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Maternal and Child Survival Program

Evaluation of Interventions to Improve Reproductive, Maternal, and Newborn Health Service Availability and Readiness in Kogi and Ebonyi States

Endline Survey Report

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The Maternal and Child Survival Program (MCSP) is a global, $560 million, 5-year cooperative agreement funded by the United States Agency for International Development (USAID) to introduce and support scale-up of high-impact health interventions among USAID's 25 maternal and child health priority countries,* as well as other countries. MCSP is focused on ensuring that all women, newborns and children most in need have equitable access to quality health care services to save lives. MCSP supports programming in maternal, newborn and child health, immunization, family planning and reproductive health, nutrition, health systems strengthening, water/sanitation/hygiene, malaria, prevention of mother-to-child transmission of HIV, and pediatric HIV care and treatment.

* USAID's 25 high-priority countries are Afghanistan, Bangladesh, Burma, Democratic Republic of Congo, Ethiopia, Ghana, Haiti, India, Indonesia, Kenya, Liberia, Madagascar, Malawi, Mali, Mozambique, Nepal, Nigeria, Pakistan, Rwanda, Senegal, South Sudan, Tanzania, Uganda, Yemen and Zambia.

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Abbreviations

ANC	Antenatal care
BEmONC	Basic emergency obstetric and newborn care
CEmONC	Comprehensive emergency obstetric and newborn care
FP	Family planning
HFA	Health facility assessment
HMIS	Health management information system
LARC	Long-acting reversible contraception
L&D	Labor and delivery
MCSP	Maternal and Child Survival Program
MNH	Maternal and newborn health
MOH	Ministry of Health
QoC	Quality of Care
RMNCAH	Reproductive, maternal, newborn, child, and adolescent health
RMNH	Reproductive, maternal, and newborn health

Acknowledgments

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The authors would further like to express their appreciation to the health workers and managers who participated in this assessment, taking time out of their busy schedules to answer questions from the evaluation teams and show them around the health facilities.

Lastly, a big thank you for the immense contributions of all MCSP staff and consultants who helped to implement this evaluation and the MCSP-supported quality improvement interventions, ensuring that they met high technical standards.

Executive Summary

Background and Rationale

The Maternal and Child Survival Program (MCSP) is a global U.S. Agency for International Development (USAID) cooperative agreement to introduce and support high-impact health interventions in 25 priority countries, with the ultimate goal of ending preventable child and maternal deaths within a generation. In Nigeria, MCSP focused on improving maternal and newborn health care services in Ebonyi and Kogi states by implementing high-impact interventions for better care on the day of birth when most maternal and newborn deaths occur. Starting with 120 supported-health facilities in 2015 and reaching 321 facilities by the end of project implementation in 2018, MCSP's interventions in Nigeria covered the technical areas of reproductive, maternal, newborn, child,[1] and adolescent health (RMNCAH) as well as the cross-cutting areas of quality improvement, gender, monitoring and evaluation, pre-service education, operations research, and health system strengthening.

To determine the effect of MCSP's RMNH quality improvement interventions in health facilities, baseline and endline quality of care (QoC) and health facility readiness assessments were conducted at a sample of health facilities in Kogi and Ebonyi states that received quality improvement interventions implemented by MCSP and the state Ministries of Health in the first phase of project implementation. The QoC assessment had three components: 1) MNH QoC assessment, 2) Family planning (FP) QoC assessment, and 3) facility readiness and service availability assessment. This report focuses on the third component.

Study Design & Methods

This RMNH QoC Health Facility Assessment (HFA) is cross-sectional in design, including a baseline and follow-up survey conducted two years apart. The readiness assessment included health workers interviews and audit of supplies, equipment and infrastructure in a sample of 40 high-caseload health facilities purposively selected as they were targeted to receive quality improvement interventions. Tools utilized included a facility inventory checklist and structured health worker questionnaires to determine availability of essential MNH and FP services and availability of human resources, equipment, supplies, guidelines, and commodities needed for MNH and FP service provision. The MNH and FP QoC components of the HFA focused on assessment of provider knowledge using structured interview guides and direct observation of the skills of service providers during actual or simulated care, including attending normal deliveries, antenatal care services, and family planning services (see MNH and FP QoC reports at: https://www.mcsprogram.org/resources/).

Key Findings

In this executive summary, we use graphs to show a selected subset of the findings due to space limitations. In the main results section of the report there are tables with additional information.

Description of the sample of facilities

The types of facilities assessed (see Table ES1) included public tertiary hospitals, public secondary hospitals (zonal and general hospitals), mission hospitals, private facilities (clinics and hospitals) and health centers (comprehensive and primary health centers or PHCs). Some of the baseline health facilities were replaced at endline due to security concerns or not having received the quality improvement interventions during the first phase of implementation as planned.

[1] The child health component did not start with the maternal and newborn health (MNH) in 2015 but in 2017

Table ES1: Distribution of the number of facilities assessed by type in Ebonyi and Kogi states

Facility Type	Ebonyi State		Kogi State		Total	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
Tertiary hospital	1	1	1	1	2	2
Secondary hospital	10	3	10	5	20	8
Mission hospital	3	6	2	3	5	9
Private facilities	1	0	2	2	3	2
Primary health centers	5	10	5	9	10	19
Total	**20**	**20**	**20**	**20**	**40**	**40**

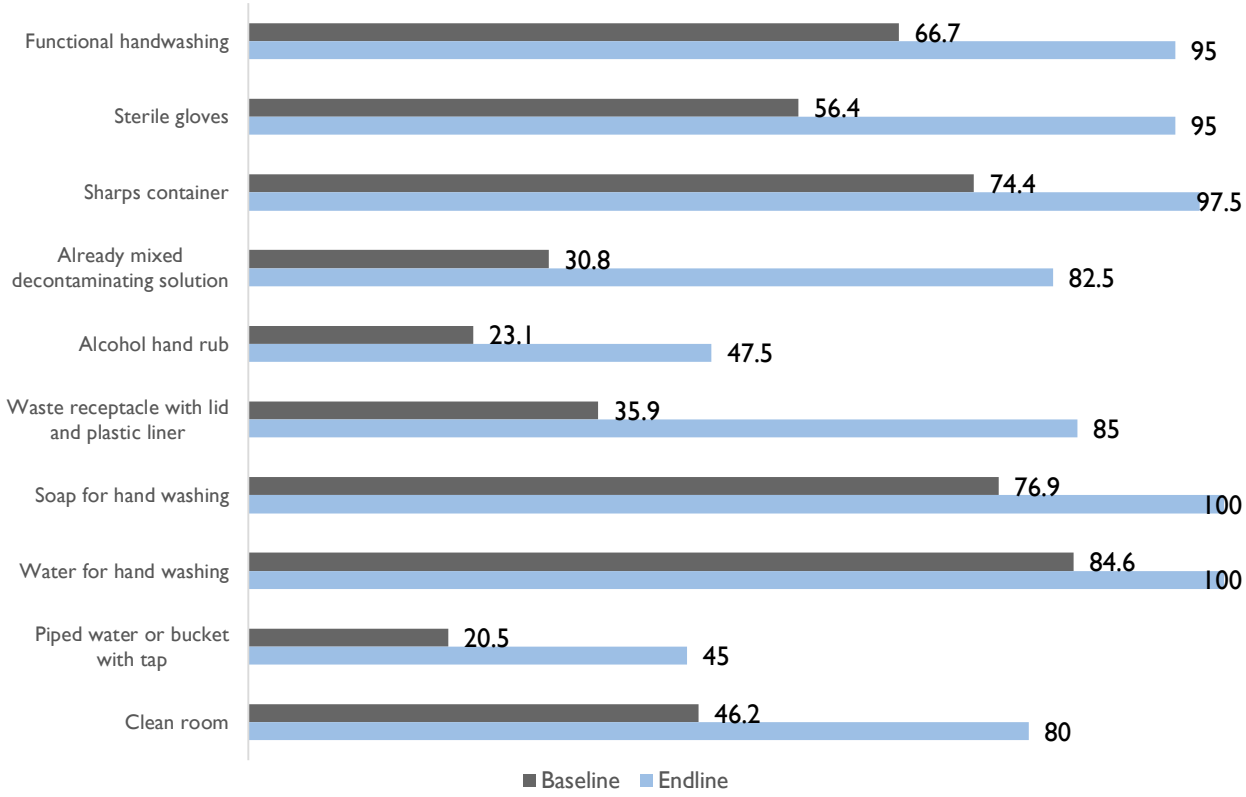
ANC service availability, equipment, and supplies

- The availability of antenatal care (ANC) services and interventions improved significantly from baseline to endline. However, there is still a need to focus on improving some aspects of ANC examination areas, such as the provision of functional toilet facilities for clients and adequate equipment and testing supplies, such as blood tests for anemia, syphilis, Rhesus factor, blood group, rapid HIV tests, and urine test strips.
- Tetanus toxoid (TT) vaccine is only regularly available in about one-fifth of the health facilities. Hence, access to TT vaccines still needs to be improved for pregnant women using ANC services in both states.

Delivery room infrastructure and services

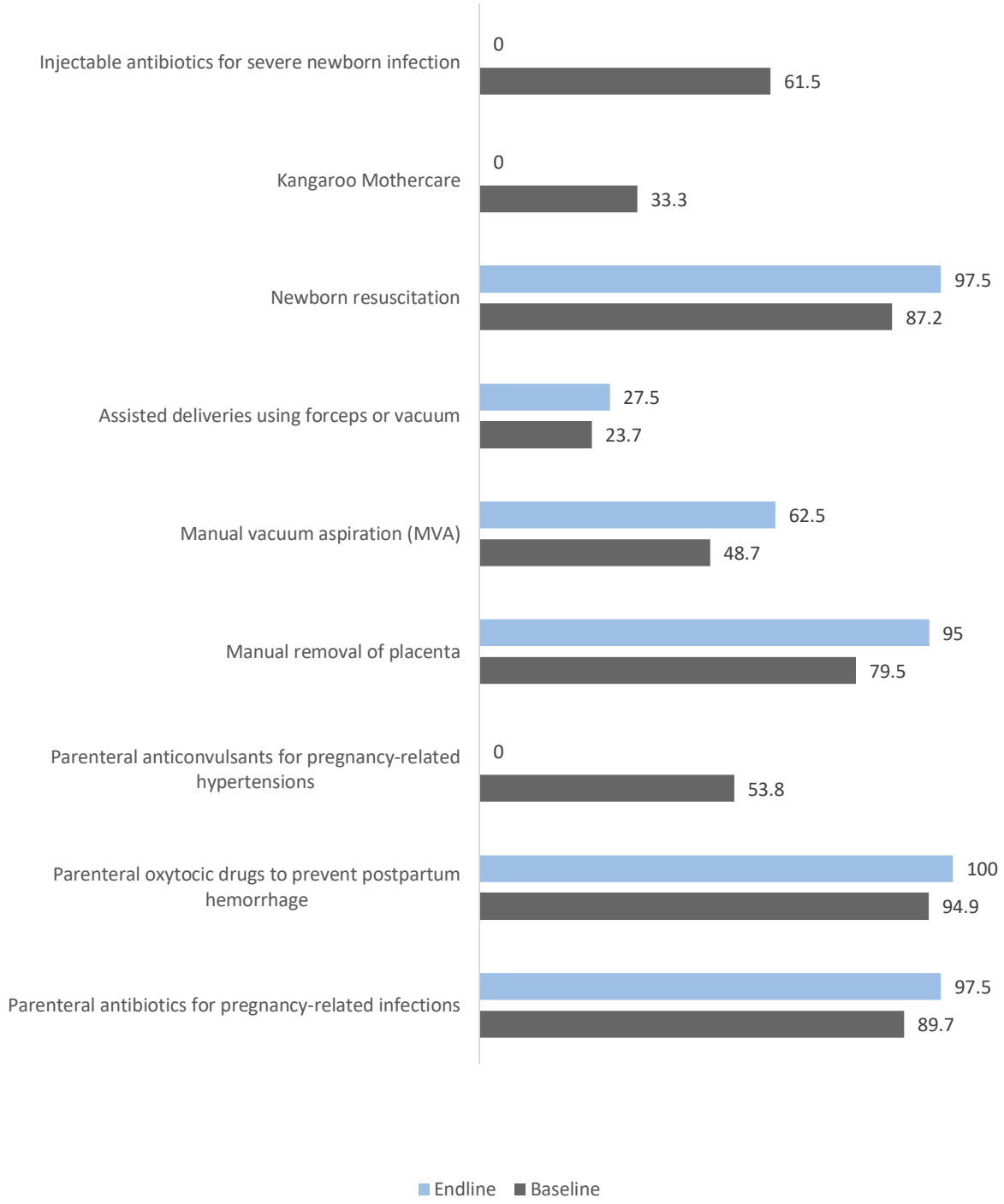
- Delivery room infrastructure in both states still needs improved audio/visual privacy to ensure the dignity of pregnant women and also encourage having a companion/support person during delivery.
- Compared with baseline, virtually all the facilities in the two states had all the essential delivery supplies, such as sterile scissors, cord clamps, and towels to wrap the baby and suction apparatus in the delivery room ($p=0.000$).
- Availability of infection prevention and control supplies increased from baseline to endline (see Figure ES1 below). Although more than twice as many facilities had access to running water at endline (20% to 45%), most facilities lacked access to piped water or veronica buckets with tap.

Figure ES1: Availablity of infection control items in the delivery room (percentage of facilities, n=40)



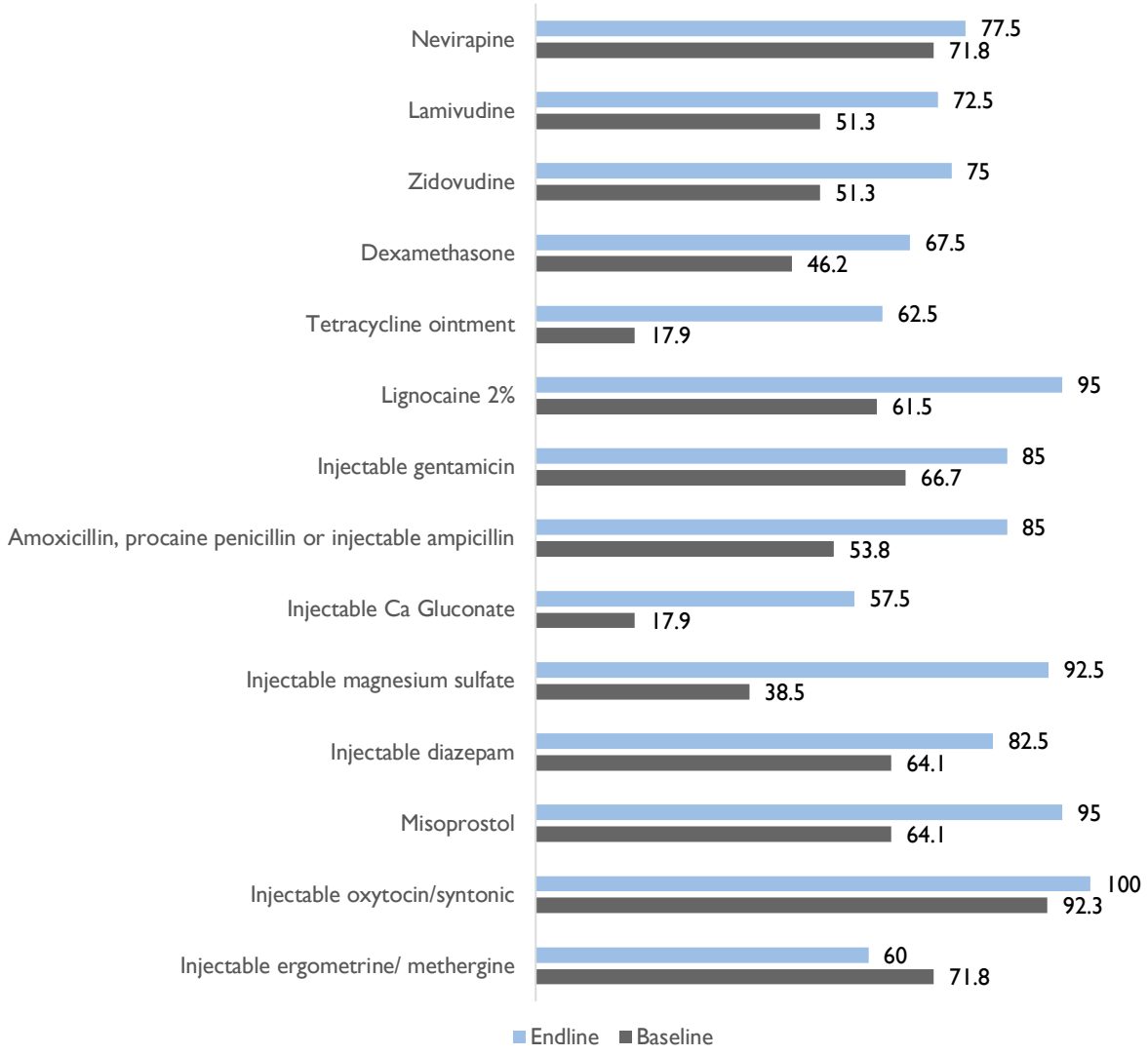
- Availability of basic emergency obstetric and newborn care (BEmONC) signal functions increased from an average of three out of the seven (original) functions at baseline to five of the seven functions at endline. The availability of newborn resuscitation services and parenteral anticonvulsants to treat pregnancy-related hypertension showed marked improvements. Availability of assisted delivery services remained unacceptably low, with only a little more than a quarter of health facilities ready to offer these services at endline.

Figure ES2: Availability of basic emergency obstetric and newborn care procedures (percentage of facilities, n=40)



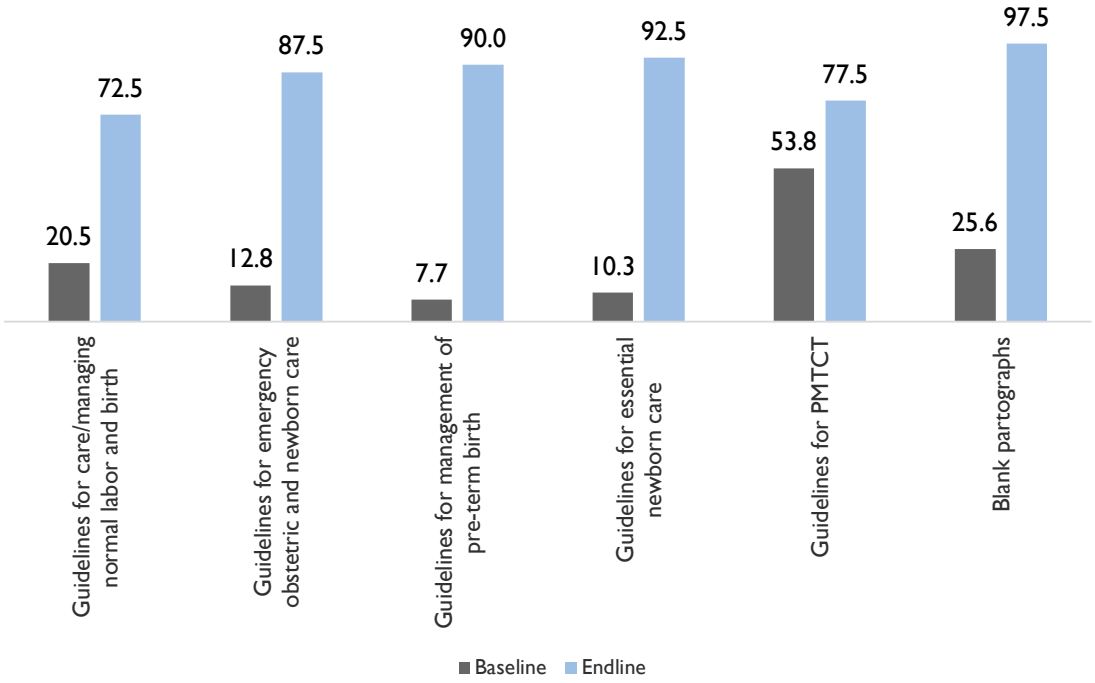
- Availability of many essential medications for routine and complicated deliveries improved, including MgSO4 for severe pre-eclampsia and eclampsia (see Figure ES2).

Figure ES3: Availability of essential medications in the delivery room (percentage of facilities, n=40)



- With respect to comprehensive emergency obstetric and newborn care (CEmONC) service availability, a greater percentage of hospitals at endline also had an anesthetist present or on call 24 hours a day.
- Availability of Kangaroo Mothercare and injectable antibiotics for newborn infection showed notable increases.
- Availability of a functioning toilet for labor and delivery (L&D) clients was low at only 50% of facilities at endline.
- Availability of postpartum intrauterine device (PPIUD) insertion kits improved greatly.
- Facilities in Ebonyi were generally better stocked with L&D supplies than in Kogi: injectable oxytocin/syntonic was the only key medication available in all the facilities in Kogi State at endline.
- More facilities in the two states now have the recommended L&D service delivery guidelines, compared with the baseline (see Figure ES3). Facilities with partographs available also increased from 26% to 98% (p=0.000).

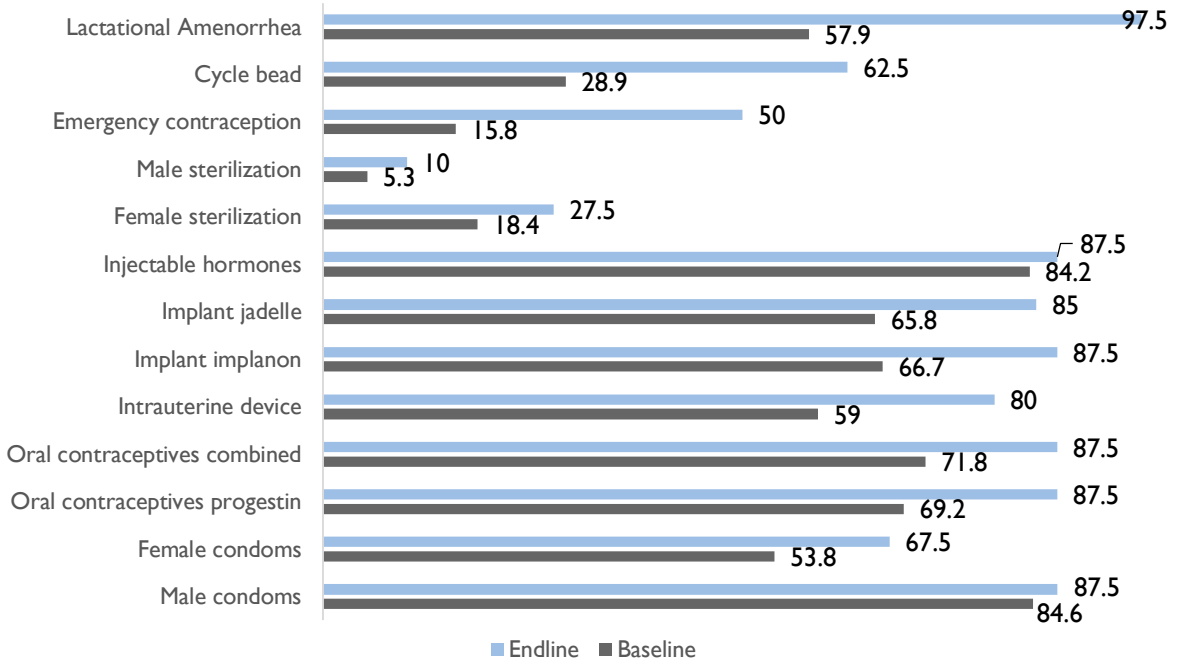
Figure ES4: Availability of service delivery guidelines and job aids (percentage of facilities, n=40)



Family planning service availability, equipment, and supplies

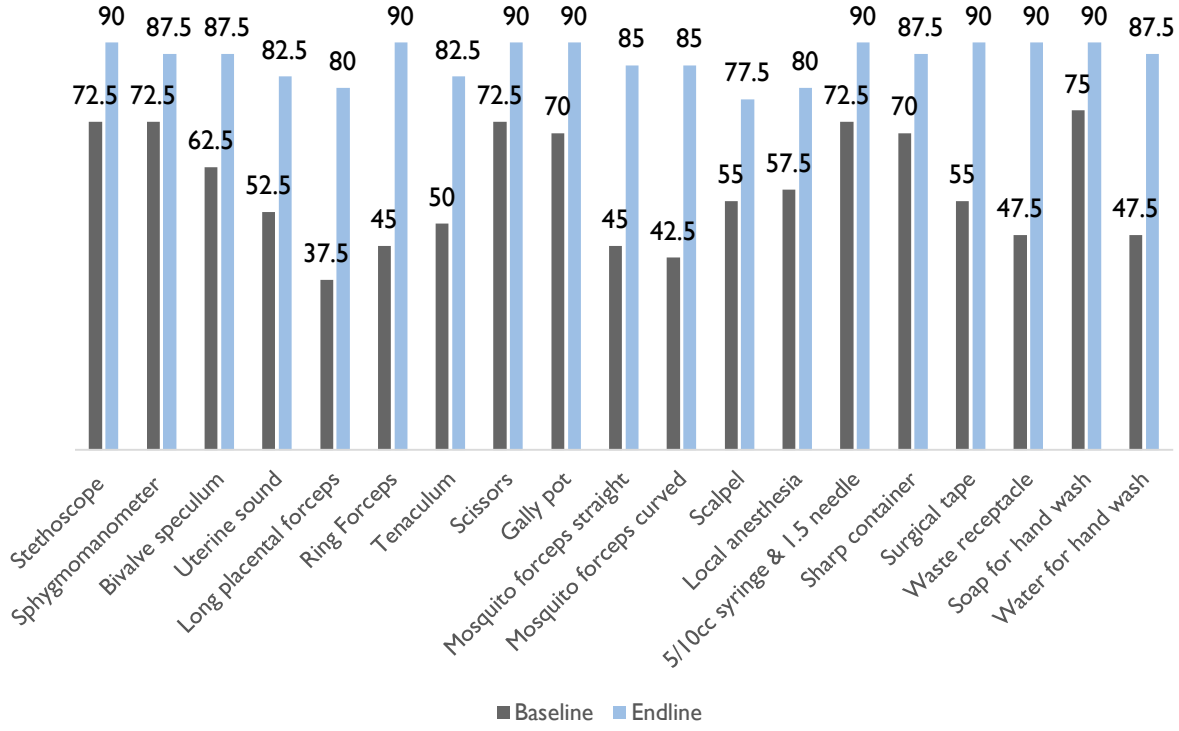
- The availability of family planning services improved significantly from baseline to endline (32% to 90%). The percentage of facilities offering different FP methods, including the lactational amenorrhea method (LAM) for postpartum women, also increased (Figure ES4).

Figure ES4: FP methods offered at the facility (percentage of facilities, n=40)



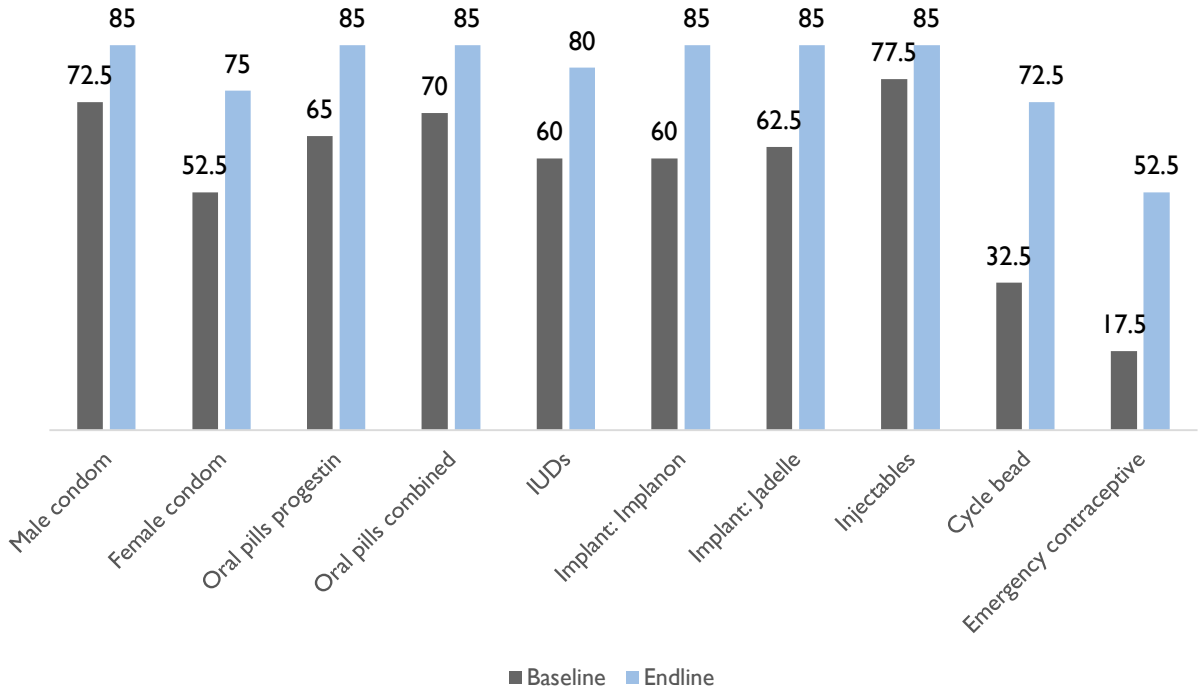
The percentage of health facilities with essential FP methods, supplies, and equipment increased between baseline and endline in the two states (Figures ES4 and ES5).

Figure ES5: Availability of FP supplies in the FP examination room (percentage of facilities, n=40)



- Family planning commodities available in the FP examination rooms increased between baseline and endline in the two states (Figure ES5). Both states had the greatest increase in the percentage of facilities with emergency contraceptives available (Ebonyi: 5% at baseline to 45% at endline; Kogi: 30% at baseline to 60% at endline).

Figure ES6: FP commodity availability (percentage of facilities, n=40)

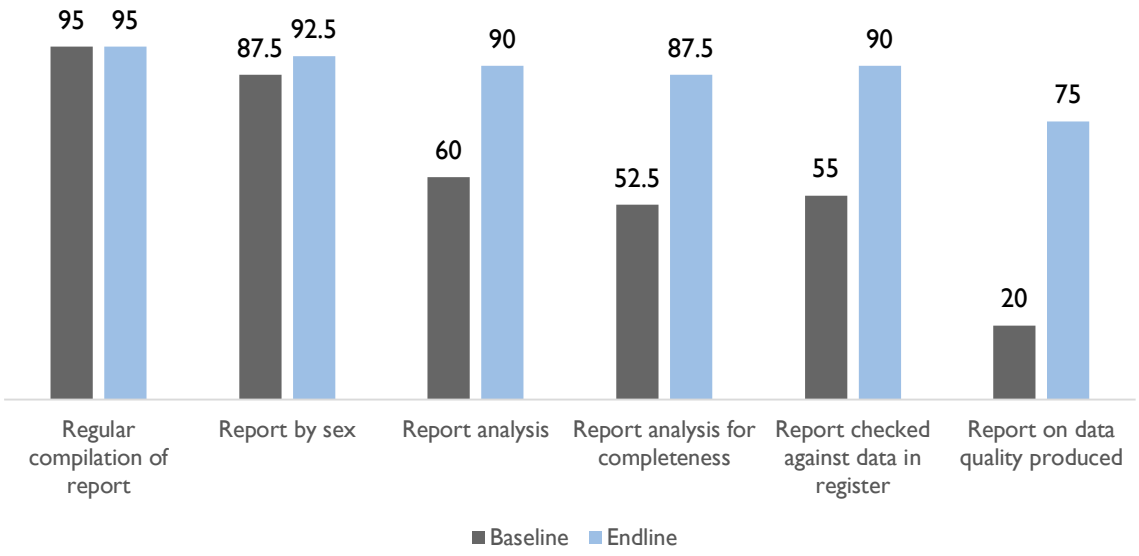


- There is still room for improvement in the availability of female and male sterilization services, display of IEC materials for men, and access to emergency contraceptives, cycle beads, and the IUD (Figure ES6).
- About a fifth of facilities experienced a stock-out of FP methods in the last 3 months at baseline and this remained the same at endline.

Health Management Information System and Data Use

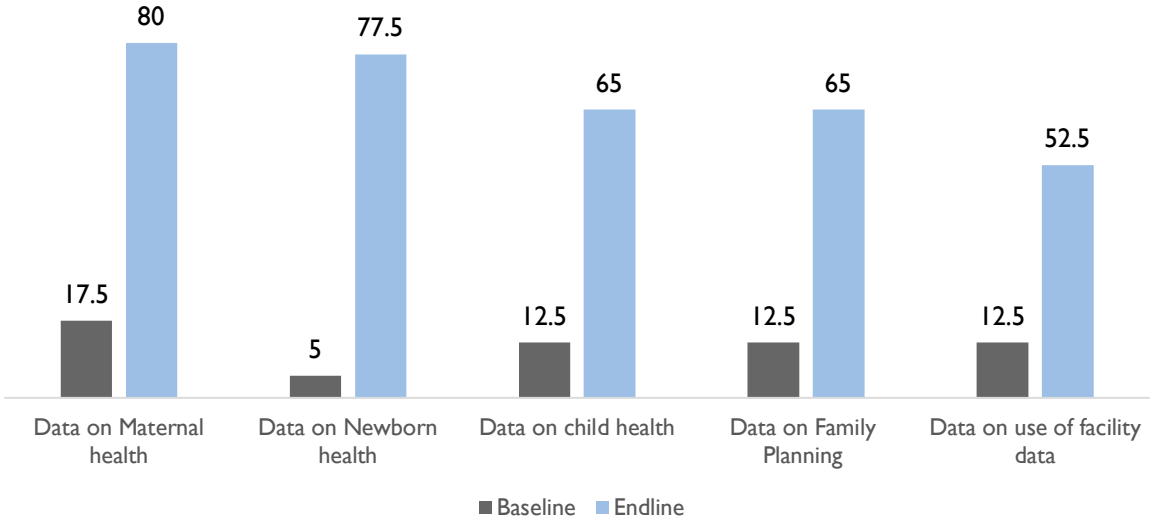
- The proportion of facilities that adequately use health management information system (HMIS) tools to prepare reports increased from 20% at baseline to 90% at endline in Ebonyi, and from 15% to 55% in Kogi.
- The proportion of facilities that conduct monthly validation of summary reports against the registers increased from 65% to 100% in Ebonyi and from 45% to 80% in Kogi. (see Figure ES7).

Figure ES7: Use of HMIS tools for reporting and analysis (percentage of facilities, n=40)



- The percentage of facilities with up-to-date laminated poster data dashboards in at least one of the service areas assessed, suggesting ongoing use of facility data, increased from 25% to 55% in Ebonyi and from 0% to 50% in Kogi.
- The percentage of facilities displaying maternal, newborn, child, and/or family planning data increased dramatically over time (Figure ES8).

Figure ES8: Facility displays any data related to specific health services in table, graph, chart or map (percentage of facilities, n=40)



- The provision of feedback by the local (district) government area (LGA) team to health facilities on the monthly facility summary reports submitted to LGA headquarters increased between baseline and endline: 85% of facilities in Ebonyi received feedback at endline compared with 21% at baseline, and in Kogi, 72% at endline compared to 31% at baseline.

- At endline, more facilities in Ebonyi State than Kogi State reported using data to inform decisions such as mobilization of resources, procurement of commodities, staff training, community outreaches, and organization of services (data only collected at endline)
- The percentage of facilities reporting they had a functional maternal and perinatal death surveillance response mechanism also increased dramatically over the baseline level.
- Despite the improvements observed in the area of data visualization, use, and reports produced from the HMIS, data quality in Kogi State still needs to be improved.

Conclusion

USAID investments through MCSP in equipping and providing other support to the 40 facilities assessed in Ebonyi and Kogi states, in partnership with the state MOHs, have resulted in increased service availability and readiness of these facilities to deliver quality high-impact ANC, L&D, and FP interventions. We further anticipate that similar changes were achieved at other MCSP-supported facilities with the quality improvement intervention in phases one and two of the program (n=51 additional facilities), as they received similar types of support. However, substantial effort is still needed to improve the readiness for and availability of emergency obstetric and newborn services in the two states.

Recommendations

ANC Services

- The provision of ANC services improved significantly from baseline to endline. However, there is a need to focus on improving some aspects of ANC examination areas such as the provision of functional toilet facilities for clients and adequate equipment and testing supplies such as blood tests for anemia, syphilis, Rhesus factor, blood group, rapid HIV tests, and urine test strips.
- Tetanus toxoid (TT) vaccine is only regularly available in one-fifth of the facilities in both states. Hence, access to TT vaccines still needs to be improved for pregnant women using ANC services in both states.

Delivery Room Services

- Most delivery rooms in both states had good audio-visual privacy for patients, but there is still room for improvement to ensure the dignity of pregnant women using these facilities and also encourage companionship during delivery.
- Although access to running water doubled at endline assessment (20% to 45%), access to piped water or veronica buckets and tap are still needed for most of the health facilities.
- The state MOHs should continue to work toward ensuring that facilities providing delivery services offer all BEmONC signal functions and hospitals with operating rooms offer all CEmONC signal functions, including cesarean section and blood transfusion.

Family Planning Services

- The availability of routine postpartum services improved significantly (from 32% to 90%). However, there is still room for improvement in the provision of female and male sterilization services, display of IEC materials for men, and access to emergency contraceptives, cycle beads, and the IUD.
- Stock-outs of FP methods are continuing to hamper optimal service provision and should be addressed.

HMIS Knowledge and Data Use

- Despite the improvements observed in data visualization, sharing, and use and production of reports from the HMIS, data quality in Kogi State still needs to be improved. Both states will need to sustain improvements in reporting and visualization of maternal and newborn health and family planning data, indicator calculation, and, above all, the use of data in decision-making for mobilization of resources, procurement of commodities, staff training, and community outreach services.

Introduction

In 2013/14, the maternal mortality rate in Nigeria was 576 per 100,000 live births, the neonatal mortality rate (NMR) was 37 per 1,000 live births, the infant mortality rate was 69 per /1,000 live births, and the under-five mortality rate was 128 per 1,000 live births.[2] These mortality rates make Nigeria one of the largest contributors to the global burden of maternal, newborn, and child deaths. The major causes of maternal and newborn deaths include hemorrhage and preterm birth complications. Pneumonia, diarrhea, and malaria account for much of child mortality after the neonatal period. A further analysis of the 2013 Nigeria Demographic and Health Survey showed no significant difference in the NMR and perinatal mortality rates between babies delivered in health facilities and at home, thus calling into question the quality of care that newborns receive in the health facilities.

In 2015, the Government of Nigeria and the US Agency for International Development (USAID) requested the USAID flagship Maternal and Child Survival Program (MCSP) to intervene in Nigeria as part of a global cooperative agreement to introduce and support high-impact health interventions in 25 priority countries. In Nigeria, MCSP's focus was to work in Ebonyi and Kogi states to improve maternal and newborn health care services in health facilities. These two states were chosen because USAID supports other projects there, such as the Malaria Action Program in States (MAPS) and the Fistula Care Project. The 5-year MCSP project implemented high-impact interventions for better care on the day of birth, when most maternal and newborn deaths occur. Starting with 120 supported-health facilities in 2015 and up to 321 facilities by the end of project implementation in 2018, MCSP's interventions in Nigeria covered the technical areas of reproductive, maternal, newborn, child,[3] and adolescent health (RMNCAH) as well as the cross-cutting areas of quality improvement, gender, monitoring and evaluation, pre-service education, operations research, and health system strengthening.

To determine the effect of MCSP's RMNH quality improvement interventions in health facilities, baseline and endline quality of care (QoC) health facility assessments (HFAs) were conducted in the two states in June 2016 and September 2018, including service availability and facility readiness measures. MCSP conducted a pre/post assessment of the quality of RMNH service provision in 40 MCSP-supported facilities that received quality improvement interventions as part of Phase 1 of the program. The aim of the QoC HFA was to measure the quality of reproductive (family planning (FP)), maternal and newborn health (MNH) services in health facilities supported by MCSP in Ebonyi and Kogi states. The assessment included observation of client–provider interactions, health worker interviews and audit of supplies, equipment, and infrastructure in the 40 selected facilities. The baseline assessment provided formative information for the QoC interventions needed in the health facilities, as well as benchmark output and outcome measures, while the endline assessment measured the quality of care, facility readiness, and service availability in the same facilities to determine the effectiveness of the MCSP-supported interventions.

The QoC HFA had three components: 1) MNH QoC assessment, 2) FP QoC assessment, and 3) facility readiness and service availability assessment. This report only presents findings for health facility readiness and service availability.

The specific study objectives included:

1. Assess health care providers' knowledge of evidence-based MNH and FP practices in the two states.
2. Evaluate health care providers' performance of evidence-based MNH and FP interventions and respectful care through direct observation in the two states.

[2] Nigeria Demographic and Health Survey (NDHS) 2013.

[3] The child health component did not start with the maternal and newborn health (MNH) in 2015 but in 2017.

3. *Examine facility readiness to provide MNH and FP services in the two states, including emergency obstetric and newborn care.*
4. Identify gaps in the quality of maternal and newborn care services in Ebonyi and Kogi states.

This report presents findings and recommendations for objective 3. See the two other report on MNH and FP QoC results at: https://www.mcsprogram.org/resources/

Interventions Implemented at Health Facilities in Kogi and Ebonyi States

MCSP supported a wide range of interventions to strengthen MNH care and PPFP services working closely with national and state MOH counterparts, professional associations, and front-line health workers including nurses, midwives and doctors, and community health extension workers in PHCs (see Table X below).

Table X. Key approaches supported by the program in collaboration with the MOH and partners to strengthen MNH and PPFP services in PHCs and Hospitals

Facilities in Kogi and Ebonyi States	MCSP-Supported Approaches
MCSP-Supported Approaches 321 facilities (267 PHCs and 54 hospitals) (120 facilities during phase one of the program, including 45 QI facilities from below)	• Competency-based, sequential, on-site and off-site MNH and PPFP training for PHC and hospital providers focused on low doses of content using a standard curriculum led by expert clinicians, including members of local professional associations, working within the health system and supported by MCSP • Regular reinforcement of MNH and PPFP skills via on-site practice, supportive supervision, and blended in-person and mobile mentoring by clinician mentors supported by MCSP • Supportive supervision and mentoring of facility health workers by SMOHs, government representatives, and local members of professional associations during established supportive supervision visits to strengthen facility preparedness, improve organization of MNH and PPFP services (e.g., reorganizing labor and delivery rooms), and strengthen use of data for decision-making • Capacity building of HCWs to document care systematically (e.g., recording clinical data in the patient record or maternity register instead of on a random piece of paper) and to calculate and display prioritized indicators over time to identify and develop solutions to address low-performing quality indicators • • Electronic MNH QoC dashboard and laminated facility poster dashboard data used by health facility staff to support decision making

91 facilities receiving additional support to participate in a statewide multi-faceted QI intervention
 	
(45 facilities in phase 1*, 46 facilities in phase 2)
 	
*Note: The endline HFA facilities were selected from these 45)
	• Codesign of a multifaceted QI intervention with SMOH staff, local government representatives, and facility maternity representatives to define common measurable improvement aims and QoC indicators focused on high-impact MNH/PPFP interventions, local burden of disease, and local quality of care gaps
	• Common improvement aims included:
	  • Improve integrated routine intrapartum and postnatal care for women and newborns, including PPFP
	  • Improve management of newborn asphyxia
	  • Improve early detection and management of PPH, pre-eclampsia, and eclampsia
	• Regular support of facility QI teams by MOH managers and professional association mentors (supported by MCSP) during QoC workshops and on-site integrated supportive supervision visits to build HCW skills to mplement clinical best practices

Methodology

Study Design

This RMNH QoC Health Facility Assessment is cross-sectional in design. A baseline (2016) and follow-up survey (2018) were conducted in two states of Nigeria—Ebonyi and Kogi—to measure change pre/post intervention to assess the effectiveness of MCSP-supported interventions implemented in collaboration with the Ministry of Health (MOH).

The baseline and the endline assessment utilized a facility inventory checklist to determine availability of essential MNH and FP services at the selected health facilities as well as the availability of human resources, equipment, supplies, guidelines, and commodities needed for MNH and FP service provision (see annex for the Facility Audit Tool).[4]

Research Questions

The main research questions addressed in this report are:

- How ready are health care providers to provide quality maternal and newborn health services to mothers and their newborns in Ebonyi and Kogi states?
- What is the quality of family planning, antenatal care, and labor and delivery (L&D) care services?

Data Collection Tools

All the data collection tools used for the RMNH QoC assessment are shown in Table 1. The table summarizes the content as well as the respondents to which each tool was administered. All data collection tools were programmed on mobile data collection devices that are encrypted as well as password protected. The line listing form remained in hard copy, separate from the data collection tools, and was destroyed at the end of the fieldwork.

Table 1: Data collection instruments

Data collection instrument	Type	Content	Study population
Tool B: Facility Inventory	Checklist	Service availability and readiness	Health facilities
Tool C: ANC Observation Checklist	Observation Checklist	Client history and exam; adherence to protocol for screening for PE/E (danger signs, urine for protein; BP checked); PPFP counseling	ANC service providers and clients
Tool D: L&D Observation Checklist	Observation Checklist	Routine and correct use of partograph; routine and correct use of AMTSL; infection prevention behaviors; quality of essential newborn care; respectful maternity care	L&D service providers and women in labor
Tool F: MNH Service Provider Interview and Knowledge Test	Structured Interview	Health worker knowledge about maternal health, respectful maternity care, and newborn care	ANC and L&D service providers

[4] The MNH and FP QoC assessment focused on assessment of provider knowledge using structured interview guides, and direct observation of the skills of service providers during actual or simulated care, including attending normal deliveries, antenatal care services, and family planning services, especially insertion and removal of IUDs and other long-acting family planning methods such as Jadelle and Implanon. Cross-cutting components like gender (e.g., respectful maternity care and male involvement) were also assessed to some extent.

Data collection instrument	Type	Content	Study population
Tool H: Clinical Simulation Checklist for Newborn Resuscitation	Simulation Checklist	Simulated resuscitation checklist for initial stimulation and bag and mask resuscitation	L&D service providers
Tool K: FP Consultation Observation Checklist	Observation Checklist	Counseling about family planning methods	FP service providers and clients
Tool LA:FP Clinical Simulation for Early Postpartum Insertion of IUD	Simulation Checklist	Correct skills used to perform contraceptive IUD insertion	Family planning service providers
Tool LB: FP Clinical Simulation for Implants	Simulation Checklist	Correct skills used to perform contraceptive implant insertion	Family planning service providers
Tool M: FP Health Worker Interview and Knowledge Test	Structured Interview	Health worker background, training, knowledge, and experience with IUD and implant insertion	Family planning service providers

ANC: antenatal care; AMTSL: active management of the third stage of labor; BP: blood pressure; L&D: labor and delivery; LARC: long-acting reversible contraception; MNH: maternal and newborn health; PE/E: pre-eclampsia/eclampsia; PPFP: postpartum family planning.

Only results from Tool B are presented in this report.

Sampling and Study Setting

At baseline, a total of 40 health facilities in Kogi and Ebony states (20 in each state) that were targeted to receive MNH quality improvement interventions were selected from a list of 120 health facilities that were identified with the state MOHs for the first phase of implementation of MCSP support. At endline, a few facilities included at the baseline were replaced for the assessment as they either did not receive the MNH quality improvement interventions in the first phase of program implementation as originally planned (so they were replaced with facilities that did receive the interventions in the first phase) or due to security concerns and the inability of the research team to visit the facility.

Procedure

Data collection team members were trained in study procedures for one week at both baseline and endline. Data collectors were oriented to the study protocol, data collection tools, data collection, and transmission procedures, and recruitment and consent forms. Data collectors were practicing medical doctors and nurses drawn from Ebonyi and Kogi states, most of whom participated at the baseline data collection. They werea assigned to collect data from facilities other than those where they were currently employed.

On arrival at the facilities during the baseline and endline surveys, data collectors presented a letter of introduction from the state MOH to the facility manager. The purpose of the study was explained to the facility manager and written permission to conduct the assessment was obtained. One service availability and readiness checklist was completed for each facility. MNH health service providers and staff members in charge of ANC, L&D, and FP services were asked to assist in an inventory of medicines, supplies, and equipment in their service areas. Service providers' familiarity with and use of HMIS data were also assessed. If the staff member in charge of a service area was not available, then another provider was asked to assist.

Data Quality Assurance

Data quality was ensured through the use of a standardized data collection tool, hiring qualified health professionals, such as medical doctors and nurses, as data collectors, training data collectors in the content of

the tool and pre-testing the tool at health facilities. Data collection was monitored in real time during the fieldwork as data were sent from tablet computers to an online CommCare data repository with a tracking dashboard. Supervisors also checked in with data collection teams periodically throughout the fieldwork.

Data Management and Analysis

Data were collected directly on android-enabled tablet PCs using customized password-protected data entry programs developed with a CommCare software package. GPS coordinates of the data collectors were also captured and recorded. Cleaning of the data was done at different points starting from the field by the supervisors and before submissions were made to the central server. The submitted data were downloaded, reviewed, and cleaned on a daily basis. At the end of the data collection period, the data files from all teams from the two states were merged into a central database and exported as SPSS and/or Excel files for analysis.

To facilitate data analysis, a 2-day data analysis and report writing meeting was held with all MCSP technical advisors and the consultant statisticians shortly after completion of the endline data collection. The meeting aimed to identify the variables and questions to be analyzed, to discuss the types and level of analysis to be conducted, and to highlight the structure of the report.

Descriptive data analysis was conducted to answer research questions for the study objective. Quantitative analyses included the reporting of percentages, percent distributions, means, and medians for priority indicators. Cross tabulations using the chi square statistic were performed to compare baseline and endline values across different geographic areas or type of health facilities, as appropriate. T-test were done to compare mean change from baseline to endline. The unit of analysis was the facility. Information was reported on the availability of basic and comprehensive emergency obstetric and newborn care (BEmONC and CEmONC); and the availability of postpartum family planning (PPFP) and long-acting reversible contraception (LARC) services.

Ethical Approval

The study was reviewed and approved by both the National Health Research Ethics Committee in Nigeria and the Institutional Review Board of the Johns Hopkins Bloomberg School of Public Health. Permission to visit the health facility was obtained from all heads of health facilities.

Results

Table 2 shows that in the two states, about 50% of facilities visited at baseline were secondary hospitals while at endline, 50% of facilities were primary health centers. The endline also included a slightly greater percentage of facilities in semiurban or rural areas than the baseline.

Table 2: Types of facilities and their location in Ebonyi and Kogi states (percentage)

		Ebonyi State		Kogi State		Total	
		Baseline (n=20)	End-line (n=20)	Baseline (n=20)	End-line (n=20)	Baseline (N=40)	End-line (N=40)
Type of Facility	Tertiary hospital	5	5	5	5	5	5
	Public secondary hospital	50	15	50	25	50	20
	Public primary health care	25	50	25	45	25	47.5
	Faith-based/mission	15	30	10	15	12.5	22.5
	Private facility (any type)	5	0	10	10	7.5	5
Location of Facility	Urban	15	65	50	45	32.5	55
	Semiurban/rural	85	35	50	55	67.5	45

At endline, facilities were almost evenly split between health centers/clinics (n=19) and hospitals (n=21). At baseline, there was a smaller percentage of health centers/clinics (n=12) compared with hospitals (n=28).

Antenatal Care Services

Availability of ANC Services

A comparison of baseline and endline results showed small changes in availability of routine ANC services in Ebonyi and Kogi states in Nigeria because over 95% of facilities were already providing ANC services at the inception of the project. The facilities at the endline were providing on average all five ANC services (weighing clients, taking blood pressure, urine test for protein, blood test for anemia, health sessions), compared with about four services provided at baseline (p=0.000) across the two states. However, a blood test for anemia is still not available in all facilities. The proportion of facilities providing a blood test for anemia only increased to 90% at endline from 50% and 80% at baseline in Ebonyi and Kogi, respectively. In addition, availability of urine tests for protein increased from 60% to 95% in Ebonyi, and from 80% to 100% in Kogi (p=0.008) (Table 3).

The readiness of the facilities to provide ANC services also improved at endline, compared with baseline (p=0.006). Facilities in Ebonyi had an increase in the availability of blood tests for anemia during ANC by 20 percentage points (70% to 90%) while those in Kogi State had a 5-percentage point increase (85% to 90%). Facilities offering a blood test for syphilis increased by 35 percentage points (15% to 50%) in Kogi and 25 percentage points in Ebonyi (20% to 45%). For Rh factor service, the facilities in Ebonyi State recorded a 35-percentage point increase (15% to 50%) while Kogi State had a 15-percentage-point increase (65% to 80%). Across the two states there was a significant 35-percentage point difference in the capacity of the facilities to provide excellent ANC services at endline (p=0.001). Tetanus toxoid vaccination, however, is only regularly available in one-tenth of the facilities in the two states.

Table 3: Availability of antenatal care services and procedures

		Ebonyi State		Kogi State		Total		
		Baseline (n= 20)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 40)	p-value
Does this facility offer routine antenatal services?		95.0	100.0	100.0	100.0	97.5	100.0	0.314
Mean score on routinely carried out pre-ANC activities		3.95	4.85	4.6	4.9	4.38	4.9	0.908
Routinely carried out pre-ANC activities.	Weighing clients	95.0	100.0	100.0	100.0	97.5	100.0	0.314
	Taking blood pressure	100.0	100.0	100.0	100.0	100.0	100.0	-
	Urine test for protein	60.0	95.0	80.0	100.0	70.0	97.5	0.001
	Blood test for anemia	50.0	90.0	80.0	90.0	65.0	90.0	0.007
	Health sessions	90.0	100.0	100.0	100.0	95.0	100.0	0.152
Mean score on facility capacity to provide ANC services		*2.1*	*3.35*	3.3	4.0	2.7	3.68	0.006
Facility capacity to provide ANC services	Blood test for anemia	70.0	90.0	85.0	90.0	77.5	90.0	0.130
	Blood test for syphilis	20.0	45.0	15.0	50.0	17.5	47.5	0.012
	Blood group	25.0	55.0	80.0	80.0	52.5	67.5	0.279
	Rh factor	15.0	50.0	65.0	80.0	40.0	65.0	0.062
	Urine test for protein	80.0	95.0	85.0	100.0	82.5	97.5	0.025
Facility has excellent capacity to provide ANC services		10.0	45.0	15.0	50.0	12.5	47.5	0.001
Mean score on routinely offered services to ANC clients		3.1	3.85	3.7	3.95	3.4	3.9	0.002
Routinely offered services to ANC clients		50.0	100.0	75.0	100.0	62.5	100.0	<0.001
Routinely offered services to ANC clients Mean score on regular availability of tetanus toxoid vaccination.	Birth plan/complication readiness	75.0	100.0	100.0	95.0	87.5	97.5	0.090
	Counseling about FP	90.0	95.0	100.0	100.0	95.0	97.5	0.556
	Counseling about HIV/AIDS	95.0	90.0	95.0	100.0	95.0	95.0	1.000
	Testing for HIV/AIDS	0.0	.16	0.0	.08	0.0	.079	0.965
Regular availability of tetanus toxoid vaccination.		0.0	90.0	100.0	80.0	95.0	85.0	0.136

		Ebonyi State		Kogi State		Total		
		Baseline (n= 20)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 40)	p-value
Regular availability of tetanus toxoid vaccination. Tetanus toxoid vaccination readily available	Tetanus vaccine available	25.0	10.0	0.0	47.4	12.8	28.2	0.107
	Number of days	75.0	80.0	80.0	90.0	77.5	85.0	0.390
	Tetanus vaccine available today	15.0	0.0	5.3	10.3	10.3	1.0	0.020

ANC Supplies and Examination Room/Area

In the two states, there is the need to focus on the ANC examination room/area. There was about 5-percentage point decrease in the proportion of facilities observed to have an excellent ANC evaluation room/area (the condition and setting of the ANC room and toilet facilities) at endline (Table 4). The situation in Ebonyi showed an increase in the proportion of facilities with an excellent ANC examination room/area from 0% at baseline to 6% at endline. The reverse is the case in Kogi State, where none of the facilities had an excellent ANC examination room/area.

There was also a statistically significant increase in the proportion of facilities with essential ANC medication/vaccines, testing supplies, and essential equipment, such as blood pressure apparatus, fetal stethoscope, and weigh scale, available in the ANC examination room/area (Table 4). Facilities with adequate equipment and testing supplies increased from 24% to 60% in the two states (p=0.001), and the proportion of facilities with adequate ANC medication and vaccines increased from 47% to 88% (p=0.006).

Table 4: ANC supplies and examination room/area

		Ebonyi State		Kogi State		Total		
		Baseline (n= 20)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 40)	p-value
ANC examination room	Setting of ANC room	60.0	80.0	70.0	50.0	65.0	65.0	0.706
	Condition of ANC room	55.0	15.0	35.0	15.0	45.0	15.0	0.001
	Toilet for client	45.0	80.0	80.0	95.0	62.5	87.5	0.010
	Functioning toilet	77.8	75.0	80.0	94.7	79.2	85.7	0.510
ANC examination area is excellent		0.0	6.3	13.3	0.0	8.3	2.9	0.347

		Ebonyi State		Kogi State		Total		
		Baseline (n= 20)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 40)	p-value
Supplies and equipment in ANC examination room	Examination gloves	55.0	85.0	80.0	95.0	67.5	90.0	0.046
	Sharp containers	55.0	85.0	75.0	85.0	65.0	85.0	0.079
	Alcohol hand rub	30.0	35.0	35.0	70.0	32.5	52.5	0.080
	Waste receptacle	35.0	95.0	50.0	100.0	42.5	97.5	<0.001
	Soap for handwashing	70.0	90.0	85.0	95.0	77.5	92.5	0.021
	Water for handwashing	70.0	95.0	90.0	100.0	80.0	97.5	0.035
Equipment and testing supplies available	Blood pressure apparatus	95.0	100.0	100.0	100.0	97.5	100.0	0.314
	Blood pressure apparatus functioning	100.0	100.0	100.0	100.0	100.0	100.0	-
	Stethoscope	95.0	100.0	100.0	100.0	97.5	100.0	0.314
	Stethoscope functioning	100.0	100.0	100.0	100.0	100.0	100.0	-
	Fetal stethoscope	95.0	100.0	95.0	100.0	95.0	100.0	0.359
	Fetal stethoscope functioning	100.0	100.0	100.0	100.0	100.0	100.0	-
	Adult weighing scale	100.0	100.0	100.0	100.0	100.0	100.0	-
	Adult weighing scale functioning	95.0	100.0	100.0	100.0	97.5	100.0	0.314
	Urine test strip	60.0	85.0	70.0	95.0	65.0	90.0	0.014
	RPR kit	15.0	40.0	10.0	40.0	12.5	40.0	0.005
	HIV rapid test	80.0	75.0	65.0	90.0	72.5	82.5	0.533
Adequate equipment and testing supplies		26.3	50.0	21.1	70.0	23.7	60.0	0.001

		Ebonyi State		Kogi State		Total		
		Baseline (n= 20)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 40)	p-value
Medication/ Vaccine	RDT malaria test	85.0	95.0	80.0	95.0	82.5	95.0	0.077
	Microscopy malaria test	100.0	100.0	100.0	100.0	100.0	100.0	-
	Iron/folic acid	95.0	100.0	85.0	90.0	90.0	95.0	0.396
	Tetanus toxoid	75.0	100.0	80.0	100.0	77.5	100.0	<0.001
	Mebendazole/ Albendazole	45.0	95.0	55.0	65.0	50.0	80.0	0.005
	SP (Fansider)	90.0	100.0	90.0	80.0	90.0	90.0	1.000
Availability of adequate medication/vaccine		33.3	100.0	55.6	75.0	46.7	87.5	0.006

RPR: rapid plasma reagin test for syphilis; RDT: rapid diagnostic test; SP: sulfadoxine/pyrimethamine malaria treatment

Labor and Delivery Services

All the facilities in the two states provided delivery services at endline, compared with 95% at baseline in Ebonyi State (Table 5).

Provision of BEmONC and CEmONC Services

There was an increase in the proportion of facilities providing all seven signal functions of BEmONC in Ebonyi State at endline (15% to 25%), while in Kogi State there was no change in the proportion of facilities providing all BEmONC functions (5% at baseline and endline). However, there is a statistically significant difference in the facilities able to provide BEmONC services across the two states (p-value= 0.021), and a statistically significant increase in the average number of BEmONC signal functions that the facilities in the two states are able to provide at the endline (5 functions) compared with baseline (3 functions) . Parenteral oxytocic for prevention of postpartum hemorrhage was the only signal function which all facilities in the two states were able to provide at endline. In addition, at least 97.5% of the facilities were providing parenteral antibiotics for pregnancy-related infections at endline compared with 89.7% at baseline. In Kogi State, however, there was a decrease in the proportion of facilities providing assisted deliveries using forceps or vacuum (from 25% at baseline to 20% at endline).

Table 5: Availability of delivery services and intervention, including BEmONC and CEmONC (all facilities, percentage)

	Ebonyi State		Kogi State		Total		
	Baseline (n= 20)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 40)	p-value
Facility provides delivery services	95.0	100.0	100.0	100.0	97.5	100.0	0.314
Facility provides delivery services 24 hours a day (of those that have delivery services)	100.0	100.0	90.0	100.0	94.9	100.0	0.147
Facility allows women to bring a companion with them into the delivery room	36.8	90.0	30	85	33.3	87.5	<0.001
Of those that allow companions:							
• A male partner or companion	57.1	100	100	100	76.9	100	--
• A female family member or companion	100	88.9	83.3	100	92.3	94.3	---
Mean number of the 7 BEmONC signal functions provided by facilities	3.2	5.0	3.5	4.8	3.4	4.9	<0.001
1. Parenteral antibiotics for pregnancy-related infections	84.2	100	95	95	89.7	97.5	0.154
2. Parenteral oxytocic drugs to prevent postpartum hemorrhage	89.5	100	100	100	94.9	100.0	0.148
3. Parenteral anticonvulsants for pregnancy-related hypertensions	52.6	95	55	90	53.8	92.5	<0.001
4. Manual removal of placenta	73.7	95	85	95	79.5	95.0	0.038
5. Manual vacuum aspiration (MVA)	36.8	70	60	55	48.7	62.5	0.214
6. Assisted deliveries using forceps or vacuum	22.2	35	25	20	23.7	27.5	0.697
7. Newborn resuscitation	84.2	95	90	100	87.2	97.5	0.083
Facility provides cesarean section services (CEmONC)	52.6	50	70	55	61.5	52.5	0.416
Facility provide blood transfusion services (CEmONC)	63.2	65	75	80	69.2	72.5	0.745
Kangaroo Mothercare	42.1	95	25	90	33.3	92.5	<0.001
Injectable antibiotics for severe newborn infection	68.4	90	55	95	61.5	92.5	0.001

		Ebonyi State		Kogi State		Total		
		Baseline (n= 20)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 40)	p-value
In the past 3 months, facility provided (of those who provide the signal function)	Parenteral antibiotics for pregnancy-related infections	63.2	95.0	85.0	95.0	74.4	95.0	0.011
	Parenteral oxytocic drugs to prevent postpartum hemorrhage	73.7	100.0	100.0	100.0	87.2	100.0	0.019
	Parenteral anticonvulsants for pregnancy-related hypertension	31.6	80.0	20.0	80.0	25.6	80.0	<0.001
	Manual removal of placenta	47.4	60.0	45.0	70.0	46.2	65.0	0.092
	Manual vacuum aspiration (MVA)	31.6	65.0	25.0	45.0	28.2	55.0	0.016
	Assisted deliveries using forceps or vacuum	15.8	30.0	10.0	5.0	12.8	17.5	0.562
	Newborn resuscitation	57.9	70.0	65.0	85.0	61.5	77.0	0.123
	Blood transfusion for maternity care	26.3	55.0	45.0	70.0	35.9	62.0	0.018
	Cesarean section	26.3	45.0	65.0	55.0	46.2	50.0	0.732

With respect to comprehensive emergency obstetric and newborn care (CEmONC), a greater percentage of hospitals at endline also had an anesthetist present or on call 24 hours a day (Table 6). Availability of cesarean section services remained high over time but should be 100%. Availability of blood transfusion services was universal at endline, with a slight improvement noted in Ebonyi over baseline.

Table 6: Availability of CEmONC services and supplies at hospitals that offer delivery services (percentage)

	Ebonyi State		Kogi State		Total		
	Baseline (n= 13)	End-line (n=10)	Baseline (n= 14)	End-line (n=11)	Baseline (n= 27)	End-line (n= 21)	P-Value
Facility provides delivery services 24 hours a day	100	100	100	100	100	100	-
Has a trained health worker who can perform cesarean section in the facility or on call 24 hours a day (including weekends)	84.6	100	85.7	90.9	85.2	95.2	0.261
CEmONC services/signal functions							
Facility provides cesarean section services (CEmONC)	76.9	90	50	72.7	44.4	66.7	0.124
Provided cesarean section services in the last 3 months (of those who provide it)	50	88.9	100	90.9	88.9	90.5	0.857
Facility provides blood transfusion services (CEmONC)	92.3	100	92.9	100	75.0	94.7	0.067
Provided blood transfusion in the last 3 months (of those that perform it)	41.7	80	100	100	96.3	100	0.373
Equipment in the Surgical Area							
Operating table (functional)	46.1	80	100	81.8	74.0	81.0	0.567
Operating light (functional)	15.4	70	57.1	72.7	37.0	71.4	0.018
Anesthesia giving set (functional)	15.4	40	35.7	54.5	25.9	47.6	0.119
Scrub area adjacent to or in the operating room (functional)	46.2	80	85.7	81.8	66.7	81.0	0.266
Tray, drum, or package with sterilized instruments ready for use (functional)	30.8	70	78.6	81.8	55.6	76.2	0.139
Halothane	7.7	50	7.7	20	7.7	35.0	0.018
Ketamine	46.2	80	71.4	72.7	59.3	76.2	0.217

Essential equipment and supplies in the Delivery Room

Table 7 presents the availability of essential equipment, supplies and infrastructure needed for high-quality care in the delivery room. Overall, the facilities in the two states now had more infection control items at

endline than at the baseline: the proportion of facilities with necessary handwashing items increased significantly from 67% to 95%, availability of decontaminating solutions increased from 31% to 83%, waste receptacle with lid from 36% to 85%, and availability of sharps containers from 74% to 98%. Notably, more than half of the facilities do not have piped water or a bucket with a tap, though facilities with either of these doubled between baseline and endline from 21% to 45%. Dry heat sterilization is the most used disinfecting method in the delivery rooms in Ebonyi and Kogi States; and facilities using this method increased significantly from 39% to 78% between baseline and endline (p=0.004).

Unlike the baseline status, virtually all the facilities in the two states had all the essential supplies, such as sterile scissors, cord clamps and towels to wrap the baby and a suction device for mucous extraction in the delivery room (p=0.000).

More facilities in the two states had the recommended labor and delivery guidelines at endline compared with baseline. These include guidelines for care/managing normal labor and birth (21% to 73%), emergency obstetric and newborn care (13% to 88%), and management of preterm birth (8% to 90%). Facilities with partograph also increased from 26% to 98% in the two states (p=0.000).

Table 7: Availability of essential maternal and newborn health infrastructure, supplies, and equipment in delivery room (percentage)

		Ebonyi State		Kogi State		Total		
		Baseline (n= 19)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 40)	p-value
Delivery room has visual and audio privacy		73.7	75.0	55.0	60.0	64.1	67.5	0.750
Newborn resuscitation trolley / newborn corner visible and easily accessible in the labor room		63.2	100.0	50	95	56.4	97.5	<0.001
Functioning toilet for clients near delivery room		26.3	55	65	45	46.1	50.0	0.727
Mean number of infection control items available		4.47	8.2	5.8	8.35	5.15	8.28	<0.001
Infection control items available in delivery room	Functional handwashing	57.9	100.0	75.0	90.0	66.7	95.0	0.001
	Sterile gloves	47.4	95.0	65.0	95.0	56.4	95.0	<0.001
	Sharps container	68.4	100.0	80.0	95.0	74.4	97.5	0.003
	Already mixed decontaminating solution	15.8	70.0	45.0	95.0	30.8	82.5	<0.001
	Alcohol hand rub	26.3	40.0	20.0	55.0	23.1	47.5	0.023
	Waste receptacle with lid and plastic liner	31.6	95.0	40.0	75.0	35.9	85.0	<0.001
	Soap for handwashing	73.7	100.0	80.0	100.0	76.9	100.0	0.001
	Water for handwashing	78.9	100.0	90.0	100.0	84.6	100.0	0.010

		Ebonyi State		Kogi State		Total		
		Baseline (n= 19)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 40)	p-value
	Piped water or bucket with tap	10.5	35.0	30.0	55.0	20.5	45.0	0.021
	Clean room	36.8	85.0	55.0	75.0	46.2	80.0	0.002
Common disinfecting method used	Dry heat sterilization	31.6	80.0	45.0	75.0	38.5	77.5	0.004
	Autoclaving	21.1	10.0	5.0	0	12.8	5.0	0.004
	Others	42.1	10.0	40.0	25.0	41.0	17.5	0.004

		Ebonyi State		Kogi State		Total		
		Baseline (n= 19)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 40)	p-value
Availability of essential supplies and equipment for delivery (observed and functional)	Sterile scissors/blade	78.9	100.0	75.0	100.0	76.9	100.0	0.001
	Sterile disposable cord ties/clamps	68.4	95.0	65.0	100.0	66.7	97.5	<0.001
	Towel/blanket to wrap baby	100.0	100.0	100.0	100.0	100.0	100.0	-
	Suction apparatus for use with catheter (functioning)	36.8	65	100.0	35	30.8	50.0	0.068
	Newborn resuscitation bag and mask (functional)	26.3	100	30	95	28.2	97.5	<0.001
	Newborn resuscitation mask size 0 (functional)	10.5	100	20	84.2	15.4	92.3	<0.001
	Newborn resuscitation mask size 1 (functional)	19	100	20	100	39.0	100.0	<0.001
	Suction device for mucous extraction (functioning)	52.6	100	65	100	59.0	100.0	<0.001
	Resuscitation table for baby	36.8	95	40	90	38.5	92.5	<0.001
	Uninterrupted oxygen supply	10.5	35	26.3	15	18.4	25.0	0.474
	Incubator (functioning)	5.3	30	10	20	7.7	25.0	0.036
	Other source of heat for premature baby (functioning)	5.3	45	15	30	10.3	37.5	0.004
	Obstetric forceps	31.6	57.9	36.8	40	34.2	48.7	0.188
	Vacuum extractor (manual or electrical– functional)	10.5	55	10.5	15	13.2	35.0	0.023
	Manual vacuum aspirator (functional)	10.5	55	21	35	15.8	45.0	0.005

		Ebonyi State		Kogi State		Total		
		Baseline (n= 19)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 40)	p-value
	Dilatation and curettage kit	10.5	26.3	42	40	26.3	33.3	0.494
	PPIUCD insertion kit	11.1	60	10.5	55	10.8	57.5	<0.001
Availability of guidelines and forms to support quality delivery available in delivery room	Guidelines for care/managing normal labor and birth	15.8	80.0	25.0	65.0	20.5	72.5	<0.001
	Guidelines for emergency obstetric and newborn care	5.3	80.0	20.0	95.0	12.8	87.5	<0.001
	Guidelines for management of preterm birth	0.0	90.0	15.0	90.0	7.7	90.0	<0.001
	Guidelines for essential newborn care	5.3	95.0	15.0	90.0	10.3	92.5	<0.001
	Guidelines for PMTCT	47.4	80.0	60.0	75.0	53.8	77.5	0.027
	Blank partographs	21.1	95.0	30.0	100.0	25.6	97.5	<0.001

*One facility reported that they do not offer delivery services. PMTCT: Prevention of mother-to-child transmission of HIV

Essential medications in the Delivery Room

Table 8 shows that only one-fifth of the facilities have all essential MNH medications in the delivery room in the two states, though this proportion almost doubled between baseline and endline (12% vs 20%). All the facilities evaluated in Ebonyi have the following essential medications at the endline: intravenous solutions (either Ringers lactate, D5NS, or NS infusion); injectable oxytocin/syntonic; misoprostol; amoxicillin, procaine penicillin or injectable ampicillin; and injectable gentamicin. Whereas, injectable oxytocin/syntonic is the only medication available in all the facilities in Kogi State at endline. There are some essential medications even though they are not available in all the facilities at the endline but are now available in more facilities at the endline relative to the baseline (p=0.000). These include injectable magnesium sulfate, injectable calcium gluconate, lignocaine 2%, and tetracycline ointment.

Table 8: Availability of essential MNH medications in the delivery room

		Ebonyi State		Kogi State		Total		
		Baseline (n= 20)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 20)	p-value
Availability of essential medications in delivery room		10.5	20.0	15.0	20.0	12.8	20.0	0.390
Mean score of essential medications available in delivery room		8.3	12.6	8.6	11.4	8.46	12.03	<0.001
Necessary medications in delivery room	Intravenous solutions: either Ringers lactate, D5NS, or NS infusion	73.7	100.0	80.0	90.0	76.9	95.0	0.020
	Injectable ergometrine/ methergine	68.4	60.0	75.0	60.0	71.8	60.0	0.269
	Injectable oxytocin/syntonic	89.5	100.0	95.0	100.0	92.3	100.0	0.074
	Misoprostol	63.2	100.0	65.0	90.0	64.1	95.0	0.001
	Injectable diazepam	63.2	95.0	65.0	70.0	64.1	82.5	0.064
	Injectable magnesium sulfate	31.6	95.0	45.0	90.0	38.5	92.5	<0.001
	Injectable Ca Gluconate	15.8	65.0	20.0	50.0	17.9	57.5	0.002
	Amoxicillin, procaine penicillin or injectable ampicillin	47.4	100.0	60.0	70.0	53.8	85.0	0.003
	Injectable gentamicin	68.4	100.0	65.0	70.0	66.7	85.0	0.057
	Lignocaine 2%	52.6	95.0	70.0	95.0	61.5	95.0	<0.001
	Tetracycline ointment	15.8	70.0	20.0	55.0	17.9	62.5	<0.001
	Dexamethasone	36.8	70.0	55.0	65.0	46.2	67.5	0.055
	Zidovudine	63.2	70.0	40.0	80.0	51.3	75.0	0.029
	Lamivudine	63.2	70.0	40.0	75.0	51.3	72.5	0.052
	Nevirapine	78.9	70.0	65.0	85.0	71.8	77.5	0.560

D5NS: 5% dextrose in normal saline; NS: normal saline.

Family Planning Services

Availability of FP Services

Table 9 shows that there is a statistically significant increase in the proportion of facilities offering routine postpartum FP services at endline (90% compared with 33% at baseline) (p=0.000). This pattern holds for both states.

There is a higher level of availability of key family planning supplies and equipment among facilities at endline (87%) than at baseline (64%). In addition, the proportion of facilities offering inclusive family planning services—FP services for men, invitations for partners to attend FP services, and display of IEC materials for men and women—generally increased between baseline and endline in the two states. Facilities providing Implanon implants increased from 67% to 88%, IUD from 59% to 80%, female sterilization from 18% to 28%, and male sterilization from 5% to 10%. The percentage of facilities that experienced stock-outs of FP commodities in the 3 months preceding the baseline and endline surveys in the two states was similar, at around 22% for both periods. There was a slight increase in the proportion of facilities in the two states that have an excellent FP examination room setting between baseline and endline (72% vs. 80%).

Table 9: Availability of family planning services in facilities

		Ebonyi State		Kogi State		Total		
		Baseline (n= 20)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 20)	p-value
Facility offers routine postpartum family planning services		40.0	90.0	25.0	90.0	32.5	90.0	<0.001
Stock of family supplies, equipment, and materials maintained on a regular basis		63.2	85.0	65.0	89.5	64.1	87.2	0.018
Consumption of contraceptive stock recorded and up to date		57.9	85.0	50.0	89.5	53.8	87.2	0.001
Facility offers family planning services		90.0	95.0	94.7	90.0	92.3	92.5	0.974
Inclusive family planning services	FP available to men	72.2	94.7	94.4	100.0	83.3	97.3	0.043
	Invitation of partners	100.0	100.0	88.9	83.3	94.4	91.9	0.370
	FP IEC displayed	61.1	100.0	72.2	100.0	66.7	100.0	0.011
	FP IEC for men	33.3	68.4	38.9	88.9	36.1	78.4	0.001
Excellent FP services		27.8	68.4	33.3	72.2	30.6	70.3	0.001
Mean score on method being offered in the facility		6.7	13.65	12.5	9.6	9.45	11.63	0.553
Methods being offered in the facility	Male condoms	80.0	85.0	89.5	90.0	84.6	87.5	0.711
	Female condoms	55.0	65.0	52.6	70.0	53.8	67.5	0.321
	Oral contraceptives–progestin	75.0	85.0	63.2	90.0	69.2	87.5	0.118

		Ebonyi State		Kogi State		Total		
		Baseline (n= 20)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 20)	p-value
	Oral contraceptives–combined	65.0	85.0	78.9	90.0	71.8	87.5	0.082
	Intrauterine device	55.0	75.0	63.2	85.0	59.0	80.0	0.106
	Implant–Implanon	70.0	85.0	63.2	90.0	66.7	87.5	0.074
	Implant–Jadelle	70.0	85.0	61.1	85.0	65.8	85.0	0.048
	Injectable	80.0	85.0	88.9	90	84.2	87.5	0.677
	Female sterilization	10.0	20.0	27.8	35.0	18.4	27.5	0.341
	Male sterilization	5.0	5.0	5.6	15.0	5.3	10.0	0.443
	Emergency contraception	5.0	40.0	27.8	60.0	15.8	50.0	0.001
	Cycle bead	40.0	60.0	16.7	65.0	28.9	62.5	0.005
	Lactational amenorrhea	60.0	100.0	55.6	95.0	57.9	97.5	0.001
Availability of FP methods		85.0	90.0	83.3	90.0	84.2	90.0	0.445
Stock-out in past 3 months of FP commodities		26.3	25.0	15.8	20.0	21.1	22.5	0.877
Mean score of FP examination and procedure room setting		3.28	2.3	2.44	2.6	2.86	2.45	0.143
FP examination & procedure room setting	Setting of FP exam room	66.7	85.0	83.3	75.0	75.0	80.0	0.615
	Condition of FP exam room	83.3	100.0	94.4	100.0	88.9	100.0	0.096
Excellent FP examination and procedure room setting		61.1	85.0	83.3	75.0	72.2	80.0	0.426

FP commodities, equipment and supplies

Table 10 shows that the proportion of facilities with the necessary FP supplies and equipment in the FP examination room increased between baseline and endline in the two states Most notable are the long placental forceps (38% vs. 80%), straight mosquito forceps (45% vs. 85%), and curved mosquito forceps (43% vs. 85%). Family planning commodities available in the examination rooms also increased between baseline and endline in the two states. Both states had the highest increase in the percentage of facilities with emergency contraceptives available (Ebonyi: 5% at baseline to 45% at endline; Kogi: 30% at baseline to 60% at endline).

Table 10: Family planning commodities, equipment and supplies – examination room

		Ebonyi State		Kogi State		Total		
		Baseline (n= 20)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 40)	p-value
Mean Score on supplies and equipment in FP examination room		10.6	16.7	11.5	16.2	11.0	16.4	<0.001
Availability of adequate supplies and equipment in FP examination room		10.0	65.0	15.0	60.0	12.5	62.5	<0.001
Essential supplies and equipment in FP examination room	Stethoscope	60.0	95.0	85.0	85.0	72.5	90.0	0.045
	Sphygmomanometer	60.0	90.0	85.0	85.0	72.5	87.5	0.094
	Bivalve speculum	60.0	90.0	65.0	85.0	62.5	87.5	0.010
	Uterine sound	60.0	85.0	45.0	80.0	52.5	82.5	0.004
	Long placental forceps	40.0	85.0	35.0	75.0	37.5	80.0	<0.001
	Ring forceps	30.0	90.0	60.0	90.0	45.0	90.0	<0.001
	Tenaculum	50.0	85.0	50.0	80.0	50.0	82.5	0.002
	Scissors	80.0	90.0	65.0	90.0	72.5	90.0	0.045
	Gally pot	75.0	90.0	65.0	90.0	70.0	90.0	0.025
	Mosquito forceps straight	40.0	85.0	50.0	85.0	45.0	85.0	<0.001
	Mosquito forceps curved	35.0	85.0	50.0	85.0	42.5	85.0	<0.001
	Scalpel	50.0	75.0	60.0	80.0	55.0	77.5	0.033
	Local anesthesia	55.0	75.0	60.0	85.0	57.5	80.0	0.030
	5/10cc syringe & 1.5 needle	70.0	90.0	75.0	90.0	72.5	90.0	0.045
	Sharps container	75.0	90.0	65.0	85.0	70.0	87.5	0.056
	Surgical tape	55.0	90.0	55.0	90.0	55.0	90.0	<0.001
	Waste receptacle	50.0	95.0	45.0	85.0	47.5	90.0	<0.001
	Soap for handwash	70.0	90.0	80.0	90.0	75.0	90.0	0.077
	Water for handwash	40.0	90.0	55.0	85.0	47.5	87.5	<0.001
Mean score on availability of commodities		5.50	7.60	5.90	8.20	5.70	7.90	0.061
Adequate availability of FP commodities in FP service area		5.0	35.0	20.0	35.0	12.5	35.0	0.018
Availability of commodities	Male condom	70.0	85.0	75.0	85.0	72.5	85.0	0.172
	Female condom	50.0	70.0	55.0	80.0	52.5	75.0	0.036
	Oral pills–progestin	65.0	80.0	65.0	90.0	65.0	85.0	0.057
	Oral pills–combined	65.0	80.0	75.0	90.0	70.0	85.0	0.108
	IUDs	55.0	75.0	65.0	85.0	60.0	80.0	0.051

		Ebonyi State		Kogi State		Total		
		Baseline (n= 20)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 40)	p-value
	Implant–Implanon	65.0	85.0	55.0	85.0	60.0	85.0	0.012
	Implant–Jadelle	65.0	85.0	60.0	85.0	62.5	85.0	0.022
	Injectables	75.0	85.0	80.0	85.0	77.5	85.0	0.390
	Cycle bead	35.0	70.0	30.0	75.0	32.5	72.5	<0.001
	Emergency contraceptive	5.0	45.0	30.0	60.0	17.5	52.5	0.001

Health Management Information System (HMIS) and data use

Data collection, reporting and use practices

Table 11 presents the data collection, reporting, and data use practices in the surveyed health facilities. The key components of adequate HMIS use that were assessed included regular compilation of reports, disaggregation by sex, analysis of report for completeness, validation against the register, and production of data quality reports. The proportion of facilities that adequately use HMIS tools to prepare reports increased from 20% at baseline to 90% at endline in Ebonyi and from 15% to 55% in Kogi. The proportion of facilities that report conducting monthly validation of reports against the registers increased from 65% to 100% in Ebonyi and from 45% to 80% in Kogi, while facilities where data quality reports are available increased from 20% to 90% in Ebonyi and 20% to 60% in Kogi. In addition, the proportion of facilities with up-to-date charts/tables or laminated poster data dashboards on the wall suggesting ongoing use of facility data, increased from 25% to 55% in Ebonyi and from 0% to 50% in Kogi.

The provision of feedback by the LGA (district) team to health facilities on the monthly facility summary reports submitted also increased between baseline and endline: 85% of facilities in Ebonyi receiving feedback at endline compared with 21% at baseline, and 72% at endline compared to 32% at baseline in Kogi.

Table 11: HMIS data capture, analysis, visualization, reporting, and use as observed and reported by health workers and managers

		Ebonyi State		Kogi State		Total		
		Baseline (n= 20)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 40)	p-value
Facility regularly collects health service data		85.0	100.0	95.0	90.0	90.0	95.0	0.396
Mean score on the use of HMIS to prepare reports		3.85	5.90	3.55	4.70	3.70	5.30	0.007
Adequate use of HMIS to prepare reports		20.0	90.0	15.0	55.0	17.5	72.5	<0.001
Use of HMIS tools to	Regular compilation of report	95.0	100.0	95.0	90.0	95.0	95.0	1.000
	Report by sex	85.0	100.0	90.0	85.0	87.5	92.5	0.456
	Report analysis	65.0	100.0	55.0	80.0	60.0	90.0	0.002

		Ebonyi State		Kogi State		Total		
		Baseline (n= 20)	End-line (n=20)	Baseline (n= 20)	End-line (n=20)	Baseline (n= 40)	End-line (n= 40)	p-value
prepare reports	Report analysis for completeness	55.0	100.0	50.0	75.0	52.5	87.5	0.001
	Report checked against data in register	65.0	100.0	45.0	80.0	55.0	90.0	<0.001
	Report on data quality produced	20.0	90.0	20.0	60.0	20.0	75.0	<0.001
Mean score on IEC materials at facility		1.15	3.85	0.05	2.90	0.60	3.38	0.002
Adequate display of information products at facility		10.0	40.0	0.0	40.0	5.0	40.0	<0.001
Facility displays any of the following in table, graph, chart, or map form	Data on maternal health	35.0	95.0	0.0	65.0	17.5	80.0	<0.001
	Data on newborn health	10.0	90.0	0.0	65.0	5.0	77.5	<0.001
	Data on child health	20.0	70.0	5.0	60.0	12.5	65.0	<0.001
	Data on family planning	25.0	75.0	0.0	50.0	12.5	65.0	<0.001
	Data on facility service utilization	25.0	55.0	0.0	50.0	12.5	52.5	<0.001
Mean score on feedback on reports		0.80	4.40	0.90	3.15	0.85	3.78	<0.001
Availability of adequate feedback mechanisms		0.0	50.0	5.0	35.0	2.5	42.5	<0.001
Feedback on reports	District report feedback	21.1	85.0	31.6	72.2	26.3	78.9	<0.001
	Review strategy by examining service performance target and actual performance month to month	75.0	93.8	33.3	69.2	50.0	82.8	0.060
	Review facility personnel responsibilities	50.0	93.8	33.3	61.5	40.0	79.3	0.014
	Mobilization/shifting resources	50.0	81.2	50.0	76.9	50.0	79.3	0.031
	Advocacy for resources	50.0	87.5	33.3	76.9	40.0	82.8	0.009
Facility has a functional maternal and perinatal death surveillance response mechanism		15.8	70.0	15.8	72.2	15.8	71.1	<0.001

Knowledge of RMNH Quality of Care Indicator Calculation and Use of the Data

Table 12 shows that compared with Kogi State, Ebonyi State had a higher percentage of facilities at endline where providers had knowledge of the calculation of the quality of care indicators that MCSP supported providers to monitor. These indicators include uterotonic after birth to prevent postpartum hemorrhage (90% in Ebonyi vs. 70% in Kogi), severe preeclampsia management (100% vs. 70%), predischarge after birth FP method acceptance (80% vs. 50%), newborn resuscitation (70% vs. 35%), essential newborn care (75% vs. 25%), and chlorhexidine applied to umbilical cord (90% vs. 55%). In addition, more facilities in Ebonyi State reported using data to inform decisions such as mobilization of resources, procurement of commodities, staff training, community outreaches and organization of services.

Table 12: Provider knowledge of RMNH indicator calculation and facility data use

		Endline Only		
		Ebonyi State (n=20)	Kogi State (n=20)	Total (n=40)
Mean score on knowledge of indicator calculation		8.7	6.6	7.6
Adequate knowledge on indicator calculation		35.0	0.0	17.5
Knowledge of indicator calculation	Blood pressure was measured	80.0	85.0	82.5
	Uterotonic after birth	90.0	70.0	80.0
	Severe preeclampsia	100.0	70.0	85.0
	FP method pre-discharge	80.0	50.0	65.0
	Newborn resuscitation	70.0	35.0	52.5
	Essential newborn care	75.0	25.0	50.0
	Chlorhexidine applied to umbilical cord	90.0	55.0	72.5
	Cases of diarrhea	100.0	90.0	95.0
	Under 5 with pneumonia	85.0	80.0	82.5
	Uncomplicated malaria	100.0	95.0	97.5
Mean score on data use and decision–making		5.65	4.30	4.98
Adequate data use and decision-making		35.0	15.0	25.0
Data use and decision-making	Resulted from review	85.0	65.0	75.0
	Review/change of responsibility	70.0	45.0	57.5
	Mobilization of resources	65.0	35.0	50.0
	Changes in procurement	70.0	60.0	65.0
	Staff training	80.0	60.0	70.0
	Community outreach	60.0	55.0	57.5
	Acknowledgment of staff	65.0	65.0	65.0
	Organization of services	70.0	45.0	57.5

Examples of actions facility staff reported taking following review of data for quality of care indicators at the facilities are provided below by key themes.

Interventions and Commodities and Materials

- IV artesunate was supplied for treatment of severe malaria. Linkages/advocacy to other low-level health care facilities in the area for the purpose of referral in the treatment of severe malaria.
- Supported introduction of oxytocin, which has decreased postpartum hemorrhage.
- Materials were provided for newborn care.
- Use of partographs increased. They are now being used for all deliveries.
- Drugs purchased for indigent patients in the pediatric ward.
- Commodities and supplies that are not available from the government are purchased for health care service delivery to avoid stock-outs.
- After noting poor use of partograph, great improvement following step-down training.
- Register was changed to the updated version from 2013.

Training and Motivation of Personnel

- Showed that the ability to carry out newborn resuscitation has been centered on particular personnel.
- Personnel who were not skillful in newborn resuscitation were sent for BEmONC training.
- They asked for more staff, and they were provided.
- The supervisor publicly praised outstanding staff in the facility.
- The supervisor provided incentives for staff who managed postpartum hemorrhage effectively.
- Transfer of new nurses and employment of more nurses in the maternity unit.

Organization of Services and Client Feedback

- Better organization of client flow in the facility may have helped increase client utilization of the facility.
- More benches were made available for clients, and posting of a new nurse-midwife to the facility helped with the increase in client flow.
- Formation of a committee that reviews maternal and child health on a monthly basis.

Service Utilization and Demand Generation

- They discovered low rates of delivery at the health facility, and they worked with the WDC (Women's Development Committee) to improve this.
- Increased the number of community outreach visits per month.
- More frequent community mobilization visits to churches, mosques, and markets.
- Analysis of MNH indicators showed stock-outs of MgSO4; facility managers decide to stock it.

Human Resources: Health worker readiness

Table 13 shows the changes in the proportion of health workers who received training to prepare them for MNH and FP service provision in the health facilities. The proportion of health workers who received pre-service or in-service trainings increased significantly between baseline and endline ($p<0.001$). For both states overall, the proportion of health workers trained in ANC services increased from 47% to 74%, those trained in labor and delivery increased from 30% to 83%, those trained in newborn care increased from 25% to 86%, and those trained in postpartum family planning increased from 20% to 61%. The proportion and changes are similar across the two states. Some of the key ANC and newborn training areas assessed included ANC screening, management of pre-eclampsia/eclampsia, essential newborn care, and newborn resuscitation with bag and mask.

Table 13: Changes in proportion of health workers trained between baseline and endline

		Ebonyi State		Kogi State		Total		
		Baseline (n= 67)	End-line (n=100)	Baseline (n= 91)	End-line (n=100)	Baseline (n= 158)	End-line (n= 200)	p-value
Health worker received any pre-service or in-service training on subjects related to ANC[a]		50.0	77.2	43.9	70.0	47.2	73.6	<0.001
Type of training received in past 3 years	ANC screening	39.4	62.0	33.3	67.9	36.6	65.0	<0.001
	Counseling for ANC	53.0	74.7	40.4	80.2	47.2	77.5	<0.001
	Management of pre-eclampsia/eclampsia	39.4	88.6	24.6	88.8	32.5	88.7	<0.001
	Other topics related to ANC	36.4	51.9	43.9	51.4	39.8	51.7	0.025
Health workers received any pre-service or in-service training on subjects related to labor and delivery care[b]		36.6	81.8	23.9	83.3	30.4	82.6	<0.001
Have received any pre-service or in-service training on subjects related to newborn care[c]		31.3	83.5	19.0	87.8	25.2	85.6	<0.001
Type of training received on newborn care in past 3 years[d]	Essential newborn care	70.0	92.6	66.7	98.8	68.8	95.8	<0.001
	Newborn resuscitation with bag and mask	80.0	96.3	58.3	98.8	71.9	97.6	<0.001
Received any pre-service or in-service training on postpartum family planning subjects in the past 3 years[e]		18.8	67.5	20.6	63.3	19.7	60.5	<0.001

[a]Applies to those providing ANC services.

[b]Applies to those who agreed to participate in the clinical simulation.

[c]Applies to health workers personally providing newborn care.

[d]Applies to those who have received training.

[e]Applies to health workers personally providing family planning services.

Discussions and Conclusion

The assessment revealed substantial improvements in service availability and readiness of the 40 health facilities to offer quality MNH and PPFP services in the 2-year period between baseline and endline, following MCSP support, in collaboration with MOH partners, to apply quality improvement interventions. Notably, there were more improvements in Ebonyi State compared with Kogi State in the majority of areas assessed.

Summary of Findings

- **Improved readiness for ANC and L&D service provision:** Though a majority of the selected facilities offered ANC and delivery services at baseline, half of them had limited capacity and supplies to provide some core ANC screening services, such as blood tests for anemia and urine tests for protein. By endline, over 90% of the facilities routinely screened for anemia and proteinuria. In addition, the proportion of facilities able to offer all signal functions of BEmONC increased. While the capacity to offer each signal function increased between the two time points, only about one-quarter of the facilities could provide assisted delivery with forceps or vacuum at endline. This is likely due to most primary health care facilities providing BEmONC services by community health extension workers (CHEWs), who may need further targeted training on the use of forceps or vacuum extractors during difficult deliveries, followed by onsite supervision. All facilities in the two states now provide parenteral oxytocic drugs to prevent postpartum hemorrhage. Essential ANC and delivery equipment and supplies also improved in the two states over the two years of MCSP support. A majority of the facilities now have the essential infection control items, ANC medications, and essential supplies needed in the delivery room, as well as the recommended labor and delivery guidelines, compared with only about one-third at baseline. Especially notable is the substantial increase in availability of partographs from 26% to 98% in the two states, largely attributed to the MCSP-supported development and distribution of maternity health booklets to health facilities. The availability of newborn resuscitation services and related equipment and parenteral anticonvulsants for pregnancy-related hypertension showed marked improvements. Availability of assisted delivery services remained unacceptably low, with only a little more than a quarter of health facilities ready to offer these services at endline. With respect to CEmONC service availability, a greater percentage of hospitals at endline also had an anesthetist present or on call 24 hours a day. Availability of Kangaroo Mothercare and injectable antibiotics for newborn infection showed notable increases. Availability of a functioning toilet for labor and delivery clients was low at only 50% of facilities at endline.
- **Improved readiness for FP, including PPFP, service availability and readiness:** The proportion of MCSP-supported facilities able to provide PPFP services tripled between baseline and endline in the two states. Provision of PPFP was relatively new to both states at baseline. It is not so surprising to observe the significant improvement in the provision of PPFP at endline as this was an important area that MCSP supported. There was corresponding increase in availability of FP equipment and supplies, particularly the placental and mosquito forceps. In addition, a majority of the facilities now offer inclusive family planning services—FP services for men, invitation of partners for FP services, and display of IEC materials for men and women—compared with the baseline period. Availability of PPIUCD insertion kits in the labor and delivery area also improved greatly. About a fifth of facilities experienced a stock-out of FP methods in the 3 months before the baseline survey, and this remained the same at endline.
- **Improved data use and HMIS practices and knowledge**: The assessment also revealed substantial improvement in compilation of HMIS reports, as well as validation and data quality checks at facility level before submission of reports to districts. There was also tremendous improvement in district teams providing feedback to health facilities on the submitted reports. This two-way data interaction and dialogue, in addition to other data-strengthening activities facilitated by MCSP, have further contributed to increased appreciation and understanding of the significance of data by the facility teams. It was

therefore not surprising to note that data use—demonstrated by the number of facilities with updated MNH/FP data on the data use posters—tripled between baseline and endline. The percentage of facilities reporting they had a functional maternal and perinatal death surveillance response mechanism also increased dramatically over the baseline level.

- **Health worker readiness**: Health workers who had received training in the key MNH and FP interventions doubled between baseline and endline in the two states. MCSP implemented several capacity-building approaches, including training of health workers followed by intensive coaching and supportive supervision.

Limitations

A limitation worth noting is that our study design did not include a comparison group, so we cannot control for confounding factors. However, we are not aware of other quality activities in the two states that could have contributed to the improvements observed in the study facilities. In addition, some of the baseline health facilities assessed had to be replace at the endline as either they did not receive the QI interventions in the first round or it was not possible to visit them due to insecurity in the area.

Conclusion

In conclusion, USAID's investments through MCSP in equipping, training, and introducing ongoing quality improvement and data use processes to the 40 facilities assessed in Ebonyi and Kogi states, in partnership with the state MOHs, have resulted in increased service availability and readiness of these facilities to deliver quality high-impact ANC, L&D, and FP interventions. We further anticipate that similar changes were achieved at other MCSP-supported facilities that received the same quality improvement interventions (n=51). However, additional efforts are still needed to achieve optimal readiness for and availability of emergency obstetrics and newborn services in the two states, and the quality improvement processes should be continued under state MOH leadership.

Recommendations

Provision of ANC Services

- The provision of ANC services improved significantly from baseline to endline. However, there is a need to focus on improving some aspects of ANC examination areas such as the provision of functional toilet facilities for clients and adequate equipment and testing supplies such as blood tests for anemia, syphilis, Rhesus factor, blood group, rapid HIV tests, and urine test strips.
- Tetanus toxoid (TT) vaccine is only regularly available in one-fifth of the facilities in both states. Hence, access to TT vaccines still needs to be improved for pregnant women using ANC services in both states.

Delivery Room Infrastructure and Services

- Although delivery room infrastructure in both states was relatively good, additional audio-visual privacy is required to ensure dignity of all pregnant women using these facilities and also encourage companionship during delivery.
- Although access to running water doubled at endline (20% to 45%), access to piped water or veronica buckets and tap are still recommended for most of the health facilities. Access to functional toilets for clients is still lacking.

- BEmONC signal functions increased from an average of 3 functions at baseline to 5 functions out of 7 required at endline assessment. It is recommended that the states work toward ensuring that on average, facilities providing BEmONC and CEmONC services are providing all the required signal functions. Availability of assisted delivery in particular still needs to be increased.

Family Planning Services

- The provision of routine postpartum services improved significantly (from 32% to 90%). However, there is still room for improvement in the provision of female and male sterilization services, display of IEC materials targeting men, and access to emergency contraceptives, cycle beads, and the IUD.
- Stock-outs of FP methods still need to be addressed to ensure client's needs are met.

HMIS Knowledge and Data Use

- Despite the improvements observed in data visualization, sharing, and use and production of reports from the HMIS, data quality in Kogi State still needs to be improved. Both states will need to sustain improvements in reporting of child health and family planning data, indicator calculation, and, above all, the use of data in decision-making for mobilization of resources, procurement of commodities, staff training, and community outreach services.

Annex: Facility Audit Tool

Health facility visited (name):				
Health facility code:				(3 Digit Code)

TYPE OF HEALTH FACILITY	
Tertiary hospital (teaching/national referral hospital [1] General hospital (district/provincial hospital) [2] Primary health care facility (health unit health center) [3]	Private facility (any facility run by private, non-governmental …. [4] Faith based/Mission [5] _____ _____
Locality:	Urban [1] Semi-urban [2] Rural [3]
State	
LGA Name:	
Name of observer:*	
Date of Visit: (dd/mm/yy)	__ __ / __ __ / __ __ __ __
Time of Visit: (hh/mm/am-pm)	__ __ / __ __ / __ __

*Observer name will be collected automatically by the tablet application

Question	Yes	No	DK	Go to
Did you receive agreement/permission to conduct this study at this facility from the facility In-Charge after reading the introduction script?	1	0		

Section 8: PERSONNEL		
Do you have staff providing the following services	Male	Female
B800:Total number of health care staff employed in the facility?		
Selected health care services	Trained	Is at least one person present and physically available 24 hours/day
B801a and b: Postnatal care for Mothers?	Yes □ No □	Yes □ No □
B802a and b:Postnatal care for Newborn?	Yes □ No □	Yes □ No □
B803a and b: Postpartum Family Planning?	Yes □ No □	Yes □ No □
B804a: Youth Friendly reproductive and sexual health services?	Yes □ No □	
B805a and b: Gender-based violence services?	Yes □ No □	Yes □ No □
B806a: Maternal perinatal death surveillance and response	Yes □ No □	

Section 2: LABOR & DELIVERY INVENTORY				
ASK TO SPEAK WITH THE HEAD OF LABOR & DELIVERY UNIT (THIS MAY BE DIRECTOR/IN-CHARGE IF NO HEAD OF UNIT)				
Question	Yes	No	DK	Go to
B200: Does this facility provide delivery services?	1	0		No→B300
B201: What is the most common mode of transport the people in this area to bring in women in labor?	CODE			
Ambulance	1			
Animal Drawn Cart	2			
Tricycle (Auto-Rickshaw)	3			
Rented Motor Vehicle	4			
Own Motor Vehicle	5			
Brought manually in the stretcher	6			
Other	(*Specify*):_____			
B202: Does this facility provide 24 hour coverage for delivery services?	1	0		No→B204
B203: Is a skilled birth attendant present at the facility or on call 24 hours a day, including weekends, to provide delivery care?	CODE			
No	0			
Yes, present, schedule observed	1			
Yes, present, schedule reported, not seen	2			
Yes, on-call schedule observed	3			
Yes, on-call, schedule reported, not seen	4			

B204: Does this facility allow women to bring a companion with them into the delivery room?	1	0		No→B205
B204a: A male partner or companion?	1	0		
B204b: A female family member or companion?	1	0		

READ ALOUD: NOW I AM GOING TO ASK YOU ABOUT MEDICAL INTERVENTIONS FOR MANAGEMENT OF COMPLICATIONS DURING LABOR AND DELIVERY. FOR EACH INTERVENTION, PLEASE TELL ME IF THIS IS EVER PROVIDED AT THIS FACILITY, AND IF YES, IF IT HAS BEEN CONDUCTED IN THIS FACILITY WITHIN THE PAST 3 MONTHS.

Question	Yes	No	DK	Go to
B205: Does this facility ever provide parenteral oxytocic drugs to prevent postpartum hemorrhage?	1	0		No→B206
B205a: In the past 3 months?	1	0	98	
B205b: If oxytocin is used, is it refrigerated?	1	0	98	
B206: Does this facility ever provide parenteral anticonvulsants for pregnancy-related hypertension?	1	0		No→B207
B206a: In the past 3 months?	1	0	98	
B207: Does this facility ever provide parenteral antibiotics for pregnancy-related infections?	1	0		No→B208
B207a: In the past 3 months?	1	0	98	
B208: Does this facility ever perform Manual removal of placenta?	1	0		No→B209
B208a: In the past 3 months?	1	0	98	
B209: Does this facility ever perform Manual Vacuum Aspiration (MVA)?	1	0		No→B210
B209a: In the past 3 months?	1	0	98	
B210: Does this facility ever perform dilation and curettage (D&C)?	1	0		No→B211
B210a: In the past 3 months?	1	0	98	
B211: Does this facility ever perform assisted deliveries—that is, use forceps or vacuum?	1	0		No→B212
B211a: In the past 3 months?	1	0	98	
B212: Does this facility ever perform caesarean sections?	1	0		No→B213
B212a: In the past 3 months?	1	0	98	
B213: Does this facility ever provide antenatal corticosteroids for fetal lung maturation?	1	0		No→B214
B213a: In the past 3 months?	1	0	98	
B214: Does this facility ever perform newborn resuscitation?	1	0		No→B215
B214a: In the past 3 months?	1	0	98	
B215: Does this facility ever support kangaroo mother care for pre-term and low birth-weight newborns?	1	0		No→B216
B215a: In the past 3 months?	1	0	98	
B216: Does this facility ever provide injectable antibiotics for treatment of severe newborn infection	1	0		No→B217
B216a: In the past 3 months?	1	0	98	

B217: Does this facility have a trained health worker who can perform a caesarean present in the facility or on call 24 hours a day (including weekends)?	CODE			
No	0			
Yes, present, schedule observed	1			
Yes, present, schedule reported, not seen	2			
Yes, on-call schedule observed	3			
Yes, on-call, schedule reported, not seen	4			
B218: Does this facility have an anesthetist present in the facility or on call 24 hours a day (including weekends)?	CODE			
No	0			
Yes, present, schedule observed	1			
Yes, present, schedule reported, not seen	2			
Yes, on-call schedule observed	3			
Yes, on-call, schedule reported, not seen	4			
B219: Does this facility perform blood transfusions? (IF YES, is there a blood bank or are there transfusion services only)				
No blood transfusions	0			→B220
Yes, blood bank	1			
Yes, transfusion, no blood bank	2			
B219a: Has blood transfusion been performed for maternity care by this facility during the past 3 months?	1	0	98	
B220: If any person comes with infectious disease (i.e. TB, Hepatitis B, HIV) does the facility have guidelines for controlling/prevention of infectious diseases?	1	0	98	
B221: Does this facility have designated areas to dispose of contaminated waste?	1	0	98	

READ ALOUD: NOW I WANT TO ASK YOU ABOUT HOW THIS FACILITY HANDLES CONTAMINATED REUSABLE EQUIPMENT AFTER COMPLETING A DELIVERY. IF THE UNIT PROCESSES SOME EQUIPMENT AND SENDS OTHER EQUIPMENT ELSEWHERE, INDICATE THE PROCEDURE FOR EQUIPMENT PROCESSED IN THIS SERVICE DELIVERY UNIT. IF VAGINAL DELIVERIES ARE CONDUCTED IN A DIFFERENT ROOM THAN CAESAREAN SECTION DELIVERIES, ASSESS THE PROCESSING EQUIPMENT FOR VAGINAL DELIVERIES.

B222: After completing a delivery, what procedures do health workers follow for initial handling of contaminated equipment (such as scissors, clamps) that will be reused?	Code
Nothing is done	0
Decontaminate, then soap & water scrub, then rinse	1
Soap & water scrub, then decontaminate	2
Soap & water brush scrub only	3
Disinfectant soak, not scrubbed	4
Soap & water, not brush scrubbed	5
Other (*specify*) _____	95
Don't know	98

Question	Yes	No	DK	Go to
B223: Besides decontaminating and cleaning, what is the final process most commonly used for disinfecting or sterilizing medical equipment (such as surgical instruments) before they are reused? If different methods are used for different types of equipment, indicate the method(s) used for metal equipment such as speculums or forceps.	Code			
Nothing is done	0			
Dry-heat sterilization	1			
Autoclaving	2			
Steam sterilization	3			
Boiling	4			
Chemical method	5			
Other (*specify*) _____	95			
Don't know	98			

THERE ARE NO MORE QUESTIONS FOR THE HEAD OF LABOR & DELIVERY UNIT/DIRECTOR. EXPLAIN THAT FOR THE NEXT SECTION, YOU WILL NEED TO WALK AROUND AND LOOK AT THE DELIVERY SERVICE AREA. THEY CAN NOW CHOOSE TO ACCOMPANY YOU FOR THE REST OF THE ASSESSMENT OR ATTEND TO OTHER BUSINESS. IF THEY DO NOT ACCOMPANY YOU, ASK IF A HEALTH WORKER INVOLVED IN DELIVERY CARE CAN HELP YOU WITH THE NEXT PART OF THE ASSESSMENT.

ASK TO SEE THE ROOM WHERE NORMAL DELIVERIES ARE CONDUCTED.

Question	Yes	No	DK	Go to
B224: Is there a place for hand washing in the labor room?	1	0		
B224a: Is there soap and water?	1	0	98	
B225: Is a newborn resuscitation trolley / newborn corner visible and easily accessible in the labor room?	1	0		
B227: Describe the setting of the delivery room	Code			
Private room with visual and auditory privacy	1			
Non-private room with visual and auditory privacy	2			
Visual privacy only	3			
No privacy	4			
B228: Describe the conditions in the delivery room				
Moderately Clean	1			
Clean	2			
Moderately Dirty	3			
Dirty	4			
B229: Is there a toilet for client use near the delivery room	1	0		No →B230
B229a: Is the toilet functioning?	1	0	98	
B229b: Is the toilet clean?	1	0	98	

NOTE THE AVAILABILITY AND CONDITION OF THE FOLLOWING SUPPLIES, EQUIPMENT AND MEDICATIONS NEEDED FOR DELIVERY SERVICES. ITEMS MAY BE IN DELIVERY ROOM OR AN ADJACENT ROOM. IF YOU DO NOT SEE AN ITEM, ASK THE HEALTH WORKER HELPING YOU TO SHOW YOU THE ITEM.

B24	Observed	Reported not seen	Not available	Don't know	Go to
B230: Sterile gloves	1	2	3	98	
B231: Sharps container	1	2	3	98	
B232: Already mixed decontaminating solution (0.5% chlorine)	1	2	3	98	
B233: Alcohol hand rub	1	2	3	98	
B234: Waste receptacle with lid and plastic liner	1	2	3	98	
B235: Soap for hand washing	1	2	3	98	
B236: Water for hand washing	1	2	3	98	No/DK→B238
B237: How is water being made available for use in the delivery service area today?	Code				
Piped	1				
Bucket with tap	2				
Bucket or basin	3				
Don't Know	98				
B238: Syringes and needles	1	2	3	98	
B239: Sterile scissors or blade	1	2	3	98	
B240: Sterile disposable cord ties or clamps	1	2	3	98	
B241: Towel or blanket to wrap baby	1	2	3	98	
B242: Blank partographs or blank maternity booklets with partograph included	1	2	3	98	

Availability and Functioning of Supplies and Equipment	Availability					Functioning *		
	Observed	Reported not seen	Not available	Don't know	Go to	Yes	No	DK
B243: Incubator	1	2	3	98	observed→B243*	1	2	98
B244: Other source of heat for premature infant	1	2	3	98	observed→B244*	1	2	98
B245: Bag and mask (infant size) for resuscitation	1	2	3	98	observed→B245a*	1	2	98
	1	2	3	98	observed→B245b*	1	2	98

B245a: Bag B245b: Mask size 0 B245c: Mask size 1	1	2	3	98	observed→B245c*	1	2	98
B246: Suction device for mucus extraction	1	2	3	98	observed→B246*	1	2	98
B247: Suction apparatus for use with catheter (electric or manual)	1	2	3	98	observed→B247*	1	2	98
B248: Resuscitation table for baby	1	2	3	98	observed→B248*	1	2	98
B249: Uninterrupted oxygen supply	1	2	3	98	observed→B249*	1	2	98
B250: Obstetric Forceps	1	2	3	98	observed→B250*	1	2	98
B251: Vacuum extractor (manual or electrical)	1	2	3	98	observed→B251*	1	2	98
B252: Manual vacuum aspirator (MVA)	1	2	3	98	observed→B252*	1	2	98
B253: Dilatation and curettage (D&C) kit	1	2	3	98	observed→B253*	1	2	98
B254: PPIUCD insertion kit	1	2	3	98	observed→B254*	1	2	98

IF MEDICATIONS ARE PACKAGED TOGETHER IN A COMBO-PACK FOR DELIVERIES, CIRCLE 1 FOR "OBSERVED >/ 1 VALID DOSE" FOR EACH INDIVIDUAL MEDICATION IN THE PACK

MEDICATIONS IN DELIVERY ROOM	Observed ≥1 valid dose	Reported not seen	Not available	Don't know
B255: Intravenous solutions: either Ringers lactate, D5NS, or NS infusion	1	2	3	98
B256: Injectable ergometrine/ methergine	1	2	3	98
B257: Injectable oxytocin/ syntocin	1	2	3	98
B258: Misoprostol	1	2	3	98
B259: Injectable diazepam	1	2	3	98
B260: Injectable magnesium sulfate	1	2	3	98
B261: Injectable Ca Gluconate	1	2	3	98
B262: Amoxicillin, procaine penicillin or injectable ampicillin	1	2	3	98
B263: Injectable gentamicin	1	2	3	98
B264: Lignocaine 2%	1	2	3	98

B265: Tetracycline ointment	1	2	3	98
B266: Dexamethasone	1	2	3	98
B267: Zidovudine	1	2	3	98
B268:Lamivudine	1	2	3	98
B269: Nevirapine	1	2	3	98

GUIDELINES/ PROTOCOLS IN DELIVERY ROOM	Observed	Reported not seen	Not available	Don't know
B270: Guidelines for care/managing normal labor and birth (can be printed or handmade)	1	2	3	98
B271: Guidelines for emergency obstetric and newborn care (can be printed or handmade)	1	2	3	98
B272: Guidelines for management of pre-term birth (can be printed or handmade)	1	2	3	98
B273: Guidelines for essential newborn care (can be printed or handmade)	1	2	3	98
B274: Guidelines for PMTCT	1	2	3	98

ASK TO SEE THE ROOM WHERE CAESAREAN SECTIONS / SURGERIES ARE PERFORMED. IF THERE IS NO ROOM FOR SURGERIES, LOOK IN THE DELIVERY ROOM. CHECK IF THE FOLLOWING EQUIPMENT, SUPPLIES AND MEDICATIONS ARE AVAILABLE IN THE ROOM OR IN AN ADJACENT ROOM.

	Availability					Functioning *		
EQUIPMENT IN SURGICAL SERVICE AREA	Observed	Reported not seen	Not available	Don't know	Go to	Yes	No	DK
B275: Operating Table	1	2	3	98	observed→B275*	1	2	98
B276: Operating light	1	2	3	98	observed→B276*	1	2	98
B277: Anesthesia giving set	1	2	3	98	observed→B277*	1	2	98
B278: Scrub area adjacent to or in the operating room	1	2	3	98				
B279: Tray, drum, or package with sterilized instruments ready for use	1	2	3	98				

MEDICATIONS IN SURGICAL SERVICE AREA	Observed ≥1 valid dose	Reported not seen	Not available	Don't know
B280: Halothane	1	2	3	98
B281: Ketamine	1	2	3	98

END OF SECTION 2

Section 3: Antenatal Care Inventory				
ASK TO SPEAK WITH THE HEAD OF ANTENATAL CARE UNIT (THIS MAY BE DIRECTOR/IN-CHARGE IF NO HEAD OF UNIT)				
Question	Yes	No	DK	Go to
B300: Does this facility offer routine antenatal services?	1	0		
B301: Does this facility offer referral antenatal services?	1	0		B300 is No AND B301 is No → END SECTION
B302: Does this facility have a system whereby measurements or procedures for ANC clients are routinely carried out before the consultation?	1	0		
B303: Does this facility offer routine postpartum family planning services?	1	0		No→B305
B304: Does this facility indicate on ANC card the PPFP method client has chosen?	1	0		
B305: Is the stock of family planning supplies, equipment, and materials maintained on a regular basis?	1	0		
B306: Is the consumption of contraceptive stock recorded and up to date?	1	0		
ASK TO SEE THE PLACE WHERE ANTENATAL CLIENTS ARE SEEN BEFORE THEY HAVE THEIR MEDICAL CONSULTATION AND INDICATE WHICH OF THE FOLLOWING ACTIVITIES ARE ROUTINELY CARRIED OUT THERE. OBSERVE IF THE BELOW ACTIVITIES ARE BEING CONDUCTED ROUTINELY. IF NOT SEEN ASK:				
Question	Yes	No	DK	Go to
B307: Is [*read activity*] routinely conducted for all antenatal care clients?	1	0	98	
B307a: Weighing clients	1	0	98	
B307b: Taking blood pressure	1	0	98	
B307c: Urine test for protein	1	0	98	
B307d: Blood test for anemia	1	0	98	
B307e: Conducting group health education sessions				
B308: Which of the following activities are performed as part of routine services, that is, each client has this test at least once:	1	0	98	
B308a: Blood test for anemia	1	0	98	
B308b: Blood test for syphilis	1	0	98	
B308c: Blood group	1	0	98	
B308d: Test for Rh factor	1	0	98	
B308e: Urine test for protein	1	0	98	
B309: Which of the following types of services are routinely offered to antenatal clients:				
B309a: Preparing a birth plan/complication readiness	1	0	98	
B309b: Counseling about family planning	1	0	98	
B309c: Counseling about HIV/AIDS	1	0	98	

B309d: Testing for HIV/AIDS	1 0 98
B3010: Is tetanus toxoid vaccination available all days ANC services are offered?	Code
Never offered	0
Not all days	1
Yes	2

B311: How many days each week are tetanus toxoid vaccinations offered at this facility? (If never offered, enter 0, don't know enter 8)	
B312: Is tetanus toxoid immunization available today?	1 0 98

THERE ARE NO MORE QUESTIONS FOR THE HEAD OF ANTENATAL CARE UNIT/DIRECTOR. EXPLAIN THAT FOR THE NEXT SECTION, YOU WILL NEED TO WALK AROUND AND LOOK AT THE ANTENATAL CARE EXAMINATION AREA. THEY CAN NOW CHOOSE TO ACCOMPANY YOU FOR THE REST OF THE ASSESSMENT OR ATTEND TO OTHER BUSINESS. IF THEY DO NOT ACCOMPANY YOU, ASK IF A HEALTH WORKER INVOLVED IN ANTENATAL CARE CAN HELP YOU WITH THE NEXT PART OF THE ASSESSMENT.

ASK TO SEE THE ROOM WHERE EXAMINATIONS FOR ANTENATAL CLIENTS ARE CONDUCTED.

B313: Describe the setting of the ANC examination room:	Code
Private room with visual and auditory privacy	1
Non-private room with visual and auditory privacy	2
Visual privacy only	3
No privacy	4

B314: Describe the conditions in the ANC examination room:	
Moderately clean	1
Clean	2
Moderately dirty	3
Dirty	4

Question	Yes	No	DK	Go to
B315: Is there a toilet for client use near the ANC service delivery area?	1	0		No →B317
B315a: Is the toilet functioning?	1	0	98	

NOTE THE AVAILABILITY AND CONDITION OF THE FOLLOWING SUPPLIES, EQUIPMENT AND MEDICATIONS NEEDED FOR ANC SERVICES. ITEMS MAY BE IN THE ROOM WHERE ANC EXAMINATIONS TAKE PLACE OR AN ADJACENT ROOM. IF YOU DO NOT SEE AN ITEM, ASK THE HEALTH WORKER HELPING YOU TO SHOW YOU THE ITEM.

SUPPLIES AND EQUIPMENT IN ANC EXAMINATION ROOM	Observed	Reported not seen	Not available	Don't know	Go to
B316: Examination gloves	1	2	3	98	
B317: Sharp container	1	2	3	98	
B318: Alcohol hand rub	1	2	3	98	
B319: Waste receptacle with lid and liner	1	2	3	98	
B320: Soap for hand washing	1	2	3	98	

B321: Water for hand washing	1	2	3	98	Reported not seen / Not available/DK→B325

B322: How is water being made available for use in the delivery service area today?	Code
Piped	1
Bucket with tap	2
Bucket or basin	3
Don't Know	98

EQUIPMENT MAY BE IN EXAMINATION ROOM, AN ADJACENT ROOM, OR ROOM WHERE MEASURE IS TAKEN.

EQUIPMENT AND TESTING SUPPLIES	AVAILABILITY				FUNCTIONING*			
	Observed	Reported not seen	Not available	Don't know	Go to	Yes	No	DK
B323: Blood pressure apparatus	1	2	3	98	observed→B325*	1	2	98
B325: Stethoscope	1	2	3	98	observed→B326*	1	2	98
B326: Fetal stethoscope (Fetoscope)	1	2	3	98	observed→B327*	1	2	98
B327: Adult weighing scale	1	2	3	98	observed→B328*	1	2	98
B328: Urine test strip for protein	1	2	3	98				
B329: RPR kit / Syphilis SD Bioline	1	2	3	98				
B330: HIV rapid test / HIV Determine and Unigold	1	2	3	98				

MEDICATIONS/ VACCINE	Observed	Reported not seen	Not available	Don't know	Go to
B330a RDT malaria test	1	2	3	98	
B330b Microscopy malaria test	1	2	3	98	
B331: Iron and/or folic acid	1	2	3	98	
B332: Tetanus toxoid vaccine	1	2	3	98	
B333: Mebendazole/Albendazole	1	2	3	98	
B334: SP (Fansidar)	1	2	3	98	
B335: ARV Medications *(If medications are packaged together in a combo-pack, select yes for each individual medication in the pack)*					
B335a: Zidovudine	1	2	3	98	
B335b: Lamivudine	1	2	3	98	
B335c: Nevirapine	1	2	3	98	
B335d: Tenofovir	1	2	3	98	
B335e: Efavirence	1	2	3	98	

END OF SECTION 3

Section 5: Family Planning Services				
ASK TO SPEAK WITH THE HEAD OF FAMILY PLANNING SERVICES (THIS MAY BE DIRECTOR/IN-CHARGE IF NO HEAD OF UNIT)				
Question	Yes	No	DK	Go to
B500: Does this facility offer family planning services?	1	0		B500 is No→ END SECTION
B500a: Are family planning services available to men?	1	0	98	
B500b: Are women encouraged to invite their male partners to participate in family planning visits?	1	0	98	
B500c: Are there family planning information, education and communication (IEC) materials on display in the facility?	1	0	98	
B500d: Are there family planning information, education and communication (IEC) materials specifically geared towards men on display in the facility?	1	0	98	
B501: Who provides family planning counseling at this facility?				
B501a: CHEW	1	0	98	
B501b: Midwife	1	0	98	
B501c: Nurse midwife	1	0	98	
B501d: Medical officer	1	0	98	
B501e: Doctor	1	0	98	
B501f:Specialist doctor	1	0	98	
B501g: Other	1	0	98	
B502: What family planning methods are offered by this facility?				
B502a: Male condoms	1	0	98	
B502b: Female condoms	1	0	98	
B502c: Oral contraceptive pills: progestin only B502d: Oral contraceptive pills: combined	1	0	98	
B502e: Intrauterine device (IUD)	1	0	98	
B502f: Implants: Implanon B502g: Implants: Jadelle	1	0	98	
B502h: Injectable hormones (e.g., Depo Provera)				
B502i: Female sterilization	1	0	98	
B502j: Male sterilization	1	0	98	
B502k: Emergency contraception	1	0	98	
B502l: Cycle Beads (Standard Days Method)	1	0	98	
B502m: Lactational amenorrhea method (LAM)	1	0	98	
	1	0	98	
B503: Where are family planning commodities stored?	Code			
Pharmacy	1			
Store room	2			
Cabinet in FP area	3			
Drawer in delivery suite	4			
B504: Are commodities locked?	1	0		No →B506
B505: Who manages access to the commodities				
B505a: CHEW	1	0	98	
B505b: Midwife	1	0	98	
B505c: Nurse midwife	1	0	98	
B505d: Medical officer	1	0	98	

B505e: Doctor B505f Specialist doctor	1	0	98		
B506: Have you had a stock-out in the past 3 months? If yes, which methods (specify) _____?	1	0		No →B508	
B507: How long did the stock-out last? <1 week 2-3 weeks >3 weeks Don't know	Code 1 2 3 98				

THERE ARE NO MORE QUESTIONS FOR THE HEAD OF FAMILY PLANNING SERVICES. EXPLAIN THAT FOR THE NEXT SECTION, YOU WILL NEED TO WALK AROUND AND LOOK AT THE FAMILY PLANNING SERVICE PROVISION AREA. THEY CAN NOW CHOOSE TO ACCOMPANY YOU FOR THE REST OF THE ASSESSMENT OR ATTEND TO OTHER BUSINESS. IF THEY DO NOT ACCOMPANY YOU, ASK IF A HEALTH WORKER INVOLVED IN FAMILY PLANNING SERVICES FOR CHILDREN UNDER FIVE CAN HELP YOU WITH THE NEXT PART OF THE ASSESSMENT.

B508: Describe the setting of the family planning examination and procedure room: Private room with visual and auditory privacy Non-private room with visual and auditory privacy Visual privacy only No privacy	Code 1 2 3 4
B509: Describe the conditions in the family planning examination and procedure room: Moderately clean Clean Moderately dirty Dirty	 1 2 3 4

NOTE THE AVAILABILITY AND CONDITION OF THE FOLLOWING SUPPLIES, EQUIPMENT AND MEDICATIONS NEEDED FOR FAMILY PLANNING SERVICES. ITEMS MAY BE IN THE ROOM WHERE EXAMINATIONS TAKE PLACE OR AN ADJACENT ROOM. IF YOU DO NOT SEE AN ITEM, ASK THE HEALTH WORKER HELPING YOU TO SHOW YOU THE ITEM.

SUPPLIES AND EQUIPMENT IN FAMILY PLANNING EXAMINATION ROOM	Observed	Reported not seen	Not available	Don't know	Go to
B510: Stethoscope	1	2	3	98	
B511: Sphygmomanometer	1	2	3	98	
B512: Bivalve speculum	1	2	3	98	
B513: Uterine sound	1	2	3	98	
B514: Long placental forceps	1	2	3	98	
B515: Ring forceps for cleaning	1	2	3	98	
B516: Tenaculum for grasping cervix	1	2	3	98	
B517: Scissors	1	2	3	98	
B518: Gallly pot for antiseptic	1	2	3	98	
B519: Mosquito forceps straight	1	2	3	98	
B520: Mosquito forceps curved	1	2	3	98	
B521: Scalpel	1	2	3	98	
B522: Local anesthesia (lidocaine 1%)	1	2	3	98	
B523: 5 or 10 cc syringe and 1.5 needle	1	2	3	98	
B524: Sharps container	1	2	3	98	
B525: Surgical tape to close incision and bandage to wrap the incision	1	2	3	98	
B526: Waste receptacle with lid and plastic liner	1	2	3	98	

B527: Soap for hand washing	1	2	3	98	
B528: Running water for hand washing	1	2	3	98	Reported not seen / Not available/DK→B325
B529: How is water being made available for use in the service area today? Piped Bucket with tap Bucket or basin Don't Know	Code 1 2 3 98				

NOTE THE AVAILABILITY OF THE FOLLOWING, WHICH MAY BE IN EXAMINATION ROOM OR AN ADJACENT ROOM.

	AVAILABILITY				
COMMODITIES	Observed	Reported not seen	Not available	Don't know	Go to
B530: Male condoms	1	2	3	98	
B531: Female condoms	1	2	3	98	
B532: Oral contraceptive pills: progestin only	1	2	3	98	
B533Oral contraceptive pills: combined	1	2	3	98	
B534: IUDs					
B535: Implants: Implanon	1	2	3	98	
B535: Implants: Jadelle					
B535: Injectable hormones (e.g. Depo-provera)	1	2	3	98	
B536: Cycle beads	1	2	3	98	
B537: Emergency contraception pill packets	1	2	3	98	

END OF SECTION 5

Section 6: HMIS

ASK TO SPEAK WITH THE PERSON RESPONSIBLE FOR HEALTH INFORMATION SYSTEMS .THIS MAY BE A DATA MANAGER/HMIS OFFICER, FACILITY-IN-CHARGE OR ANOTHER SERVICE PROVIDER

Question	Yes	No	DK	Go to
B600: Does this facility have a system in place to regularly collect health services data?	1	0	98	
B601: Does this facility regularly compile any reports containing health services information (IF YES, ASK TO SEE COPY OF MOST RECENT REPORT)	1	0	98	B500 is No and B501 is No→ END SECTION
B601a: Do reports present data disaggregated by sex?	1	0	98	
B602: How frequently are these reports compiled: Monthly or more often Every 2-3 months Every 4-6 months Less often than every 6 months	CODE 1 2 3 4			
B603: Are facility reports analyzed for data quality?	1	0	98	No→B604
B603a: Are reports analyzed for completeness?	1	0	98	
B603b: Are reports checked against data in registers?	1	0	98	
B603c: Is a report on data quality produced? (IF YES, ASK TO SEE COPY OF MOST RECENT REPORT)	1	0	98	

B604: Does the facility display any of the following in table, graph, chart or map form?				
B604a: Data related to maternal health	1	0	98	B604a is No→
B604a1: IF YES, is it up to date?	1	0	98	B604b
B604b: Data related to newborn health	1	0	98	B604 is No→
B604b1: IF YES, is it up to date?	1	0	98	B604c
B604c: Data related to child health	1	0	98	B604c is No→
B604c1: IF YES, is it up to date?	1	0	98	B604d
B604d: Data related to family planning	1	0	98	B604d is No→
B604d1: IF YES, is it up to date?	1	0	98	B604e
B604e: Data related to facility utilization			98	B604e is No→
B604e1: IF YES, is it up to date?	1	0	98	B605
B605: Do district/province/state authorities provide feedback on reports?	1	0	98	B605 is No→ B608
B606: Does feedback provided generally include recommendations for action?	1	0	98	
B607: IF YES, what types of action oriented recommendations have been made based on HMIS data?				
B607a: Review strategy by examining service performance target and actual performance from month to month	1	0	98	
B607b: Review facility personnel responsibilities by comparing service targets and actual performance month to month	1	0	98	
B607c: Mobilization/shifting resources based on comparison by services	1	0	98	
B607d: Advocacy for more resources by showing gaps in ability to meet targets	1	0	98	
B608: Does the facility have a functional Maternal and Perinatal Death Surveillance Response mechanism?	1	0	98	
B609: Please comment on anything important to note for the data analysis or for debriefing with the health worker at the end of your visit to the facility:				
END OF SECTION 6				

Section 7: INDICATOR CALCULATION

For each of the indicators listed below, please state the numerator and denominator for calculating them

What is the numerator and the denominator for calculating percentage for these indicators?
(Record 1 if the provider does not know.)

B701: ANC care visits at which blood pressure was measured

B701i: Numerator:
Number of women attending ANC whose blood pressure was measured
Number of women attending ANC
Number of women whose blood pressure was measured
Don't Know

B701ii: Denominator:
Total number of women attending ANC
Total number of women
Don't know

B702: Women receiving Uterotonic immediately after birth of the baby

B702i: Numerator:
Total number of women that received Uterotonic immediately after delivery
Total number of women that received Uterotonic
Don't know

B702ii:Denominator:
Total number of women
Total number of women that delivered in the health facility
Don't know

B703: Women with severe preeclampsia or eclampsia treated with magnesium sulfate injection

B703i: Numerator:
Total number of women with severe preeclampsia or eclampsia treated with MgSo4
Total number of women with severe preeclampsia or eclampsia
Don't know

B703ii: Denominator:
Total number of women with severe preeclampsia or eclampsia
Total number of women with the problem
Don't know

B704: Women that received a FP method pre-discharged after delivery

B704i: Numerator:
Number of women that delivered and received a FP method pre-discharge
Number of women that received a FP method
Don't know

B704ii: Denominator:
Total number of delivery
Number of women that delivered in the health facility
Don't know

B705: Institutional maternal mortality

B705i: Numerator:
Total number of death
Number of deaths from obstetrics complications in facility
Don't know

B705ii: Denominator:
Total number of death
Number of women with specified obstetrics complications attended in in facility
Don't know

B706: Newborns not breathing/crying at birth resuscitated by stimulation or with bag & mask ventilation
B706i: Numerator:
Number of newborn not breathing/crying at birth resuscitated by use of bag and mask
Newborn resuscitated
Don't know

B706ii: Denominator:
Number of newborn not crying/needing resuscitation
Number of livebirth
Don't know

B707: Newborn receiving essential newborn care
B707i:Numerator:

Number of newborn that received all 4 elements of newborn care
Number of newborn that received essential care
Number of newborn
Don't know

B707ii: Denominator:
Total number of livebirth in the health facility
Total number of livebirth
Total number of birth
Don't know

B708 : Babies for whom Chlorhexidine was applied to the umbilical cord at birth
B708i: Numerator:
Number of newborn receiving CHX gel
Number of livebirth for which CHX gel was applied to the cord after delivery
Don't know

B708ii: Denominator:
Total number of livebirth in the health facility
Total number of birth
Don't know

B709 : Cases of diarrhea with children under 5 at the health facility treated with ORZ or Zinc
B709i: Numerator:
Number of children under 5 with diarrhea treated in health facility with ORZ or Zinc
Number of children under 5 treated for diarrhea
Number of children under 5 treated for diarrhea in health facility
Don't know

B709ii: Denominator:
Number of children under 5 with diarrhea in health facility
Number of children with diarrhea
Don't know

B710: Children under 5 at the health facility with pneumonia treated with antibiotics
B710i: Numerator:
Number of children under 5 with pneumonia treated with antibiotics in health facility
Number of children with pneumonia treated
Don't know

B710ii: Denominator:
Number of case of children under 5 with pneumonia in health facility
Number of children with pneumonia
Don't know

B711: Under-5 children with confirmed uncomplicated Malaria treated with ACT
B711i: Numerator:
Number of children under 5 with conformed malaria treated with ACT in health facility
Number of children with confirmed malaria treated
Don't know

B711ii: Denominator:
Total number of children under 5 with confirmed malaria
Number of cases of confirmed malaria
Don't know

B712-B19: Data use and decision-making

B712: Have any decisions and actions resulted from review of MNH indicators in the posters data dashboard at this facility? Please, provide specific examples of the types of actions/changes that have been made below:	Yes	No	B712a: If Yes, describe the key changes and other comments
B 713: Facility personnel responsibilities reviewed and/or changed	1	0	B713a: If Yes, describe the key changes and other comments
B 714: Mobilization of/shifting of resources	1	0	B714a: If Yes, describe the key changes and other comments
B715: Changes in commodity procurement	1	0	B715a: If Yes, describe the key changes and other comments
B716: Staff training or supervision conducted	1	0	B716a: If Yes, describe the key changes and other comments
B717: Changes in community education or outreach	1	0	B717a: B713a: If Yes, describe the key changes and other comments
B718: Appreciation and acknowledgement of staff based on performance	1	0	B718a: If Yes, describe the key changes and other comments
B719: Organization of services changed (e.g., client flow, organization of physical space)	1	0	B719a: If Yes, describe the key changes and other comments