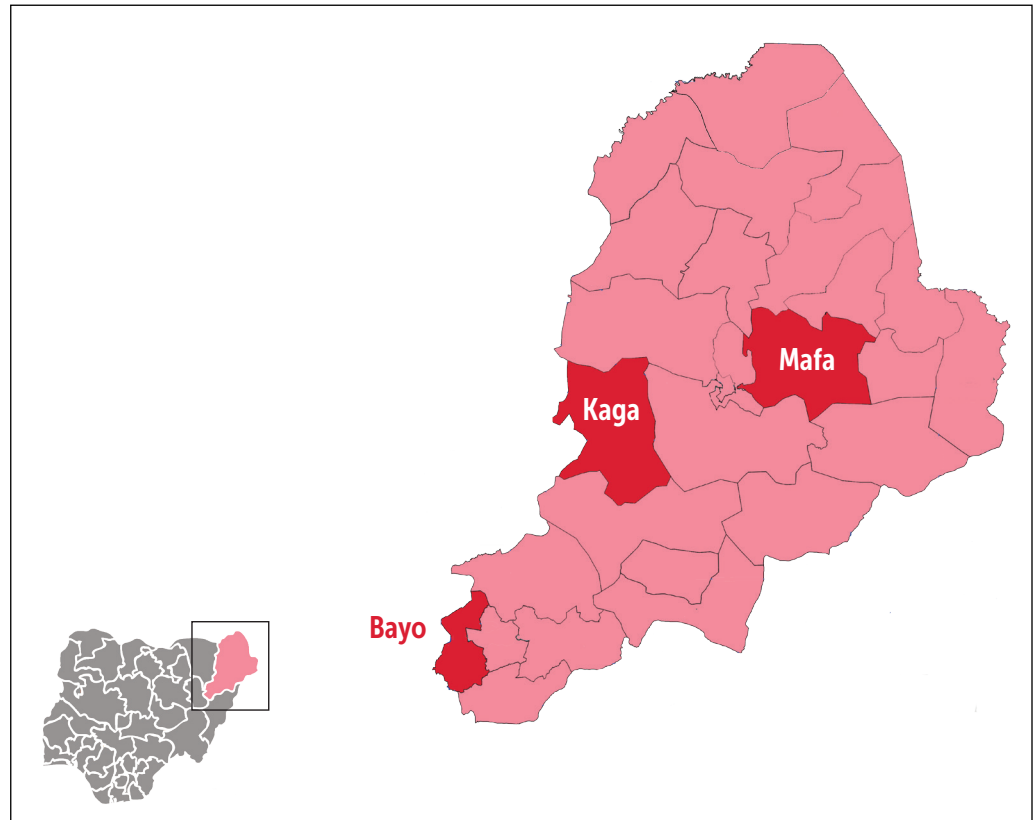
Village Health Worker Program materials and tools for distribution at launch in Bayo. © Bintu Bukar Imam, at the Bayo training and program launch, 2018.

Theory of change

The overall purpose of the RMNCAHN Project was to increase access to and uptake of quality RMNCAHN services for women, newborns, children, and adolescents, with the goal of improving community health outcomes and preventing morbidity and mortality. To achieve this overall objective, the project primarily leveraged WRC staff time and sub-grants to partners based in Nigeria to lead implementation of the project. WRC committed to supportive, consensus-driven partnership approaches and processes and selected partners that shared a set of values and commitments as mission-driven public sector and civil society actors. Through a package of interventions to deploy VHWs, strengthen facility-based health worker capacity, improve supply chains and emergency transportation systems, and strengthen RMNCAHN policies, the team set out to achieve the following key outputs: a suite of materials developed to implement and monitor the VHW Program, including a training curriculum, job aids, and M&E tools; recruited, trained, and deployed VHWs; improved RMNCAHN service delivery capacity among health care providers working at nearby health facilities; improved capacity and coordination among state and local health and logistics officials to manage supply chains for RMNCAHN; and supportive state-level policies enacted. Short-term outcomes focused on expanded community workforce through training and deployment of VHWs, increased health-seeking behaviors and demand for services at PHCs, and improved capacity of PHCs to meet the demand for and provide high-quality RMNCAHN services, including supplies. The medium-term outcomes targeted improvements in household RMNCAHN practices and increased state and local capacity to provide greater coverage of quality RMNCAHN services in Borno State. The long-term outcomes focused on improved health status of the population and a strengthened state health system. See Theory of Change in Annex 1.

Implementation sites

The team developed and applied rigorous criteria to select implementation sites, including political geography (one location was selected each in the northern, central, and southern zones of the state); safe and consistent road access to and from Maiduguri, the state capital, so that state government staff could travel to each location for training and monitoring; and a minimum of one functional primary health care facility staffed by at least one community health extension worker



(CHEW) or higher-level provider to ensure that when VHWs generated demand for health services, community members would be able to seek and receive care at nearby PHCs. The project team used these criteria, along with population data and vulnerability indexes, to make the final site selections. Originally, the team selected Mafa LGA in the central zone, Damboa LGA in the southern zone, and Monguno LGA in the northern zone; however, due to deteriorating security in and on the roads to Damboa and Monguno, the team decided to select alternative LGAs: Bayo LGA in the southern zone and Kaga LGA in the northern zone. The RMNCAHN Project was implemented in the communities of Tamsu-Ngamdua in Mafa LGA, Briyel and Gamadadi in Bayo LGA, and Benisheikh in Kaga LGA.

Intervention components

The VHW Program

The cornerstone of the RMNCAHN Project was the VHW Program, which supported the recruitment of community members from the three selected LGAs. VHWs were selected based on several criteria; they were women between the ages of 18 and 50, currently living in the community, with some literacy in English and a local language (Hausa or Kanuri). The VHW team worked with community leaders to recruit potential candidates, who were then screened using a basic literacy comprehension test before being invited for training. Candidates who passed the literacy test and were confirmed to live in the target communities participated in a three-week training course where they were trained to go door to door in their communities, providing households with information and messaging on basic RMNCAHN practices to improve health-seeking behaviors, along with referral services to PHCs to access services. Candidates who successfully completed the full three-week training course became VHWs.

VHWs conducted four different types of household visits. 1) *Routine visits* to all households in VHWs' catchment areas were conducted quarterly to assess basic health and nutrition practices, provide information and education about RMNCAHN, and strengthen health promotion and health-seeking behavior, including referrals to health facilities. 2) *Targeted visits* for pregnant and postnatal women and newborns were scheduled based on stages of pregnancy and newborn development, with tailored messaging for each stage. 3) *Emergency visits* were conducted as needed for pregnant and postnatal women, newborns, and children in distress, with referrals for urgent care at nearby PHCs. 4) Finally, *follow-up referral visits* were conducted with previously referred community members to check referral completion and ensure treatment was received. The vast majority of visits were completed in person; however, following the outbreak of COVID-19, the program also used a protocol for remote home visits.

Senior village health workers (SVHWs) supervised VHWs and supported data management. SVHWs were selected based on outstanding performance during the VHW training and willingness to take on a leadership role. They were trained to serve as supervisors and manage monthly monitoring data by collating and reporting data collected by VHWs from the households. SVHWs were integrated into the supervision structures of the primary health care system, with SVHWs reporting to community health extension workers at referral PHCs or the LGA-level maternal and child health (MCH) coordinator, depending on the location.

Scope of the VHW Program

Implementation of the VHW Program started in Tamsu-Ngandua ward, Mafa LGA, in December 2019 and ran through June 2021, for a total of 19 months. In Bayo LGA, the VHW Program began implementation in November 2020 and ran through June 2021, for a total of 8 months. Program implementation began later in Bayo because the team had to select a new location following the deteriorating security situation in Damboa (the LGA in the southern zone originally selected for implementation), conduct a baseline assessment, and update protocols to ensure safety during the COVID-19 pandemic. Additionally, program and M&E staff decided to use the early implementation data from Mafa to update the program materials to reflect early lessons learned. The program was also implemented in a third site, Kaga LGA, but the team did not evaluate this site because program operations had not been underway for at least six months at the time the endline evaluation was conducted.

Table 1: VHW Program implementation data, December 2019–June 2021

	Mafa	Bayo	Kaga	Total
No. of months of implementation	19	8	5	
No. of health workers deployed	103	61	55	219
<i>No. of VHWs</i>	93	55	50	198
<i>No. of SVHWs</i>	10	6	5	21

The VHW Program deployed a total of 219 health workers in Mafa, Bayo, and Kaga. This included 198 VHWs and 21 SVHWs who were recruited from the communities where the program was implemented. Of the total, 103 were from Mafa (93 VHWs and 10 SVHWs), 61 were from Bayo (55 VHWs and 6 SVHWs), and 55 were from Kaga (50 VHWs and 5 SVHWs).

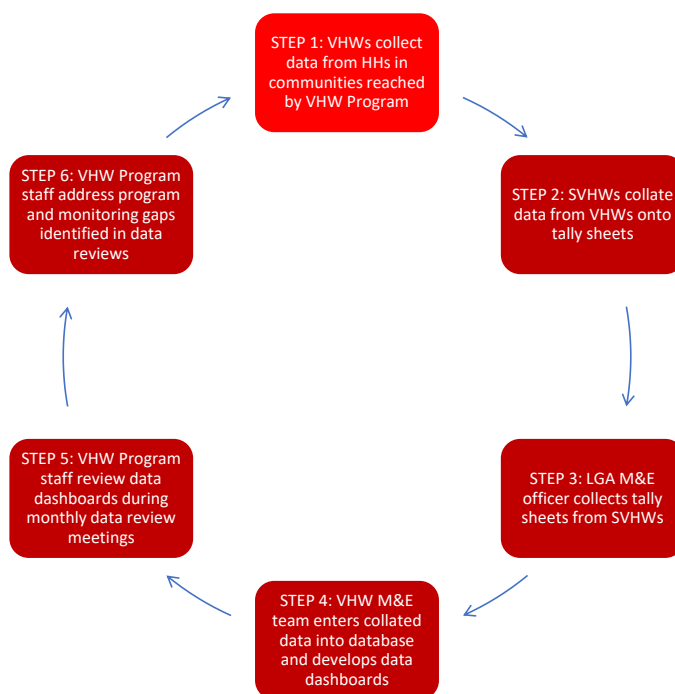


VHW hijabs for distribution at launch in Bintu © Bukar Imam, at the Bayo training and program launch 2018.

VHW Program Monitoring System

The VHW M&E team designed a tailored monitoring system to align with VHW Program implementation and feasibility in the Borno State context.²⁹ The research/M&E consultant, with funding and support from the WRC, provided technical support to BSPHCDA to monitor the VHW Program, including data quality and management. The monitoring system included a data flow that cascaded data from households visited by VHWs to the VHW M&E team in Maiduguri (see Figure 1). Monitoring tools were co-designed by VHW Program and M&E staff to meet both programmatic and monitoring purposes.

Figure 1: VHW Program Monitoring System Data Flow



VHWs, the primary data collectors, recorded household data on registers during household visits.³⁰ SVHWs, who collated data from VHWs, received training from the M&E team on the monitoring tools and how to conduct data quality checks and provide supportive supervision to the VHWs. SVHWs conducted monthly group meetings with the VHWs in their respective cohorts, as well as one-on-one meetings with each VHW, using monthly supportive supervision checklists to ensure data quality. SVHWs also provided data and tool user feedback to the program and M&E teams. After COVID-19 protocols were put in place, a COVID-19 protocol assessment tool was developed and used to assess VHWs' adherence to COVID-19 preventive measures.

The M&E and program teams reviewed data inconsistencies and issues during quarterly review meetings and monthly supportive supervision meetings with SVHWs, and provided refresher trainings as needed to SVHWs, who cascaded learning to the VHWs. To facilitate uptake of data

²⁹ At the time of VHW Program design, the state was not collecting data on community health indicators at the household level. Therefore, the VHW team developed a system to collect data at this level. The complementary components, such as PHC and supply chain interventions, were monitored separately.

³⁰ Data were collected using paper forms. At the time of the start of the VHW Project, in 2018, the VHW partners decided that digital data collection was not feasible.



to inform programmatic decision-making, the M&E team generated monthly and quarterly data dashboards for key performance indicators (KPIs). The M&E team also organized monthly data review meetings to present the data and validate findings with VHW Program staff.³¹

The M&E team also conducted two data quality audits (DQAs), which aimed to gather information about completeness, timeliness, accuracy, and usability of data. The DQAs used a sampling protocol to select a subset of data points to verify through M&E visits to communities. The first DQA was conducted in March 2020 and a follow-up DQA was conducted in May 2020. Based on DQAs, targeted improvements were made, such as refresher trainings and usability-focused redesign of some monitoring tools.

Complementary interventions

While the VHW program aimed to increase demand for health and nutrition services, consortium partners supported the BSPHCDA to implement complementary interventions to simultaneously improve the availability and accessibility of these services. The complementary interventions addressed health provider capacity, availability of equipment and supplies, transportation to health facilities, and the enabling environment for RMNCAHN services.

The PHC Component

The PHC component aimed to improve the quality of health services at the health facilities used by the targeted communities. The Mwada-Gana Foundation (MGF), with support from WRC, provided technical support to BSPHCDA to implement the PHC component. BSPHCDA and MGF staff trained community health extension workers and in-charges (staff who oversee the six PHCs) across the three VHW Program sites on basic emergency obstetric and newborn care (BEmONC) for pregnant women, newborns, and postnatal mothers, and family planning. Because most of these trainings occurred after the start of the COVID-19 pandemic, the trainers also provided CHEWS and other health workers at the PHCs in the community with information on hygiene management practices to promote sanitary practices during provision of health care at the health facilities within the communities. The health worker trainings aimed to ensure that PHCs could provide needed services to households referred to them by VHWs, including emergency cases.

The Supply Chain Component

Health care supplies are critical to provision of quality health services. i+solutions, with support from WRC, provided technical support to the BSPHCDA that aimed to improve logistics and management of supplies and equipment needed to provide RMNCAHN services to members of the communities. i+solutions trained state-level health and logistics staff on supply chain management and procurement practices, and trained PHC staff, including community health extension workers, nurses, and midwives, on basic management of stock, record keeping, and resupply processes. This intervention aimed to improve availability of supplies at the PHCs to provide quality RMNCAHN services, and ensure effective and efficient delivery of supplies to prevent wastage, loss, and damage. Additionally, toward the end of VHW implementation in the Mafa site, i+solutions partnered with the BSPHCDA to pilot the procurement of a selection of commodities approved for community-based distribution for the VHWs to distribute as needed in the communities. This package included contraceptive commodities (such as condoms and emergency contraception), maternal health commodities (such as folic acid and iron tablets), newborn health commodities (such as chlorohexidine for cord treatment), and child health commodities (such as oral rehydration

³¹ The plan was to cascade VHW monitoring data back to communities via existing local government-community engagement channels; however, due to COVID-19 disruptions, which occurred just a few months after program implementation began, this plan could not be implemented.

salts). Delivery and hygiene kits for pregnant women and adolescent girls were also procured and distributed at the PHCs in Mafa. VHWs collected commodities for community distribution from the PHCs on a biweekly basis and managed their stock records in collaboration with trained PHC staff.

The Emergency Transport Component

The team developed the emergency transport scheme (ETS) in response to community demand and needs identified in the baseline assessments. The intervention bolstered and legitimized existing community volunteer drivers, providing training in basic emergency first aid and safe transportation. The volunteer drivers needed to have consistent access to a vehicle (such as a car, truck, or motorized rickshaw) and be willing to be on call at all hours. Upon completing training, volunteers were called by VHWs to support transportation of sick community members to and from local facilities. This intervention component aimed to reduce transportation burdens on families and increase access to facility-based services.

The Policy Component

WRC engaged M-SPACE, a Nigerian advocacy NGO, to provide technical support to BSPHCDA to develop and institute policies to advance RMNCAHN service delivery, access, and quality in Borno State. M-SPACE, with WRC support, worked with BSPHCDA to adapt Nigeria's national task-shifting and task-sharing policy to the Borno State context and to develop a costed implementation plan for family planning (which had already been developed in most other states in Nigeria). Additionally, midway through the project, at the state government's request, M-SPACE also supported development of an adolescent SRH policy. Together, these three policies addressed gaps in the enabling environment to deliver community-based services and meet the RMNCAHN health needs of women, adolescents, newborns, and children.

VHW Program Baseline Assessment and Endline Evaluation

The VHW team conducted a baseline assessment in each project location to inform program design and scale-up, and to serve as a baseline measure of programming and health services. To evaluate the effects of the program, the team conducted an endline evaluation in two of the program sites, Mafa and Bayo, that aimed to gather information about experiences of VHWs, SVHWs, and community members who engaged in the VHW Program and analyze trends in program monitoring data, including household health behaviors. (The third program site, Kaga, was not included in the endline evaluation because implementation had not yet been underway for six months at the time the evaluation was conducted.) Results from the endline evaluation are detailed in this report. The team also contracted an external evaluator to assess the partnership approach used by the consortium; these results are published separately.



III. Baseline Assessments: Summary of Findings in Mafa and Bayo

The baseline assessments aimed to gather information to inform the design of the VHW Program and complementary interventions and provide a baseline measure of programming. The assessments used qualitative methods (focus group discussions [FGDs] and key informant interviews [KIIs]) and quantitative methods (health facility assessments [HFAs] and secondary analysis of District Health Information System-2 [DHIS2] data). DHIS2 is an online open-source platform used for reporting, analysis and dissemination of health program data. However, the team was not able to use the DHIS2 data in the analysis due to inconsistent quality. Given that we did not include HFAs in the endline evaluation, we do not present the results in this report; however, they are available in the baseline report.

Findings reported here focus on Mafa and Bayo, the two sites selected for endline evaluation. The baseline assessment was conducted in November 2018 in Mafa and in March 2020 in Bayo. Through FGDs, 70 community members in Mafa and 98 community members in Bayo were consulted, including men and women aged 20–49 years old, and adolescent boys and girls aged 15–19 years old. KIIs were conducted with 24 stakeholders, local leaders, and key informants at the state and local levels, including 6 state government actors, 12 local actors, and 6 actors affiliated with INGOs or UN agencies.³²

In the FGDs, community members overall expressed a positive intention to use or already used health facilities to address family members' health issues. Community members said that services at health facilities were available to anyone without bias. Some community members stated that diagnoses from health facility providers were preferable to those from other sources, such as pharmacies and traditional healers. Many community members acknowledged that the providers at health facilities were doing their best to serve patients who come to the health facilities.

However, these intentions to use health facilities were tempered by a number of barriers. Barriers included distance to health facilities, lack of transport, daylight hours of operation only, and lack of knowledge among community members in some areas, such as of contraceptive methods and nutrition, and the ongoing reliance on traditional medicinal and nutritional practices. Community members' intention to use health facilities was also reduced by a lack of confidence that the health facilities would be able to deliver effective health services and medicines. Community members reported that services were often free; however, they said that medicines were often not available and/or not free, which made them feel that they could not rely on health facilities to meet their health needs. Costed services were perceived as dissatisfying or unfair, especially by male household members, who were often decision-makers of health-seeking behavior of household members. These barriers and gaps affected all community members, but women and girls were disproportionately affected as they also faced high risks of adverse health outcomes and rights violations related to child marriage, early pregnancy, unreliable access to contraceptive methods, unsafe methods of abortion, and home deliveries.

Key informants reported capacities and facilitators that contributed to RMNCAHN service uptake, including committed providers working at health facilities despite challenging circumstances; a baseline receptivity of community members toward seeking services at health facilities; cohesive

³² Women's Refugee Commission, *RMNCAHN in Borno State: A Needs Assessment of Reproductive, Maternal, Newborn, Child, and Adolescent Health and Nutrition in Borno State, Nigeria* (Unpublished).

communities and community members' professed support of each other, which could be directed toward mutual promotion of use of formal health services; and diverse stakeholders across Borno State who were committed to improving RMNCAHN outcomes. Key informants also identified underlying challenges in Borno State that were driving persistent barriers to RMNCAHN service provision and usage. They linked the limited operating hours of health facilities, as well as gaps in supplies at health facilities, with the security situation, challenging both government and INGO service providers to deliver essential supplies to health facilities across the state. Additionally, key informants highlighted gaps in human resources for health and emergency transportation as key concerns. They also emphasized challenges around the lack of adolescent-friendly health services.



Commodities procured by the RMNCAHN Project for community-based distribution in Mafa. © Grace Kivu



IV. Endline Evaluation Objectives and Methods

The objective of the endline evaluation was to gather information about the experiences of VHWs and community members who engaged in the program in order to assess the success of the VHW Program and contribute to accountability and learning. To that end, the study collected data and evidence aiming to address the following research questions:

1. How have the major barriers, facilitators, and gaps related to RMNCAHN and services in intervention sites changed since the start of the intervention?
2. How have RMNCAHN statuses changed in intervention sites since the program started?
3. How has the capacity of PHCs to deliver relevant services changed since the program started?
4. How have knowledge, attitudes, and beliefs of community members in intervention sites changed since the intervention?
5. How do key stakeholders and informants perceive the status of RMNCAHN service provision and usage in the RMNCAHN program sites?
6. How do community members perceive the VHW Program?

The endline assessment employed mixed methods, including KIIs with SVHWs; FGDs with VHWs and other community members; and secondary analysis of program monitoring data.

Service delivery and health data

The team reviewed programming, service delivery, and household health practices data from the VHW Program's monitoring datasets. The team also reviewed health data from the SPHCDA's DHIS2 dataset; however, the team was not able to use the DHIS2 data in the analysis due to inconsistent quality. After the program monitoring data was cleaned and aggregated, the team conducted descriptive analysis and data visualization. Secondary data analysis of the program monitoring data was carried out in New York, US, and Maiduguri, Nigeria. The M&E team analyzed, reported, and shared findings internally with the VHW Program team for validation and feedback.

FGDs and KIIs

The team adapted the FGD semi-structured interview tools for community members developed for the baseline assessment to measure the effects of the VHW Program, including challenges, successes, and areas for improvement. The team added questions to measure how community members perceived and experienced the VHW Program, capture effects the program had on members of the households, and document recommendations to improve programming. Newly developed FGD tools for VHWs and KII tools for SVHWs were designed to document their experiences as VHW Program staff, understand how they perceived the status of the RMNCAHN service provision and usage in the VHW Program sites, and solicit their recommendations to improve the program.

WRC held a three-day training in March 2021 for a team of six facilitators who participated in the baseline assessment qualitative data collection to train them on updated community member FGD guides and the new FGD and KII guides for VHWs and SVHWs. The training also covered COVID-19 precautions and mitigation, and WRC, SPHCDA, and the Borno State Ministry of Health's (BSMOH's) guidelines and rules for ethical conduct during data collection.

During March 2021, the team organized 7 FGDs with 42 VHWs, and 22 FGDs with 216 community

members who lived in households in Mafa and Bayo reached by the program, including 4 groups of married women 20–49 years; 8 groups of single or widowed women 19–49 years; 6 groups of adolescent girls 15–19 years; and 4 groups of married men 19–40 years. The groups included between 6 and 10 participants. The research consultant worked with SPHCDA health education officers and Bulamas (community leaders) to recruit and invite FGD participants from the VHW Program catchment areas in Mafa and Bayo. VHWs were randomly selected to participate in FGDs using an Excel-based random number generator from a list of all VHWs working in both LGAs.

FGDs were held in private spaces in secured open space within the Bulamas' compound in communities of Mafa and Bayo (the Bulamas did not join the FGDs). The discussions were facilitated in Hausa and Kanuri by women for focus groups with women and girls and men for focus groups with men. With informed consent from participants, the moderators audio-recorded the discussions.

SVHW key informants were selected randomly using an Excel-based random number generator from a list of all SVHWs working in both LGAs. In-person interviews were conducted and audio-recorded by research assistants in a private location.

The research assistants transcribed and translated the FGD and KII discussions from Hausa and Kanuri to English. WRC researchers then developed, piloted, and iterated a codebook. Each transcript was coded by two research assistants using the NVivo 12 Plus software package, and discordances between coders were resolved through consensus of coders and the M&E team, and/or adaptation of the codebook. WRC researchers subsequently conducted second stage coding to explore emerging themes across codes and by subgroups of participants and locations.

Ethics

Prior to data collection, the Borno State Ministry of Health Research Ethics Committee reviewed and approved the study procedures (MOH/GEN/6679/1). Researchers and research assistants obtained informed consent prior to data collection with key informants and FGD participants. Names and other identifying information were not collected from FGD participants. WRC provided an information sheet for each respondent with WRC's and the local research consultant's contact information and directions for anonymous reporting channels.

Limitations

This evaluation intended to document the effects of the VHW Program on health outcomes over time in two sites reached by the VHW Program. However, the study has several limitations.

First, the endline assessment employed a non-experimental study design; therefore, the effects observed in the evaluation cannot be attributed to the VHW Program specifically. We cannot determine whether changes in health outcomes or RMNCAHN service use are statistically significant.

Confounding variables include COVID-19 and insecurity. Cases of COVID-19 first emerged in Borno State in late March 2020. The pandemic era has been associated with disruptions of routine operations, including health care provision and livelihoods, which may have driven decreases in RMHCAHN outcomes. In addition, insecurity continued in Borno State throughout the implementation timeframe, which can also drive persistent low health outcomes.

The endline assessment had planned to assess changes in health outcomes via data that the Borno State government collected and aggregated in the DHIS2 system. However, the dataset had too many gaps to be analyzed; moreover, it did not include community- or household-level data.

Therefore, to evaluate the effect of the VHW Program on health outcomes, the VHW endline relied on the VHW Program's own monitoring data and on the self-reporting of community members.

The endline assessment also planned to assess changes in the readiness of health facilities to effectively provide RMNCAHN services in Mafa and Bayo. The team visited three government-run facilities, including two in Mafa and one in Bayo, to conduct health facility assessments. The data were analyzed; however, while the report was being reviewed by the team, the data were lost and could not be recovered; therefore, the team decided to remove the data from the report.

Finally, the VHW Program enrolled households that were in the catchment area of selected operational health facilities in each LGA. Probability sampling was not used to recruit program or evaluation participants; therefore, we cannot be certain that the results of this study are generalizable to all households in Bayo and Mafa.



A village health worker in Borno State, Nigeria, conducts a middle-upper arm circumference (MUAC) test on a young child. The test serves as a quick diagnostic of acute or severe malnutrition.

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V. Evaluation Findings

Program monitoring data

Descriptive statistics of individuals reached by the VHW Program in Mafa and Bayo

Across Mafa and Bayo, the VHWs completed 54,163 household visits—44,460 visits in Mafa and 9,703 visits in Bayo. Program reach—defined as the number of individuals living in households visited by the VHWs—totaled 211,276 individuals, 164,270 in Mafa and 47,106 in Bayo. This is in effect a 100 percent increase in community-based health service coverage from prior to the VHW Program, when there was no comparable community health programming, showing that the VHW Program increased community-level health service coverage in the target areas. The program reached 8,754 newborns aged 0–11 months, 33,507 children aged 1–5 years, 38,720 adolescents aged 10–19 years, and 36,866 women and girls of reproductive age (15–49 years).³³ Among these were 1,575 individuals with disabilities.

Table 2: VHW Program reach data

	Mafa (Dec. 2020 – June 2021)	Bayo (Nov. 2020 – June 2021)	Total
No. of household visits completed	44,460	9,703	54,163
No. of individuals living in households visited by VHWs	164,270	47,106	211,376
No. of individuals living in households visited by VHWs, by target population			
<i>Newborns (0-11 months)</i>	6,405	2,349	8,754
<i>Children (1-5 years)</i>	24,475	9,032	33,507
<i>Adolescents (10-19 years)</i>	29,195	9,525	38,720
<i>Women and girls of reproductive age (15-49 years)</i>	25,915	10,951	36,866
<i>Individuals with disability (all ages)</i>	1,258	317	1,575

The data below provide a more detailed, disaggregated overview of the individuals reached by the program; however, due to challenges with the data collection system during the first year of implementation in Mafa—which were identified and addressed before launch in Bayo, and corrected in Mafa after month 12 of implementation—the team is not able to provide some disaggregated data for the full implementation period in Mafa.³⁴ As a result of the updates and improvements made to the data collection system, some data collected in Mafa from December 2019–November 2020 are not comparable to the data collected in Mafa from December 2020–June 2021. Where the data are comparable across the two time periods in Mafa, they are presented together; where they are not comparable, data are presented separately from the two time periods or only data from the later period are used. All tables specify which timeframe the data refer to. As the updated monitoring tools were put in place before the start of the program launch in Bayo, data from the full implementation period in this site can be used for all indicators.

³³ Due to the structure of the initial data collection system, adolescent girls aged 15–19 years are included in both the adolescent category and the category of women and girls of reproductive age.

³⁴ The initial data system captured data primarily at the household level, not at the individual level. The system therefore did not adequately capture data allowing for analysis of individual-level indicators, nor did it capture data needed to consistently conduct disaggregated analyses by age and sex. The updated system addressed these issues, among others.



Table 3 shows disaggregated data on the number of people living in households visited by VHWs from Mafa from December 2020 onward and from the full Bayo implementation period.

Table 3: Newborns, children, adolescents, and adults of reproductive age living in households visited by VHWs

	Mafa (Dec. 2020 – June 2021)		Bayo (Nov. 2020 – June 2021)		Total	
	Female	Male	Female	Male	Female	Male
Newborns (0–11 months)	1,592	1,491	1,230	1,119	2,822	2,610
Children (1–5 years)	7,490	7,297	4,519	4,513	12,009	11,810
Children (6–9 years)	5,509	5,347	3,149	3,237	8,658	8,584
Younger adolescents (10–14 years)	5,540	5,216	2,919	2,886	8,459	8,102
Older adolescents (15–19 years)	3,954	3,260	1,880	1,840	5,834	5,100
Subset of older adolescents (15–19 years) with disability	256	95	228	64	484	159
Adults of reproductive age (20–49)	13,534	12,943	9,071	7,725	22,605	20,668
Subset of adult women of reproductive age (20–49) with disability*	172		131		303	
Total	37,619	35,554	22,768	21,320	60,387	56,874

*Comparable data was not captured for adult men.

The vast majority of household visits were completed in person, but a small proportion were completed remotely via telephone using the protocols developed at the onset of the COVID-19 pandemic. A total of 360 remote visits (312 in Mafa, 48 in Bayo) were conducted throughout the implementation of the program.

Referrals to health facilities

The VHW Program aimed to improve health-seeking behaviors and practices by providing community members with targeted health and nutrition educational messages, advising families on improving household practices related to health and nutrition, and providing referrals to health facilities. When the team updated the data collection system, they also revised the way they collected data on referrals to better reflect individual level outcomes.³⁵ Table 5 shows the number of referrals made in each site, separating the data from Mafa into two datasets reflecting the data collected during each time period. The table shows data on referrals made in Mafa from December 2019–November 2020 based on the number of health conditions checked on each referral form, and shows the number of referrals made in Mafa from December 2020–June 2021, and throughout the program implementation period in Bayo, based on number of individuals referred.

³⁵ The first iteration of referral data focused on the health condition being referred for, not the individual being referred, meaning a person who was referred for three conditions was captured as three referrals—not as one referred person. This resulted in highly detailed data on the types of health conditions being referred for, but inadequate data on how many individuals sought care. The updated system focused on capturing the number of individuals who were referred; in this system, a person who was referred for three conditions was captured as one person—not as three referrals.

Table 4: Number and proportion of referrals made, by health area

	Mafa				Bayo	
	Dec. 2019 – Nov. 2020		Dec. 2020 – June 2021		Nov. 2020 – June 2021	
	Number of health conditions checked on referral forms	Proportion of total referrals during this period	Number of individuals referred	Proportion of individuals referred for each health area during this period	Number of individuals referred	Proportion of individuals referred for each health area during this period
Family planning	91	3%	310	33%	190	46%
Pregnancy	784	27%	273	29%	157	38%
Postnatal	433	15%	135	14%	95	23%
Newborn health	261	9%	86	9%	43	10%
Child health	1,357	46%	284	30%	50	12%
Total (n)	2,926		939		411	

In the first year of implementation in Mafa, VHWs referred people for care for 2,926 health conditions. Nearly half (46%) were for child health, 27 percent were pregnancy-related referrals, 15 percent were postnatal referrals, and 9 percent were newborn referrals. Only 3 percent of referrals during this time period were for family planning. The team used this data in real time when updating the tools, increasing the program's focus on family planning through the revised job aids that VHWs used to guide household visits and monitoring tools, and refresher trainings for VHWs. In the second part of program implementation in Mafa, 939 individuals were referred to health facilities for care. The proportion of individuals referred for family planning was 33 percent, reflecting the program's enhanced focus on family planning after updating job aids and monitoring tools based on learning from year 1 of programming. The proportion of referrals for child health decreased to 30 percent; this is likely because in year 1 of implementation, multiple conditions were checked on forms for one child, making the proportion of referrals for child health appear larger. In Bayo, 411 individuals were referred to health facilities for care, of which 46 percent were for family planning, 38 percent were for pregnancy-related reasons, 23 percent were for postnatal care, 10 percent were for newborns, and 12 percent were for child health. Note that some individuals were referred for multiple areas of care, for example a woman or adolescent could be referred for both family planning and postnatal care; therefore, the proportions in the table do not add up to 100 percent.

The updated M&E tools also allowed the team to track referrals by target population. From December 2020–June 2021 in Mafa and across implementation in Bayo, almost half (48 percent) of referrals were for women and girls aged 10–49 years (42 percent in Mafa and 65 percent in Bayo), 14 percent were for newborns (13 percent in Mafa and 18 percent in Bayo), and 36 percent were for children (44 percent in Mafa and 16 percent in Bayo). Table 6 also shows the proportions of individuals referred by disability status.

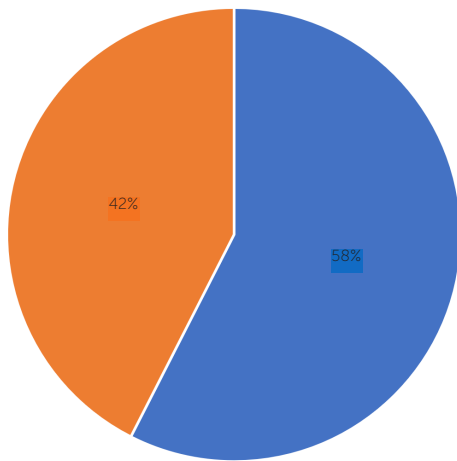


Table 5: Individuals referred by VHWs, by demographic group

	Mafa (Dec. 2020 - June 2021)		Bayo (Nov. 2020 - June 2021)		Total	
	Number	Proportion	Number	Proportion	Number	Proportion
Adolescent girls aged 10–19 years without a disability	84	9%	45	11%	129	10%
Women aged 20–49 years without a disability	274	29%	217	53%	491	36%
Women and adolescent girls aged 10–49 years with a disability	24	3%	4	1%	28	2%
Newborns aged 0–12 months	121	13%	74	18%	195	14%
Children aged 1–5 years without a disability	416	44%	65	16%	481	36%
Children aged 1–5 years with a disability	20	2%	6	1%	26	2%

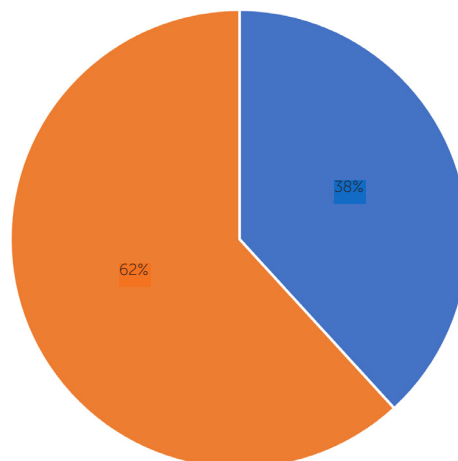
The updated VHW monitoring system also tracked how many of the referrals were completed, meaning that the referred person visited the health facility to seek services. Overall, 52 percent of referrals were completed, including 58 percent in Mafa from December 2020 – June 2021, and 38 percent in Bayo over the course of program implementation, from November 2020 – June 2021.

Figure 2. Percentage of referrals completed in Mafa (Dec 2020 - June 2021)



■ % total completed ■ % total not completed

Figure 3. Percentage of referrals completed in Bayo (Nov 2020 - June 2021)



■ % total completed ■ % total not completed

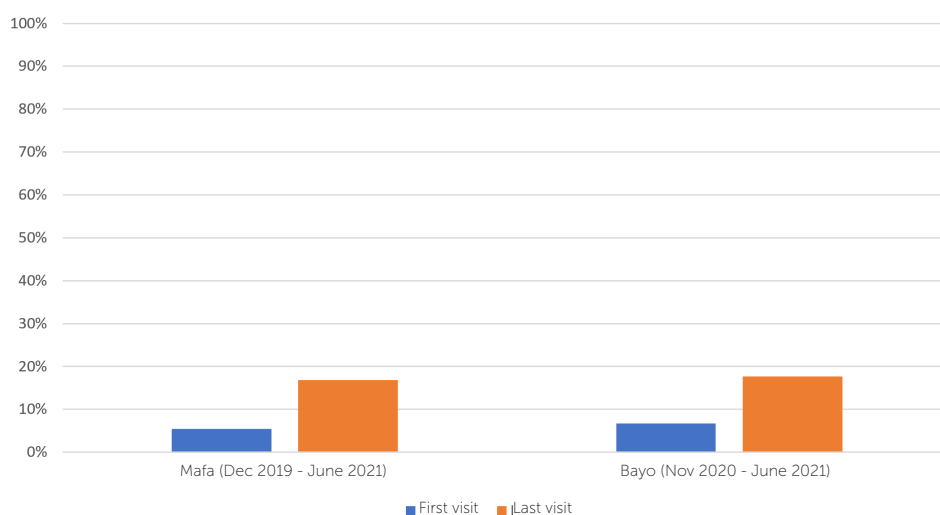
Health practices

In both Mafa and Bayo, there were notable improvements in RMNCAHN practices, as detailed below.

Family planning

The proportion of women and adolescent girls of reproductive age using a family planning method³⁶ increased in both sites between first and last visit. In Mafa, the percentage of all women and adolescent girls aged 15–49 years living in households visited by VHWs who reported using family planning increased from 5 percent in December 2019 to 17 percent in June 2021. In Bayo, from November 2020 – June 2021, the proportion increased from 7 percent to 18 percent.

Figure 4. Percentage of women and girls of reproductive age (15-49 years) who reported using FP at time of VHW visit, at first and last visit



The updated data collection tools allowed for further analysis of the family planning data, disaggregated by age. The data show that the proportions of both adult women of reproductive age and adolescent girls aged 15–19 using family planning increased across both sites; however, the proportions of adolescents using family planning were lower overall than for adult women. In Mafa, the proportion of adult women of reproductive age using family planning increased from 7 percent in December 2020 to 21 percent in June 2021, while the proportion of adolescent girls aged 15–19 years using family planning increased from 0.1 percent to 4 percent. In Bayo, the proportion of adult women of reproductive age using family planning increased from 8 percent in November 2020 to 20 percent in June 2021, while the proportion of adolescent girls aged 15–19 years using family planning increased from 2 percent to 8 percent.

³⁶ Family planning methods listed on the data form were condom (male or female), oral contraceptive pills, emergency contraception, injectables, implants, IUDs, tubal ligation, vasectomy, and cycle beads. VHVs could also write in another method.



Table 6: Family planning usage among adolescent girls aged 15–19 and adult women aged 20–49

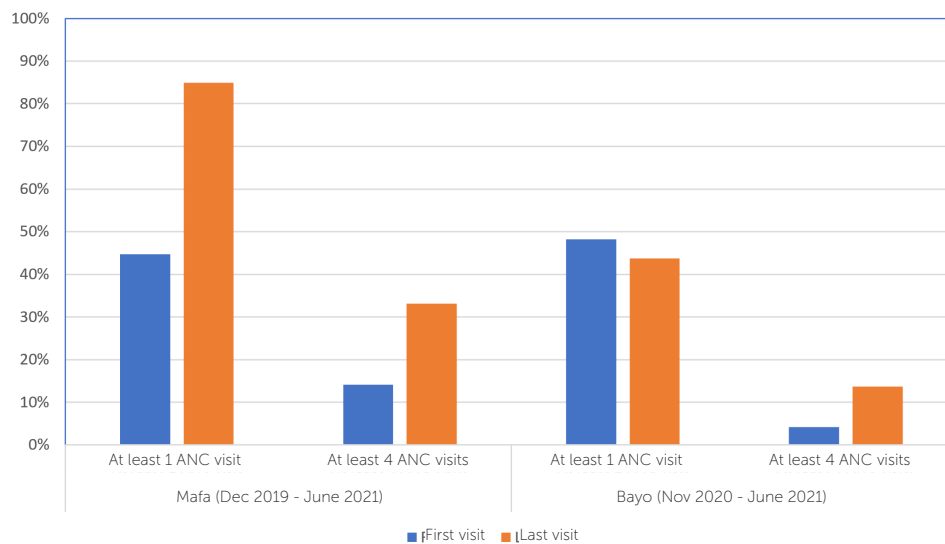
	Mafa (Dec. 2020 - June 2021)		Bayo (Nov. 2020 - June 2021)	
	First Visit*	Last Visit	First Visit	Last Visit
Adolescent girls 15–19 using family planning	0.1%	4%	2%	8%
Women 20–49 using family planning	7%	21%	8%	20%

*Refers to the first visit after the data collection tools were updated.

Antenatal and postnatal care

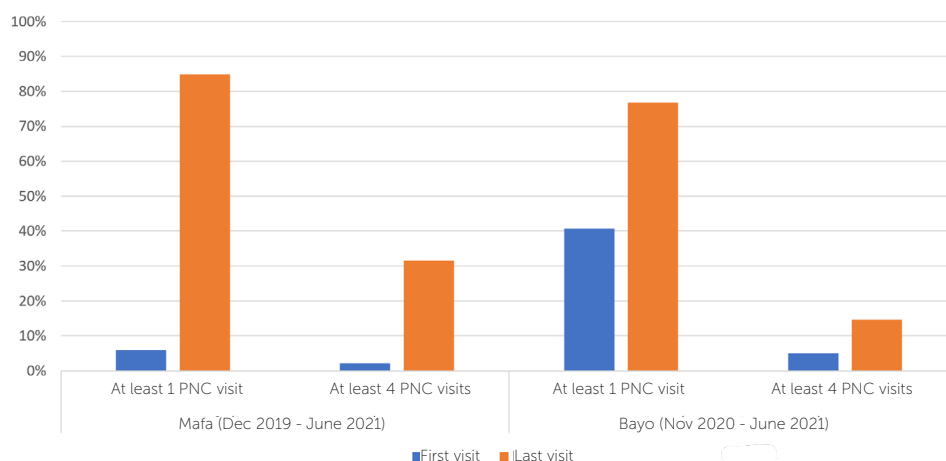
Antenatal care (ANC) indicators improved in Mafa but were somewhat mixed in Bayo. Between November 2019 and June 2021, the proportion of pregnant women and girls aged 10–49 years in Mafa who attended at least one ANC visit increased by 40 percentage points, from 45 percent to 85 percent, and the proportion who attended four or more ANC visits increased by 19 percentage points, from 14 percent to 33 percent. In Bayo, which had a much shorter implementation period, from November 2020 to June 2021, the proportion of pregnant women and girls who attended at least one ANC visit decreased slightly, from 48 percent at first visit to 44 percent at last visit; however, the percent who attended four or more ANC visits increased by 10 percentage points, from 4 percent to 14 percent.

Figure 5. Percentage of pregnant women and girls 10-49 who attended ANC visits



Postnatal care (PNC) visits in both locations showed substantial increases. Mafa showed large growth in PNC visits from December 2019 to June 2021, with a 79 percentage point increase in at least one PNC visit between first and last visits (from 6 percent to 85 percent), and a 29 percentage point increase in at least 4 PNC visits (from 2 percent to 32 percent). Bayo also showed growth between November 2020 and June 2021, with a 36 percentage point increase in at least one PNC visit (from 41 percent to 77 percent) and a 10 percentage point increase in at least 4 PNC visits (from 5 percent to 15 percent).

Figure 6. Percentage of postnatal women and girls who attended PNC visits



Newborn health

Newborn health indicators improved in both Mafa and Bayo. In June 2021, 42 percent of newborns living in households visited by VHWs in Mafa had been born in a facility, compared to 8 percent at program start in December 2019. Additionally, early breastfeeding and cord care had large increases, from 8 percent to 60 percent and 8 percent to 57 percent, respectively. There were also improvements in all three indicators in Bayo, although the increases were smaller; this may be because the program ran for fewer months.

Figure 7. Percentage of newborns with facility birth, early breastfeeding, and cord care

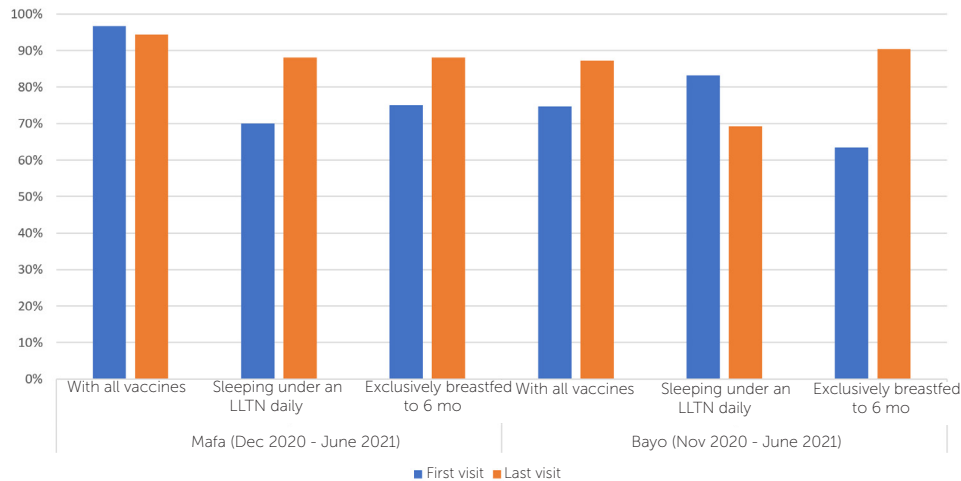


For older newborns (aged 6 to 12 months), the results were mostly positive, but somewhat mixed. Due to data disaggregation issues in the first iteration of data collection tools, the data presented for first visit in Mafa is from December 2020. Between the December 2020 visits and June 2021 visits in Mafa, the percentage of newborns who slept under a long-lasting insecticide-treated net (LLITN) daily increased (from 70 percent to 88 percent), as did the percentage of newborns who were exclusively breastfed to six months (75 percent to 88 percent). The percentage of newborns aged 6 to 12 months with all vaccines decreased slightly (97 percent to 94 percent), although the proportions were high at both baseline and endline visits. In Bayo, from first visit in November 2020



to last visit in June 2021, the percentage of newborns 6 to 12 months with all vaccines increased (from 75 percent to 87 percent), as did the percentage of newborns who were exclusively breastfed to six months (from 63 percent to 90 percent). However, the percentage of newborns who slept under an LLITN daily decreased somewhat (from 83 percent to 69 percent).

Figure 8. Percentage of newborns aged 6-12 months with all vaccines, sleeping under an LLITN daily, and exclusively breastfed to 6 months (2020-2021)



* In Mafa, "first visit" in this chart refers to the first visit after the data collection tools were updated.

Child health

At baseline in Mafa, the percentage of households with children 1–5 years who had complete vaccination was 82 percent, and the percentage of households with children 1–5 years who slept under an LLITN each night was 96 percent. In Bayo, the percentage of children 1–5 years who had complete vaccination was 72 percent at baseline, and the percent of children 1–5 who slept under an LLITN each night was 80 percent. Both of these baseline figures are very high, likely due to other child health initiatives in the region. Unfortunately, the data collected on child and adolescent health after the baseline visit were not usable due to issues with double-counting and/or undercounting of children, likely due to confusion among VHWs on how to properly complete the child and adolescent data collection forms, even after the data collection processes were updated.

Adolescent health

As noted above, there were increases in the proportion of adolescent girls aged 15–19 using family planning from November/December 2020 to June 2021. The proportion of adolescent girls aged 15–19 years using family planning increased from 0.1 percent in December 2020 to 4 percent in June 2021 in Mafa, and from 2 percent in November 2020 to 8 percent in June 2021 in Bayo. The team also collected data on the proportion of adolescents who were educated on sexually transmitted infections (STIs) and HIV, and the proportion of adolescent girls who were educated on menstrual health and who had supplies. However, as with the child health data, there were issues with double-counting and undercounting that made this data unreliable.

Findings from VHW Staff and VHW Program beneficiaries

The team conducted FGDs and KIIs to gather qualitative data on community members', VHWs', and SVHs' experiences with the program, including successes, challenges, and recommendations. This component of the endline evaluation included 29 FGDs with 286 diverse community members, seven FGDs with 42 VHWs, and seven KIIs with SVHWs, as detailed in the table below.

Table 7: Description of KIIs and FGDs conducted as part of the endline evaluation

Method	Description
7 KIIs	4 SVHWs in Mafa and 3 SVHWs in Bayo
7 FGDs with 42 VHWs	4 FGDs with 24 VHWs in Mafa and 3 FGDs with 18 VHWs in Bayo
29 FGDs with 286 community members	7 FGDs with 70 married women aged 20–49 years old; 8 FGDs with 78 widows and single women head of households aged 19–49 years; 6 FGDs with 60 adolescent girls aged 15–19 years old; 8 FGDs with 78 married men aged 19–49 years (see Annex 2 for details)

VHW and SVHW experiences with the Program

Successes

VHWs and SVHWs discussed several successes related to the VHW Program, including the impacts they had on their communities; the program's tools, training, and supervision; and the income-generation aspect of the role.

Impact on communities

SVHWs and VHWs shared that they believed the program effectively improved the health of families in the communities where they worked and that they appreciated the cooperation and acceptance they received from community members. VHWs emphasized that what they enjoyed most about their roles was seeing positive changes in community health, as illustrated by the following two VHWs from Bayo:

"We have really seen improvement in our community based on the work we are assigned to do as VHWs, and we have seen that change in the households of our community regarding maternal health and good hygiene practice in every household. The women are also going for their ANC and as well taking their children to vaccinations. With that, we are really happy about this activity."

"Certainly, with this work, we have seen changes in terms of the pregnant women, children, newborn babies, adolescent health, the general health of families, nutrition, food security, and livelihood, going for ANC by the pregnant women, and also taking their newborn babies for vaccination. We are really trying our best in promoting all these things within our roles and responsibilities and also educating and creating awareness in the community which the women have now really gained a lot from it by going for ANC and taking their children for vaccinations."

VHWs in Mafa and, to a lesser extent, in Bayo, also discussed improvements in family planning and community health they witnessed during the program, such as those relating to water, sanitation, and hygiene (WASH), food security, and nutrition. A SVHW in Mafa said:

"We have noticed some reductions in the aspect of illnesses, [improvements in clean environment [and] good hygiene practice, reduction in the mortality of newborn babies. I have really been happy with that and I take that as my biggest success."



SVHWs in Mafa also cited meeting monthly program targets, reducing maternal, newborn, and child mortality, increasing facility births, and increasing access to ANC as key measures of success.

Training and Tools

Overall, VHWs and SVHWs shared positive experiences with the training they received both before they began their jobs and during the course of implementing their jobs. All respondents reported that the training prepared them for their respective roles, including supporting them to learn the VHW Program tools. SVHWs reported that the training also supported them to manage a team of VHWs.

VHWs and SVHWs, especially those from Mafa, shared positive experiences using job aids and data tools (e.g., checklists, registers), including the updated tools. They reported that the job aids and data tools were easy to use and understand and supported their work. VHWs in Mafa noted that the visual tools and checklists supported positive health behavior changes by families.

Supervision and other support

VHWs and SVHWs reported positive experiences with supervision of VHWs by SVHWs, including home visits, one-on-one sessions, and group sessions. VHWs reported feeling supported by the SVHWs and commended their guidance, motivation, encouragement, mentorship, and coaching abilities. VHWs shared that they felt supported by SVHWs to fulfill their job requirements successfully. When asked what they enjoyed most about their role, SVHWs responded that they enjoyed providing guidance and mentorship to VHWs. SVHWs said that they felt respected by the VHWs they managed, and that the VHWs took their advice and followed their instructions, which they suggested contributed to the program's impacts. An SVHW in Mafa shared:

"The biggest success I have achieved as a SVHW is working hand in hand with the VHWs and guiding them for the progress of this work on where they have a doubt. With the corrections and support, we have seen quite a lot of changes in our community."

VHWs and SVHWs indicated positive working relationships with their colleagues and shared that they experienced positive interactions with the M&E team. VHWs and SVHWs also reported feeling supported by the VHW Program to mitigate the risk of COVID-19 in communities where they worked. They reported spreading awareness about hygiene and sanitation, such as hand washing, and practicing social distance to prevent COVID-19 transmission. VHWs reported using the program's remote home visit protocol to mitigate the risk of in-person transmission during the first outbreaks of COVID-19.

Income generation

VHWs and SVHWs agreed that the income received from the program supported them to meet basic needs and provide for their families, including paying for their children's school fees, health facility visits, and food for the family. For example, when asked whether receiving income from the VHW job impacted them and their families, a group of VHWs in Bayo responded:

"Participant (P)1: For me, honestly, this work has really helped me because initially I didn't have any job to do. I was able to start a little business with it, buy food for me and my children and also pay their school fees. I have really enjoyed it and we assist our husbands too."

P2: "I have been grateful for receiving the income from this job because it has helped me in assisting my family in different aspects."

P3: "We have really seen a positive contribution of this income in our daily lives as it has helped us in getting some of our needs."

Challenges

VHWs and SVHWs also discussed some factors that hindered them from successfully delivering RMNCAHN services or supporting community members to access RMNCAHN services.

Commodity availability and cost

A key barrier emphasized by all respondent groups was the cost of medicines and other commodities at health facilities. VHWs noted that the lack of free drugs and commodities deterred community members from using RMNCAHN services at health facilities. Some respondents also noted that community members expressed the desire to receive free drugs and other commodities directly from VHWs.³⁷ A VHW from Bayo shared the challenge she initially faced:

“...some households don’t give me the listening ear. They will say that ‘I cannot come and disturb them with discussions because I will be of no use to them.’ They also don’t accept the referrals I give them, saying that why should they go to a facility where they will have to buy everything there, and as such, they kept saying it is not important to them. ‘If actually you are willing to support us, let there be provision of free drugs and other commodities. With that, even if you don’t give us the referral forms here, we will follow you to get it once these things are given to us.’”

VHWs in both locations emphasized that the lack of free drugs at the health facilities deterred community members from accepting their referrals to visit the health facility, “since there is no free medication but rather use their personal money in getting the drugs” (VHW, Mafa). Furthermore, VHWs shared that community members told them that they preferred to access health services and commodities at the chemist (pharmacy or drug shop) or use local herbs because they do not receive free drugs and other commodities at the health facilities. A VHW in Bayo explained:

“Other people lament that since they don’t get free drugs at the health facility, there is no need for me to refer them using the card as they know the path to the facility. They at some point prefer to go to the chemist and buy their drugs. Others, too, will tell you that it will be better for them to treat their child with the local herbs and they don’t need my referrals.”

Engaging adolescents

Another key challenge shared by VHWs was engaging adolescents about health topics during VHW visits. They explained that some adolescents lack knowledge about SRH topics, such as STIs and contraceptive use; therefore, VHWs needed to clearly explain these topics multiple times. VHWs also said that adolescents sometimes acted dismissively or were uncomfortable when VHWs discussed these topics with them; one VHW in Bayo shared that adolescent boys in particular feel like the VHWs are “trying to teach them something negative.” Another VHW in Bayo reported:

“The challenge we used to face is mostly when I meet some of the adolescent girls. They don’t like to give me their cooperation and at some point, I don’t even find them at their homes. For the adolescent boys too, whenever we try to discuss with them about STIs, we feel they might try and challenge us or even object the topic.”

Resistance from men in the household

In addition to adolescents’ resistance to VHWs, another dominant theme noted by VHWs in Bayo

³⁷ In Mafa, in the final months of the program, the VHW team piloted provision of a set of commodities directly to VHWs to distribute to households as needed; however, the timing of the endline assessment did not allow the team to capture data on this pilot. i+solutions documented findings from the pilot separately.



was men's resistance to the VHW Program, particularly discussions around family planning and use of RMNCAHN services at health facilities. A VWH from Bayo said that the women she visited "say their husbands don't allow them to take their children [to the health facility] for vaccines," and she asked "if there is anything the organization [the RMNCAHN project] can do to encourage them...by showing them [men] the importance of the vaccines and so on."

Workload

While VHWs generally felt their workload was manageable, SVHWs reported that their workloads were not always manageable given the amount of time spent supervising a team of VHWs and conducting data quality checks and data management. A SVHW in Mafa shared: "The work is beyond our level or capacity, as it is more than the income. Honestly, we have been facing some difficulties about the work as it is not an easy task at some point."

Some VHWs and SVHWs also shared negative experiences with data management. VHWs expressed that initially the tools were difficult to understand and SVHWs reported that VHWs did not submit their data in a timely manner. SVHWs in Bayo expressed the need for more space on their tally sheets to accommodate additional data.

Personal protective equipment during COVID-19

VHWs and SVHWs mentioned feeling safe and comfortable during service delivery, including being supported to follow COVID-19 precautions. However, they said that they had not received PPE gear and supplies, such as masks and hand sanitizer, which they saw as being important job aids for effectiveness and personal safety. (The VHW Program acquired face masks, hand sanitizer, and hand soap for all VHWs at the beginning of the COVID-19 pandemic. However, there may have been procurement or distribution delays that resulted in this perception among VHWs.)

Community members' experiences with the VHW Program

Overall, all community groups shared positive experiences with VHWs and emphasized what they learned from the VHW visits regarding RMNCAHN. No respondent reported knowledge of any negative experiences due to VHWs visiting community members' homes. Participants across groups noted that they felt comfortable and safe during VHW visits. Respondents across groups shared that VHWs spoke mostly to women, and to a lesser extent to adolescents and men. A few female participants in both locations noted that at the start of the program, some community members did not welcome VHWs into their homes; however, once community members learned about the program, they accepted the VHWs.

Positive changes in health behaviors

Participants across groups attributed positive changes in community health to the VHW Program. Across groups, participants shared positive changes in family planning, maternal health and nutrition, newborn health and nutrition, child health, adolescent reproductive health, child marriage, and sanitation and hygiene.

Family planning

Across adult groups in Mafa and Bayo, participants reported an increase in child spacing and use of contraception due to increased knowledge about the importance of family planning and child spacing as a result of the VHW Program. A married woman in Mafa explained:

"Now that people have gotten the idea of family planning, these risks associated with unwanted pregnancy have reduced. But before, these used to happen because there was no awareness of family planning."

Women FGD participants across sites discussed that community members learned about different contraceptive methods from VHW household visits as well as from hospitals. One female participant from Bayo explicitly referenced VHWs' family planning counselling card, which provided an opportunity for women to "choose the best option for them to delay or avoid their pregnancy using the different methods that best suits them."

Participants also shared that they learned about the importance of child spacing from VHWs. When asked by the facilitator whether there have been changes in RH outcomes in the community since the start of the VHW Program, one woman from Mafa said:

"Definitely, there [have] been changes. There is a woman who now has two children and has been comfortably resting for more than a year without any pregnancy. But before, nine months after they have given birth, another delivery occurs and the children have now become like twins. But with this program, there has been changes."

Although all adult groups expressed knowledge of modern methods of contraception, married men were more likely than women to cite the use of traditional methods (e.g, local herbs) as a method that community members practice to avoid pregnancy and space children.

Maternal health and nutrition

Married women and men in both locations discussed how the VHW Program led to increased health facility deliveries. Married women explained that women no longer stay at home and practice traditional birth customs; instead, they go to the health facility to deliver because of better quality of care compared to delivering at home and increased safety for the pregnant woman and her newborn. When asked why women now go to the health facility to deliver, a married woman from Mafa responded:

"To avoid loss of child or unsafe delivery. Previously, people used to face some challenges giving birth at home, like putting local herbs and smoke, which can cause heat in the room. But now that there has been much awareness, it is better to go [to the facility] because of the modern technologies and also availability of proper ventilation and assistance from the health care providers...for safe and healthy delivery. Bleeding that may give them problem at the time of labor is also reduced."

Adults across groups also discussed increased use of other maternal health services, such as ANC and PNC. Women across groups and married men from Bayo noted that pregnant women use ANC and PNC services at the health facility due to increased awareness from VHWs about the importance of these services, and they said that they also now access the health facility when there is a problem during pregnancy.

Women across groups and married men from Mafa described positive changes in maternal nutrition outcomes and consuming more nutritious food during and post pregnancy due to information they learned from the VHWs. A married woman in Mafa explained:

"At the time we are pregnant before, we used to take any type of food and not even eat sometimes. But with the awareness we have received, we are given some cards like posters which shows us the food we should take at the time we are pregnant. Both literate and illiterate people understood the type of food that will build their body."

Newborn health and nutrition

Adult female groups in Bayo and married women in Mafa indicated positive changes in newborn health and nutrition due to the knowledge gained from the VHWs. Women in these groups shared



that they learned how to take care of newborns and go to the health facility for vaccinations and to treat illnesses. All adult groups explained positive differences in newborn health over time and appropriate practices to take care of newborns; however, men across locations also cited the use of traditional health practices to care for newborns more often than women and adolescent girls.

Women in Bayo discussed positive newborn health outcomes resulting from the VHW Program:

P1: "Previously, there [have] been a lot of problems... But now, when they visit the hospital, they show them the proper way of sitting the baby and correct the women."

P2: "Well, the children now have strength in their diets and the parents too because they have learned a lot." (Single/Divorced/Widowed Women, Bayo)

Child health

Women across groups, and men to a lesser extent, discussed improvements in child health practices as a result of what they learned from VHWs. A woman from Mafa explained:

"Ever since the VHWs started going household to household, there has been an increase in the sanitation, hygiene practice, nutrition, and also taking care of child health by taking them to the hospital and checking on their health problem and getting medication." (Single/divorced/widowed woman, Mafa)

Women in Mafa and Bayo emphasized the importance of going to the health facility for better quality of care for children compared to traditional methods that were practiced before the VHW Program. One married woman in Bayo explained:

"Like when a child has stomachache or pain, when we took them to obtain a cultural or traditional medication, we used to have a local herb and we mixed it with water to drink. But when we visit the hospital, they will test and diagnose the problem of the child and later give proper medication to them, without drinking any herb. From there, these stomachaches or pains have reduced and the child gets better health."

Adolescent health and child marriage

Female groups, especially adolescent girls, discussed how the VHW Program has improved adolescent reproductive health, including menstrual health and family planning. Across female groups, participants reported how adolescent girls safely manage their monthly periods. Adolescent girls explained that they are practicing better menstrual hygiene due to the knowledge imparted by VHWs, such as practicing pain management by accessing pain medication from the hospital or chemists (including pharmacies and other drug shops) to feel more comfortable during menstruation.

Married and unmarried adolescent girls across locations reported increased awareness about contraceptive methods, and an increase in contraceptive use and child spacing among the community more broadly. One adolescent girl explained how the VHW Program resulted in fewer pregnancies and STIs:

"...after the VHWs gave advice, there has been increase in the use of the use of the modern methods and, as such, it has reduced the rate of getting pregnant and also reduced the rate of getting infected with STIs." (Married adolescent girl, Bayo)

Most groups reported that women go to the health facility to access contraceptives. However, some unmarried adolescent girls and married men reported that some community members still use

traditional methods, such as *guru*,³⁸ to prevent pregnancies.

Attitudes toward child marriage differed across groups. While married men generally agreed that 14–15 years, or “the age of puberty,” is an appropriate age for adolescent girls to marry, most adult women participants cited 17 years as the youngest age at which an adolescent should be married. Moreover, adolescent girls agreed that they should not marry until they reach 18 years, at which point they have completed their education and are “mentally fit at the time or grown enough to be married” (Unmarried adolescent girl, Bayo).

Adolescent girls reported that child marriage rates had decreased due to increased awareness among adults regarding the negative consequences of child marriage through the VHW Program. A married adolescent girl in Mafa stated:

“Some people gave out their daughter in marriage at the age of 13 years, and after the VHWs gave more advice to parents on the kinds of challenges or issues related to early marriage, they have now been convinced at some point and [are] not giving out their daughter in marriage until she is fully grown up and mentally fit.”

Household WASH practices

All groups mentioned that community members were following improved WASH practices. Most groups reported that they learned about proper WASH practices from VHWs and explained how they applied this knowledge in their homes. Most groups discussed disinfecting toilets, cleaning hands, washing children, cleaning food containers, filtering water, and safely disposing waste.

Some participants reported improved family health, including a decrease in illnesses, since they had been practicing better hygiene and sanitation in their households. Two married adolescent girls in Bayo said:

P1: “Yes, that is because in the past when one is not having a clean environment or even one’s toilet is not clean, they will demonstrate to you how to make use of the detergents and make the toilet look clean using detergents and also how to make your environment/home look clean.”

P2: “They have shown us how keep our water clean, how to eat food, how to wash our toilets. And for that reason, the rate of illness has reduced.”

Challenges

Community members also reported some challenges they experienced, including accessing services and supplies at health facilities and engaging men effectively.

Accessing services and supplies at health facilities

Some women in both locations shared positive perceptions and experiences with the referral system. A group of married women in Bayo discussed how they received referral cards from VHWs, which prompted them to use health facility services. Women in Mafa explained that the referral system was effective because the referral card allowed them to skip the queue, so they don’t have to wait in line to see a health provider. Some VHWs in Mafa reported that at first community members were not receiving drugs at the health facility, but over time they started to receive the required treatment, although it was not stated what accounted for this change over time.

However, participants across groups shared mostly negative experiences and perceptions of

³⁸ *Guru* is a charm in the form of beads tied on the female’s wrist or waist believed to prevent pregnancy.



accessing services at health facilities after being referred by VHWs. A few respondents in Bayo mentioned long wait times at health facilities, but most of the negative experiences mentioned centered on the lack of free drug commodities at the health facility after being told by VHWs that the services would be free.

Barriers to obtaining contraceptive methods at health facilities for adolescent girls also persisted. Some adolescent girls across groups emphasized that health providers at health facilities would not provide unmarried adolescent girls with modern contraceptives unless they obtained permission from a parent, or were accompanied by their male partner and pretended to be married.

Engaging men

Adult women noted that men should also be engaged in discussions with VHWs; however, they are often outside of the home working when the VHW visits the households. Their discussions revealed the importance of engaging men in VHW visits given their decision-making role in other family members' RMNCAHN service uptake. For example, women in Bayo said that they needed permission from their husbands in order to access contraceptive methods:

Moderator (M): "Should anyone know if a woman is going for these [contraceptive] methods?"

P1: "Yes, her husband should know about it, and it should be on agreement that she should go for any of these methods."

P2: "It is with the consent of the husband that they should be able to get these methods but if they go straight to obtain it from the health facility without the consent of their husband, there will be a problem after that."

Recommendations from VHWs, SVHWs, and community members to improve the VHW Program

To address challenges, community members and VHW staff shared recommendations to improve the program, including perceived gaps and suggestions on what to add or change in programming.

Workforce size and composition

Respondents across groups recommended that the program hire and train additional VHWs to reach more households, particularly in remote areas where health facilities are not available. A few groups of married men suggested that the program hire male VHWs to target men outside of the home. A married man in Bayo explained his rationale for male VHWs: "Some men don't listen to the women at some point, but when we have the men as VHWs, there will be much more attention from the men's side."

Commodities

Participants across groups emphasized gaps in commodity availability, including medicine (e.g., paracetamol, zinc), delivery kits, insecticide-treated nets, and lack of free drug commodities at health facilities, along with lack of other resources, including boreholes and potable water. A VHW in Bayo explained how the lack of drugs negatively affected her work by creating "all these issues of lack of acceptance of the referrals by some people in the community. If that [drugs] is provided, this gap can be closed" (VHW, Bayo). Some participants across groups also noted that distribution of other commodities such as soaps, detergents, and cash would encourage greater household cooperation and acceptance of the VHWs, especially given community members have come to expect "gifts," or in-kind goods, from NGOs and INGOs.

Compensation

Community members across groups emphasized the need to increase the payments to VHWs “to motivate them and boost their activity in our community” (single/widowed/divorced woman, Bayo), while VHWs in Bayo encouraged the program to pay VHWs on time and provide money to pay for the cost of cell phone service, because VHWs used their phones to schedule home visits or do remote home visits.³⁹ SVHWs in Mafa also expressed frustration regarding delays in payments and/or not receiving enough remuneration for their work.

VI. Discussion

Overall, the evaluation findings suggest that the VHW Program improved household health and nutrition practices and increased health-seeking behavior at health facilities among households visited by VHWs in Mafa and Bayo. The evaluation also identified effective strategies and enabling factors that supported success in RMNCAHN service provision, uptake, and outcomes in Bayo and Mafa LGAs. However, barriers related to RMNCAHN health services in intervention sites, particularly lack of availability of free supplies needed to deliver quality RMNCAHN services, remained a challenge.



Delivery kit that was delivered to households in Mafa. © Grace Kivu.

³⁹ Program staff did not initially provide phone credits to VHWs; however, as COVID-19 remote protocols went into effect, a monthly credit was added to the VHW stipend package to support remote home visits and phone usage related to the VHW Program.



Facilitators related to improved RMNCAHN health and services

Knowledge, attitudes, and beliefs of community members

VHW household visits improved knowledge, attitudes, and beliefs of community members in intervention sites, which, in turn, improved service use and RMNCAHN. Community members and VHWs reported improved knowledge about health practices relating to RMNCAHN and health-seeking behaviors due to the VHW visits. Although most community members reported use of traditional health methods at baseline, community members reported increased knowledge about the benefits of seeking and receiving care at health facilities due to the VHW Program. As such, most community members reported being less likely to use traditional methods to resolve health issues, and more likely to access ANC, PNC, labor and delivery, family planning, newborn health, and child health services at health facilities.

Acceptance of VHW Program among community members

VHWs experienced initial resistance by some households, particularly men, at the start of the program; however, over time, community members welcomed the VHWs. Households' acceptance and trust of VHWs allowed VHWs to impart valuable health information to community members to improve communities' health-seeking behavior and practices. Community members, including adolescent girls, reported that the health information provided was relevant and useful to community members, including adolescents. Given the content and successful delivery of the information, community members acted by increasing health facility use and improving health practices related to RMNCAHN. Evidence from the program monitoring data corroborates these improvements, indicating better RMNCAHN outcomes overall.

VHW training, job aids, and data tools

VHWs and SVHWs reported that the initial training on their roles and responsibilities, including use of visual job aids and data tools, effectively prepared them for their work. They also reported that the job aids and data tools, including the updated tools, supported them to fulfill their roles by improving the delivery of health information to households, which, in turn, led to improved health-seeking behavior and practices.

Supportive supervision

Supportive supervision provided by SVHWs to VHWs and from the M&E and programs teams to the SVHWs facilitated motivation, satisfaction, and effectiveness of VHW service delivery. Supportive supervision visits provided an opportunity for SVHWs and VHWs to collectively address issues and concerns on VHW performance, service delivery, and data collection and management in different formats (e.g., household visits, one-on-one, and group). Notably, SVHWs reported that providing mentorship and guidance to VHWs was what they enjoyed most about their jobs. SVHWs also reported positive interactions with the M&E team, indicating that the team supported them with data management issues.

Barriers to RMNCAHN service provision and uptake

Cost of drugs and commodities

Despite efforts to improve the quality of RMNCAHN services at target health facilities through the PHC- and supply chain-strengthening components of the VHW Program package, the lack of available commodities and drugs, and the cost of drugs and commodities, deterred community

members from seeking health services at the facilities; some instead continued to use traditional health methods. This service delivery pitfall underscores the importance of effective, efficient, and timely supply chain management to meet community health needs. The PHC and supply chain components of the program should be further assessed to understand the root causes of the persistent supply chain challenges.⁴⁰

Male dominance over RMNCHAN service uptake

The VHW Program did not fully address the underlying knowledge systems and motivators for how and where some community members in the assessed localities sought health care when they or their family members experienced ill health. In the baseline assessment, it was found that men/husbands were key decision-makers about family health, and that men often preferred to seek out traditional medicine for themselves and their family members. This remained the case at endline, suggesting that the VHW Program either had not provided messages that were aligned with the cultural belief systems in a way that was convincing to men/male heads of households, or additional time and tailored gender-transformative messaging would be necessary to dismantle harmful gender norms and power dynamics that limit women's and girls' autonomy to make decisions about their and their family's health.

Opportunities to improve the RMNCAHN Project

Several opportunities to improve the VHW Program and complementary interventions emerged through this evaluation.

Targeted strategies for key subgroups

Despite improved RMNCAHN service use among targeted communities, targeted strategies are needed to enhance engagement with men and adolescents. Given men are key decision-makers in household members' health decisions, including service use, targeted outreach is necessary to align their knowledge, attitudes, health-seeking behaviors, and health practices with uptake of health services at formal health care facilities. Barriers to engaging men included their resistance to accepting information from female VHWs and inability to access them during household visits. As such, the VHW Program should hire and train male VHWs to deliver targeted programming to men outside of the home where men are more likely to congregate. Health messaging should be aligned with communities' cultural knowledge of homeopathic medicine to encourage integration of formal medicine within communities' established pathways of health care use. In time, the VHW Program could create linkages with social-protection-oriented programs that aim to promote inclusion and consideration of women and girls in household and community decision-making in support of broader gender-transformative programming goals.

Targeted outreach and tailored services for adolescent girls is also necessary given their heightened barriers to accessing quality RMNCAHN services compared to other subgroups. This was identified in the VHW Program baseline assessment, where consultations indicated that the lack of an adolescent health policy at the state level was a barrier to more adolescent-friendly services at health facilities, and the project supported the development of an adolescent RH policy to address this. Adolescent

⁴⁰ It is worth noting that the COVID-19 pandemic disrupted health system functioning and could have been a moderating variable in the effect of the VHW Program package on PHCs. It may be that, without the VHW Program, the shock of COVID-19 on PHCs would have been even worse. However, some of the documented barriers, such as lack of commodity availability, may have occurred regardless of COVID-19.



girls also reported initial discomfort during VHW household visits, which was corroborated by VHWs' experiences with this subgroup. The VHW Program can address these barriers by conducting targeted, adolescent-friendly outreach to adolescent girls that is inclusive of contraception, unsafe abortion, and post-abortion care (PAC) awareness-raising and values clarification and attitudes transformation (VCAT) and adolescent-friendly trainings to health providers at the facility level.

Strengthen availability of supplies

Despite the supply chain-strengthening component of the project, which included training and other support to BSPHCDA to improve logistics, procurement practices, and management of supplies and equipment, lack of supplies available at health facilities to community members at no cost continued to present a barrier and deter community members from seeking health services. Supply chain gaps must be addressed holistically, addressing both supply chain management gaps and the funding environment for supplies. The VHW Program should also consider equipping VHWs with essential supplies that are approved for community-based distribution (as was done toward the end of the program in Mafa) to directly reach community members with needed supplies. Finally, PPE gear must be consistently available to all staff participating in the program.

VII. Recommendations

Based on evaluation findings, the team developed the following recommendations for partners providing and supporting RMNCAHN services in Mafa and Bayo LGAs.

The BSPHCDA and BSMOH should:

- Improve supply chain management by:
 - expanding measures to train providers, pharmacists, and supply chain managers on supply chain management, including effective distribution, and stock management;
 - ensuring health facilities are stocked with essential drugs, commodities, and supplies; and
 - equipping VHWs and other community-level workers with medicines approved for community-based distribution (such as paracetamol, zinc, iron, emergency contraception, condoms) after appropriate training.
- Support quality RMNCAHN service provision by:
 - addressing providers' attitudes around partner permission for RMNCAHN service use, including women-led decision-making around contraceptive uptake and PAC, by providing VCAT trainings;
 - strengthening availability and accessibility of adolescent-friendly contraceptive and SRH services for adolescents by conducting trainings on adolescent-friendly service delivery and VCAT for providers and refresher trainings for VHW Program staff;
 - increasing pay for VHWs and institute mobile money payments as available to avoid payment delays in order to maintain their motivation and compensate them based on level of skills and capacity; and
 - hiring and training additional VHWs to ensure programming reaches the most remote or isolated communities for which there is an operational health facility.
- Strengthen data quality and management by implementing mobile data collection at health facilities and community-based service delivery.



- Strengthen community-based acceptance and promotion of RMNCAHN efforts by:
 - advancing programming that supports gender-transformative attitudes and behavior change around SRHR, particularly family planning, PAC, and unsafe abortion, including supporting women- and girl-led decision-making around RMNCAHN;
 - conducting targeted efforts to reach adolescents with key RMNCAHN messages and services;
 - expanding efforts to reach men and boys given their role as key decision-makers in girls' and women's lives, including family planning and RMNCAHN service use, by hiring and training male VHWs and SVHWs to target men and adolescent boys with programming outside of the home and delivering health messaging to dispel misinformation and myths about the efficacy of traditional contraceptive methods;
 - engaging traditional community leaders and elders in cultural integration of key health messages and health-seeking behaviors.

Donors should:

- Expand the VHW Program or other similar community-based health service delivery to additional areas in Borno State. Ensure health facilities are available and transportation to facilities is provided, so distance and cost are not barriers to accessing RMNCAHN services.
- Continue to support diverse, equitable partnerships that facilitate high quality programming and research and promote women-led organizations and civil society to drive durable community-grounded solutions.
- Support provision of commodities in health facilities to enable community members to access high-quality services at low or no cost, while supporting advocacy and supply chain management capacity strengthening to increase ownership for commodity security among government bodies.



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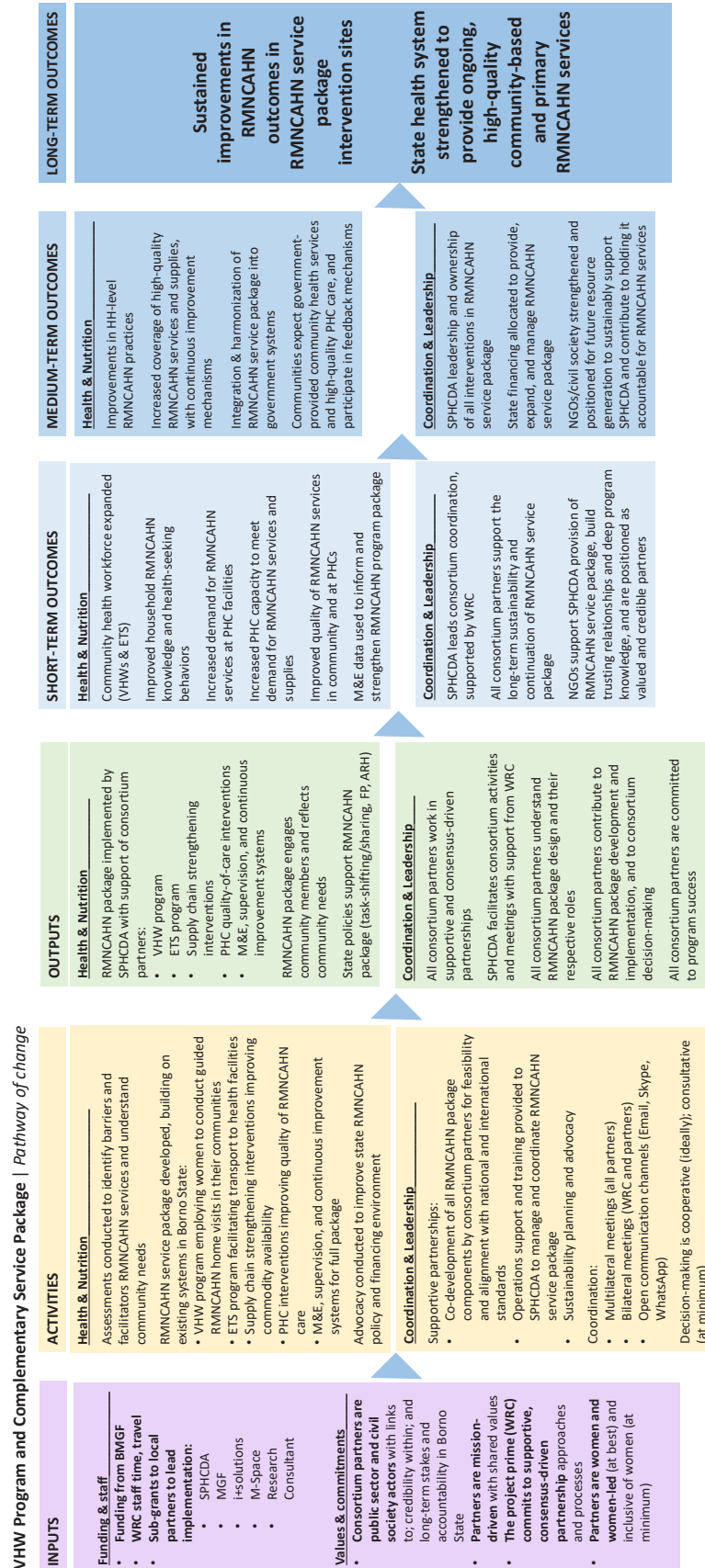
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Acronyms and Abbreviations

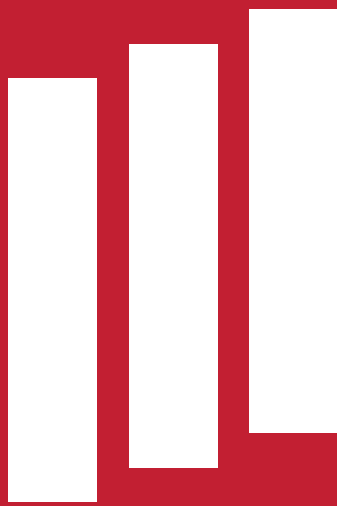
BEmONC	Basic emergency obstetrics and newborn care
BSMOH	Borno State Ministry of Health
BSPHCDA	Borno State Primary Health Care Development Agency
CHEW	Community Health Extension Worker
CIP	Costed Implementation Plan
DHIS2	District Health Information System
DQA	Data quality assessment
EC	Emergency contraception
FGD	Focus group discussion
HF	Health facility
HFA	Health facility assessment
KII	Key Informant Interview
MCH	Maternal and child health
RMNCAHN	Reproductive, Maternal, Newborn, Child, Adolescent, and Health and Nutrition
SPHCDA	State Primary Health Care Development Agency
SRH	Sexual and Reproductive Health
SRHR	Sexual and Reproductive Health and Rights
SVHW	Senior Village Health Worker
VHW	Village Health Worker
WHO	World Health Organization
WRC	Women's Refugee Commission

Annex 1: Theory of Change



Annex 2: Qualitative Participant Characteristics

Participants	Age Group	# of FGDs/KIIs	# of Individuals
FGDs			
Married women (Delivered a baby during program)	20–49	4	40
Married women (Did not deliver a baby during program)	20–49	7	30
Widowed and single women heads of household	19–49	8	78
Married adolescent girls	15–19	4	40
Unmarried adolescent girls	15–19	2	20
Men (From household with a woman who gave birth)	20–49	4	40
Men (From household with a woman who didn't give birth)	20–49	4	38
Village health workers	N/A	7	42
Total		36	326
KIIs			
SVHWs		7	7
Grand Total			333



**W O M E N ' S
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