Improving Health Outcomes for Children Under Five in Nigeria

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Goal

USAID's Maternal and Child Survival Program (MCSP) is a global, five-year cooperative agreement to introduce and support scale-up of high-impact health interventions in USAID's priority countries. The ultimate goal of MCSP is to contribute to USAID's ambitious goal of preventing maternal and child deaths.

In Nigeria, MCSP implemented the Maternal, Newborn and Child Health (MNCH) Program from 2015-2018 with the Government of Nigeria and other partners at the national level and in Ebonyi and Kogi states. MCSP's child health goal was to reduce deaths in children under five years of age from pneumonia, diarrhea, malaria, malnutrition and other treatable causes by increasing the coverage and the quality of public and private sector child health services.

Child Health in Nigeria: Key Facts

- Nigeria is the most populous country in Africa and has the largest burden of under-five deaths
- Nigeria has an under-five mortality rate of 128 per 1,000 live births and experienced an estimated 714,188 deaths in children under-five in 2017 (UNICEF)
- Sixty-eight percent of these under-five deaths occurred after the neonatal period
- MCSP Child Health activities are at the national level and in Kogi and Ebonyi states

Background

Nigeria is the most populous country in Africa. With an under-five mortality rate of 128 per 1,000 live births (Nigeria Demographic and Health Survey 2013), it is also the largest contributor in Africa and the second largest contributor in the world to under-five deaths, according to UNICEF.

Under USAID's and the Nigeria Mission's strategic directions, MCSP's child health assistance began in 2015 at the **national level,** and expanded to **Ebonyi** and **Kogi** states in late 2016. MCSP worked at national and state level with both public and private sector stakeholders including the Federal and State Ministries of Health (FMOH and SMOH), the National and State Primary Health Care Development Agencies (NPHCDA and SPHCDAs), the Pharmaceutical Council of Nigeria (PCN), Nigeria Association of Patent and Proprietary Medicine Dealers (NAPPMED), the state-based associations of Patent Proprietary Medicine Vendors (PPMVs), and others.

At **national level**, MCSP successfully advocated with other partners for policy changes that would increase equitable access and improve the quality of care for malaria, pneumonia, diarrhea and other childhood conditions. Working through existing child health coordination mechanisms (Core Technical Committee for maternal, newborn and child health, the iCCM Task Force, the Child Health Technical Working Group [CHTWG] and their sub-committees), MCSP reviewed and contributed to new and updated national child health policies, guidelines and plans.

In **Kogi and Ebonyi states,** MCSP worked with the SMOHs and SPHCDAs to reintroduce Integrated Management of Childhood Illness (IMCI), strengthen supervision and mentoring of health workers, and take other actions to improve the quality of care provided for sick children in **government owned primary health care (PHC) facilities**. At **community level**, MCSP rolled out integrated Community Case Management of Childhood Illness (iCCM) through PPMVs, and tested this approach through the "**Enhancing Quality iCCM through PPMVs and Partnerships"** (EQuiPP) learning activity.

In all of its state and national level work, MCSP has taken a **systems approach**. This has included working with the states to influence their policies and plans; strengthen coordination platforms; strengthen MNCH supply chains; promote appropriate care-seeking practices; refine and use the community modules from Nigeria's health management information system (HMIS) with PPMVs; and demonstrate the power of public-private partnership in service delivery, commodity availability, and human resource management.

Key Results
Child Health Policies, Plans and Coordination Mechanisms • Amoxicillin Dispersible Tablets (Amox-DT) deregulated, available over the counter and included on the PPMV Essential Medicines List; caregivers now able to buy Amox-DT through PPMV outlets. • National Child Health Policy updated, new National Child Health Advocacy and Strategic Plan finalized, and National iCCM Guidelines and training materials revised to reflect the role of PPMVs as community resource persons (CORPS). • Pre- and in-service IMCI training modules reviewed and updated, and modules on community health management information systems (CHMIS) and logistics management information systems (LMIS) added to iCCM modules. • Child Health Technical Working Groups (CHTWG) established and meeting quarterly in both states as coordination platforms for all child health activities. This has reduced duplication of efforts and improved data reporting. • IMCI strategy adopted by the Kogi State Council on Health as the state's child survival program and commitments made to scaling up the approach statewide.
Household and Community - "Enhancing Quality iCCM through PPMVs and Partnerships" • PPMV GIS mapping and baseline and midline studies completed in four EQuiPP districts; findings used to design and improve the EQuiPP intervention. • 833 PPMVs certified[1] to provide iCCM out of 862 PPMVs trained and 682 PPMV outlets providing improved[2] iCCM services. • 5,408 sick children under five referred by community-based organizations (CBOs) and community volunteers to PHC facilities and PPMVs. • Between Apr. and Sep. 2018, PPMVs treated 2,635 childhood pneumonia cases with Amox-DT, 10,201 cases of malaria with ACTs, and 3,006 diarrhea cases with ORS/Zinc. • Midline and endline audits of 176 PPMV outlets showed dramatic and sustained increases in the availability of iCCM medicines and other commodities including RDTs (see Figure 3). • Proportion of sick children assessed for danger signs, tested for malaria, and treated and/or referred correctly according to illness classifications by PPMVs increased significantly, as did counselling practices (see Figure 4). • Effective public-private partnerships between SMOHs, SPHCDAs, PCN, NAPPMED, Logistics Management Coordinating Units (LMCUs), Local Government Area (LGA) focal people, and Ward Development Committees demonstrated through joint planning, supervision and monitoring of PPMV iCCM services at community level.

[1] PPMVs who attended the training for the entire period and who passed the post-test were provided with an iCCM kit and certificates of attendance to show competencies in providing iCCM services.
[2] Improvements in the quality of PPMV services further discussed on page 6

Key Results
Government Health Facilities - Strengthening Systems and Care for Sick Children • 246 frontline workers trained and with required competencies in IMCI; 119 government PHC facilities in Ebonyi and Kogi with improved capacity to provide quality IMCI services • 8,452 cases of childhood pneumonia treated with Amox-DT, 6,434 cases of childhood diarrhea treated according to the IMCI protocol, and 44,870 children treated with ACTs for malaria from Oct. 2016 to Sep. 2018. • IMCI pre-service education reactivated and institutionalized in seven tertiary Basic Health Institutions. • 45 LGA LMCUs in Kogi trained and improving quantification, distribution & management of MNCH commodities. • Ebonyi state supported to develop its first sustainable drug financing strategy for essential childhood medicines. • Community HMIS (CHMIS) and Logistics MIS (LMIS) addenda developed and incorporated into the iCCM curriculum; PPMV data captured in a DHIS2 database as a pilot to inform the national level as it moves toward a national CHMIS. • SMOH, LGA Managers and Hospital Management Board providing improved technical support and clinical mentoring to IMCI/Possible Severe Bacterial Infection (PSBI)-trained health workers in government health facilities during regular integrated supportive supervision visits.

MCSP Nigeria's Approach

Child Health Policies, Planning and Coordination Mechanisms

Advocating for the Deregulation of Amox-DT

Amox-DT is used as the first line treatment for childhood pneumonia down to the PHC level, but prior to 2016 it was not legal to sell or distribute Amox-DT in the community. This was a major barrier to the introduction of iCCM after the FMOH adopted it as a national child health strategy in 2012. MCSP successfully lobbied with other partners and through national coordination platforms influenced the deregulation and reclassification of Amox-DT as an "over-the-counter" pharmaceutical. As a result, PPMVs and other trained community health workers can now buy, sell, and/or distribute Amox-DT nationwide, without special exemption.

Strengthening National Coordination Mechanisms and Updating Child Health Policies and Plans

In collaboration with other partners, MCSP supported the FMOH to strengthen the coordination and planning mechanisms that help to shape Nigeria's child health policies and programs. National Child Health Technical Working Group (CHTWG) meetings were a platform to address child health issues and chart strategic direction. MCSP also participated in the national iCCM Task Force and its sub-committees on advocacy, communication and resource mobilization; monitoring and evaluation; and essential childhood medicines. Through these mechanisms, MCSP contributed to an FMOH review of the National Child Health Policy, development of the new National Child Health Advocacy and Strategic Plan, and revision of the iCCM National Guidelines and training materials to include PPMVs.

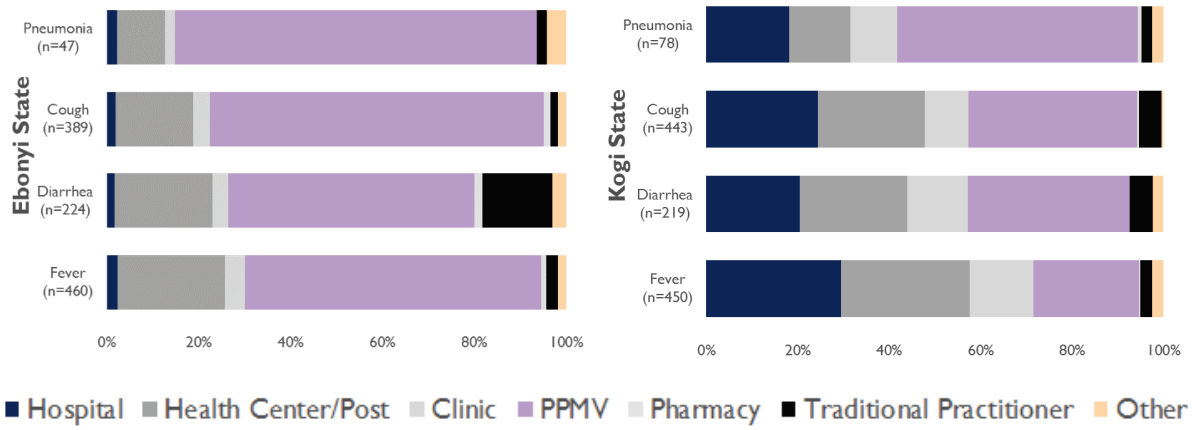
Facilitating Coordination and Planning in Ebonyi and Kogi States

MCSP worked with the SMOH/SPHCDAs and partners to replicate the successful coordination platform of the national CHTWG in Kogi and Ebonyi states, where state-level CHTWGs now coordinate child health activities and track progress. Also at state level, MCSP supported the Ebonyi and Kogi SMOHs to develop and disseminate the first costed 2018 Child Health Annual Operational Plan and conduct a midterm review of its implementation. MCSP's work to strengthen facility-based child health services also influenced Kogi's adoption of IMCI as the basis for its child survival strategy.

Community - "Enhancing Quality iCCM through PPMVs and Partnerships" (EQuiPP) with the Private Sector

EQuiPP is one of MCSP's global learning activities. The 2013 Demographic and Health Survey and MCSP's own baseline care-seeking study in early 2018 in Kogi and Ebonyi showed that a significant proportion of the population seeks treatment for childhood illness through the private sector, and that PPMVs are often the first source of such care outside the home (see Figure 1). MCSP's assessment of PPMV practices before introduction of the EQuiPP approach clearly showed sub-optimal PPMV care (see Figure 4).

Figure 1: PPMVs are the first source of care for 87 percent of caretakers seeking care outside the home for sick children under five years of age in Kogi and Ebonyi states. Data source: MCSP care-seeking study results.



In designing EQuiPP, MCSP and partners built on the population's use of private sector health providers, including PPMVs, as their first point of care outside the home. As shown in *Annex A,* the EQuiPP approach focuses on engagement, coordination, advocacy and building partnerships. MCSP and partners implemented EQuiPP in four LGAs (two each in Ebonyi and Kogi). The essential inputs in the two states were as follows:

Mapping and Assessing PPMV Care for Sick Children

In Nigeria's health system, PPMVs are valuable community health resource persons (CORPS) who can be trained and supported to increase the population's access to quality iCCM services. MCSP started its work in the states with an extensive inventory and mapping of PPMV outlets, a baseline household knowledge practice and coverage survey, a qualitative care-seeking study, and multiple rounds of PPMV audits and observations. The program used the findings from all of these studies with the states to design what became the EQuiPP approach to engaging and supporting PPMVs to provide iCCM services.

Improving Care-Seeking Behavior and Demand

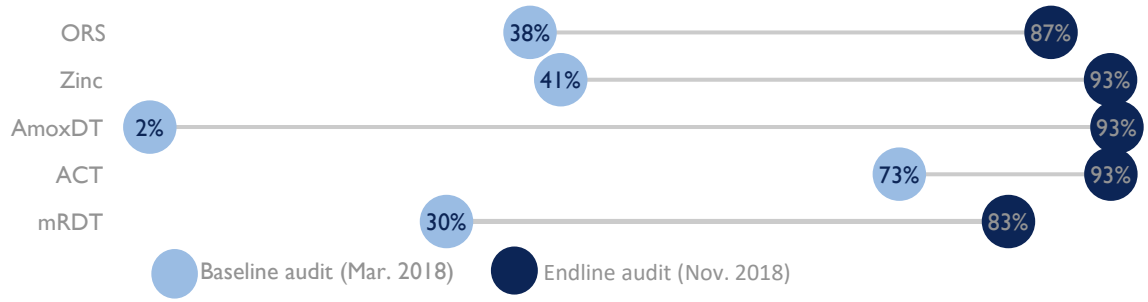
A qualitative study examining barriers and drivers of care-seeking for childhood illness informed the program's strategy and messaging (see Figure 2). In Kogi and Ebonyi, EQuiPP engaged five CBOs to support its demand generation strategies. CBOs reached caregivers in their homes and community groups with messages that focused on improving the recognition of danger signs, promoting proper care-seeking for sick children, addressing myths, misconceptions, norms, beliefs and values that can be barriers to care-seeking, and preparing caregivers with information about what to expect at the point of service when a child is referred. CBO capacity was built to deliver these messages and they were supported with user-friendly tools and job aids by MCSP.

Figure 2: Findings from the qualitative care-seeking study in Kogi and Ebonyi states.

Capitalizing on Market Forces to Increase PPMV Access to Quality Medicines

MCSP and partners developed EQuiPP with sustainability in mind. At baseline, very few PPMVs were stocking and recommending first line pharmaceuticals for sick children. To address this problem, MCSP brought PPMVs, NAPPMED and local pharmaceutical manufacturers and wholesalers together to find ways to make quality essential medicines for malaria, pneumonia and diarrhea more accessible to the PPMVs. This was done not through donor or government purchase, but by using market forces to aggregate the PPMVs' demand for quality products and increase the willingness of the manufacturers and wholesalers to supply these products at low cost. This strategy appears to be working. As shown in Figure 3, baseline and endline audits of 172 PPMV outlets documented significant increases in the availability of key childhood medicines and commodities at PPMV outlets.

Figure 3: Stocks available on the day of inventory audit at 172 PPMV outlets in Ebonyi and Kogi states (Mar. to Nov. 2018). RDT = Rapid Diagnostic Test for malaria; ACT = Artemisinin Combination Therapy (for malaria); ORS = Oral Rehydration Solution



Building the Capacity of PPMVs to Deliver Quality iCCM Service

MCSP supported training for PPMVs in the assessment, treatment and referral of children under five with uncomplicated malaria, diarrhea and pneumonia. In collaboration with Kogi and Ebonyi SMOH, SPHCDA and PCN, MCSP supported iCCM training for 60 LGA-level trainers from health institutions, CBOs and PCN. The training of trainers used the FMOH training manuals and the iCCM addenda (CHMIS and Inventory Management of Childhood Medicines for PPMVs). These trainers then conducted step-down training with 862 PPMVs, using adult learning techniques and clinical practice sessions. Trained PPMVs stepped down their training to others in their respective outlets and during NAPPMED meetings.

Forging a Public-Private Partnership to Improve the Quality of PPMV Services and the Flow of PPMV Data

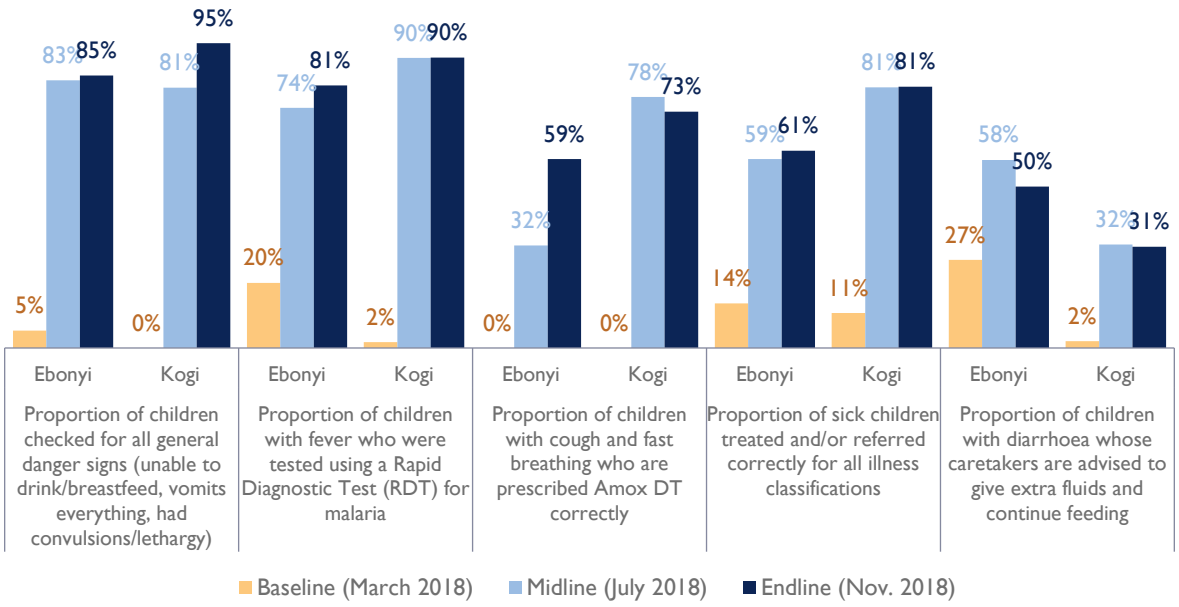
To ensure quality service delivery at PPMV outlets, MCSP collaborated with the FMOH, SMOH, National and State SPHCDAs, PCN, NAPPMED, LMCUs, LGA focal persons, and Ward Development Committees to design and introduce a joint public-private sector supervision and on-the-job mentoring system. This model engaged and built the capacity of the public sector's paid community health extension workers and PPMV peer supervisors to mentor and monitor individual PPMV. It also ensured that data flowed from the community to the DHIS2 platform. Key components of the approach included:

- Harmonization of the national iCCM Periodic Supervision Checklist and existing PCN and NAPPMED inventory management and monitoring tools to create a joint checklist that was used to collect data, report on PPMV activity, monitor commodity availability, and facilitate resupply.3
- Use of the FMOH's CHMIS, national iCCM tools, and existing reporting structures to monitor and report on the work of the PPMVs.
- Provision of continuous feedback at multiple levels, including: 1) on-the-spot feedback and on-site mentoring during supervision visits; 2) discussion of findings from supervision/ mentoring visits during monthly PPMV meetings; and 3) sharing of experiences, feedback, and institutionalization of the peer-assistance mechanism during quarterly state-level quality improvement meetings.

EQuiPP's Promising Results

By Jul. 2018, EQuiPP had improved the capacity of the 862 trained and supported PPMVs at 682 PPMV outlets to provide quality iCCM services, and these improvements were sustained when measured again in Nov. 2018. EQuiPP's impact on PPMV knowledge and practice was evaluated through direct observation with clinical re-examination at baseline (Mar. 2018), midline (Jul. 2018) and endline (Nov. 2018). The findings from the assessments show that the proportion of sick children assessed for danger signs, tested for malaria, and treated and/or referred correctly based on their illness classifications increased significantly after the introduction of the EQuiPP approach, as did counselling practices (see Figure 4).

Figure 4: Quality of assessment, treatment and counseling for sick children under five years of age at 176 PPMVs before and during EQuiPP implementation (MCSP Nigeria program data from 88 PPMVs in Kogi and 88 PPMVs in Ebonyi states)



[3] The tools for inventory management included tally cards, stock transaction records and stock reconciliation records, as outlined in PCN's Continuing Education Module for PPMVs.

Sustainability	
Kogi State	**Ebonyi State**
• SPHCDA committed to pay a **transportation & communication stipend** of 1,000 naira per month to all PHC and PPMV supervisors to enable them to provide supportive supervision to PPMVs. • SPHCDA planned to continue to print **iCCM tools**. • NAPPMED is liaising with LGA iCCM trainers to explore the possibility of **continually training and re-training PPMVs** at minimal cost to NAPPMED.	• PCN made the **supervision of PPMVs by NAPPMED** one of its core responsibilities. • After MCSP trained four PCN Pharmaceutical Inspectors to be iCCM trainers, **PCN integrated iCCM into the continuing education program** (CEP) curriculum for PPMVs. 2018 was the first year iCCM was part of the CEP and it is expected to remain part of the training. • LGA authorities set a **schedule for PHC supervisors' participation** at monthly PPMV meetings. As an incentive to participate, supervisors are engaged as ad hoc staff for other health programs, such as immunization. • SMOH was **negotiating with a local drug manufacturer** to provide EQuiPP supervisors with promotional materials (e.g., t-shirts and caps) and ACTs and AmoxDT at lower rates.

After less than a year of implementation, partners in both States recognized the promise of the EQuiPP approach and showed strong commitments to sustaining it beyond the life of MCSP, as shown above: MCSP presented findings and lessons learned from the EQuiPP approach during the national review of the iCCM National Guidelines in Lagos in Nov. 2018. This resulted in extensive discussions and a decision by the FMOH to consider trained PPMVs as community resource persons (CORPS) and official iCCM service providers.[4] This was reflected immediately in the draft updated iCCM National Guidelines and national iCCM training materials.

Government Health Facilities - Strengthening Systems and Care for Sick Children

MCSP invested in capacity building and systems strengthening to improve the quality of care provided to sick children in the 119 primary health care (PHC) facilities that received MNCH assistance in Ebonyi and Kogi states. MCSP used Nigeria's IMCI training modules, job aides and quality standards in this work.

Human Resources: Strengthening the Clinical Competencies of Providers

Although PPMVs have the potential to dramatically improve outcomes for sick children, many caregivers will continue to seek care at government-run PHC facilities and these facilities must be prepared to provide both primary and referral care. MCSP's baseline facility assessments showed a serious gap in the skills, equipment and supplies needed for child health services at many government health facilities in Ebonyi and Kogi states. To address these gaps, MCSP first supported the FMOH and NPHCDA to finalize the review, printing and distribution of updated national IMCI/PSBI training materials for in-service and pre-service training. In coordination with the SMOH, SPHCDA and LGA authorities in Kogi and Ebonyi, MCSP used these revised tools to strengthen the clinical competence of 246 frontline health

PPMV Salihu Jimoh assesses the nutrition status of four year-old Ali Nuhu in his shop as Ali's mother looks on. Okehi LGA, Kogi state, Nigeria. Photo credit: Kizzy Omo/MCSP

[4] PPMVs were previously recognized as CORPS in the 2012 *National iCCM Guidelines* but there was not universal support for this position within the Federal MOH; for example, the Director of Child Health did not publically recognize PPMVs as CORPS. This significant change in both perception and practice came after site visits by the Director of Child Health to PPMV outlets in Ebonyi state and after national and state level dissemination of the finding that PPMVs who have been trained in iCCM can provide quality care for childhood illnesses.

workers in the 119 MCSP-assisted facilities. To enable PHC staff to provide integrated case management for sick children, MCSP provided equipment and logistics support and bolstered the referral systems for complicated cases. For example, after identifying barriers related to appropriate case management of children with diarrheal disease, MCSP assisted the PHCs to purchase the basic equipment and supplies needed to re-establish on-site rehydration corners. MCSP also worked with stakeholders to establish a Tertiary Health Institution-based mentorship program to mentor and supervise IMCI-trained frontline health workers in the 119 focal PHCs. Finally, to enable institutionalization of IMCI pre-service education, MCSP trained 23 tutors from seven Basic Health Institutions and provided teaching aids to their institutions.

Supply Chain: Advocating, Developing Systems and Building Competencies to Improve MNCH Commodity Security

MCSP's baseline assessments showed extremely limited availability of Amox-DT and a lack of knowledge on the part of health providers about its use. MCSP advocated and provided continuous technical support to the FMOH Child Health Division in its efforts with donors to make essential child health commodities more available. In Kogi and Ebonyi states, MCSP also worked with the SMOHs to increase stakeholder engagement and supported the state LMCUs to streamline distribution of essential medicines procured by health programs such as the Saving One Million Lives initiative. MCSP advocated for state purchase of Amox-DT and Zinc with some success; supported capacity building for LGA-level LMCUs on supply chain management and logistics management information systems (LMIS); and, with the LMCUs, provided training and mentoring to improve the stock management and storage practices of health facility staff. Simultaneously, MCSP and LMCU staff improved data visibility and coordination on MNCH supply chain issues, developed new LMIS tools and job aids and used them to improve the ordering and inventory management skills of the LGA IMCI focal points and LMCUs, and thereby improve the integrity of MNCH products in warehouses and health facilities. Finally, MCSP led the integration of child health commodities into monitoring and supportive supervision visits and strengthened the SMOH's capacity to lead quantification and distribution planning for all essential maternal, newborn and child health and family planning commodities.

Information Systems: Piloting CHMIS Tools and Data Visualizations and Building the Capacity to Use Them to Solve Problems in Ebonyi and Kogi

MCSP provided technical support to improve the use of child health data for decision-making and strategic planning at national and state level. By piloting various CHMIS tools developed by the FMOH in the four EQuiPP LGAs, MCSP supported the FMOH to further develop and institutionalize their national HMIS data collection modules--including community LMIS and DHIS2 tools. Program partners trained and supported PPMVs to use these new tools, tracked their service data (which ultimately fed into a DHIS2 instance compatible with the national DHIS2), and used these data with stakeholders to solve problems, improve services and increase access to medicines from reliable sources. Finally, during monthly PPMV meetings, the EQuiPP partners developed PPMV capacity to use service and logistics data to manage their own shops. By developing and integrating the CHMIS and LMIS addenda into the iCCM curriculum, MCSP made it possible for the first time to capture private sector data from PPMVs, with the potential for it to be incorporated through public-sector HMIS data flows into the national DHIS2 database in the future. As part of the PPMV supervision sustainability plan, data from PPMV outlets in Kogi and Ebonyi will continue to be tracked and reported into the DHIS2 database after the close-out of MCSP.

Conclusions and Recommendations

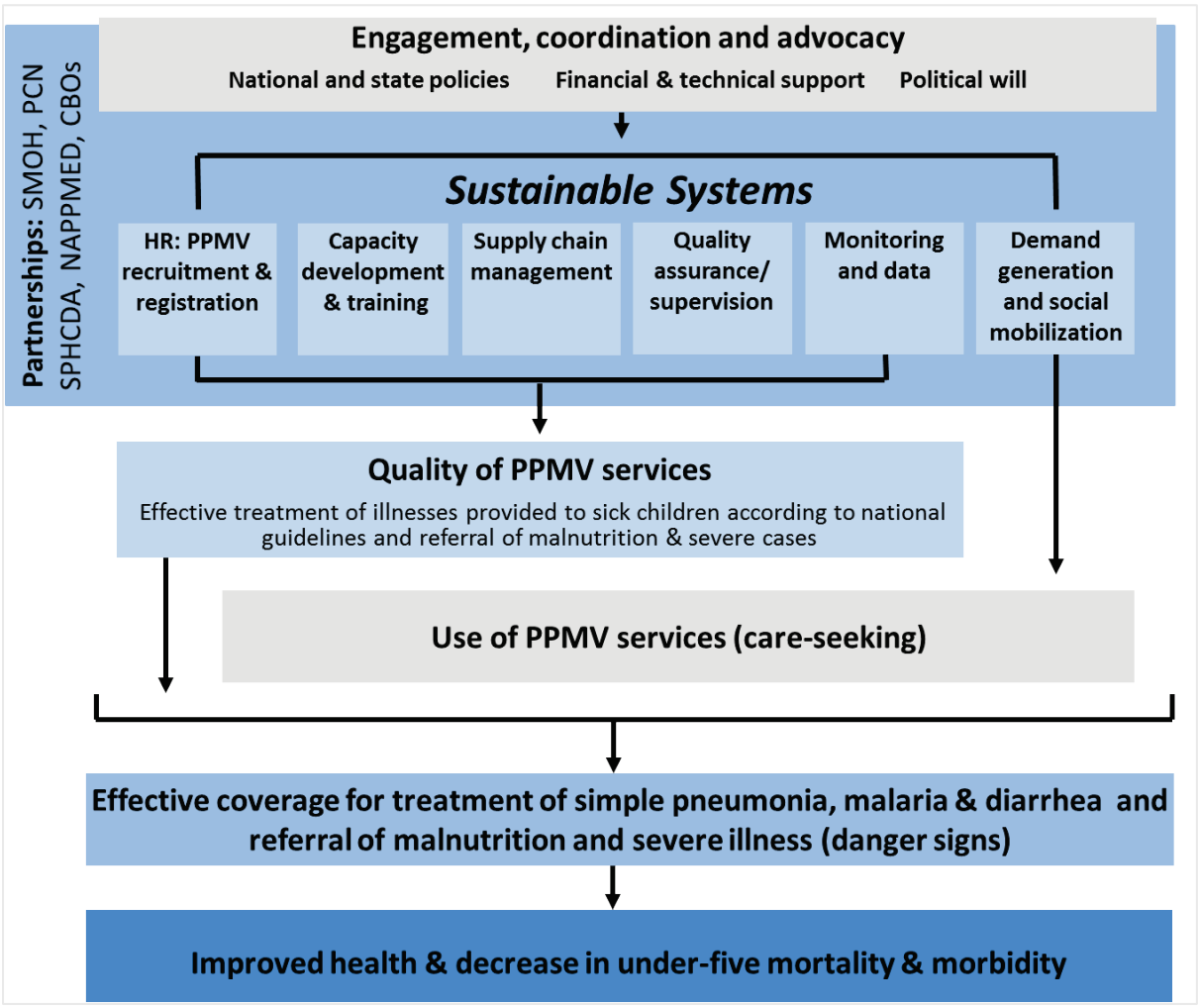
In Nigeria, PPMV shops are often the closest service provision outlets for caregivers of sick children and the first source of care. In many communities, they are the only available or affordable providers of care and medicines for sick children. Most PPMVs are untrained, unsupported, and provide low quality care. **Training and supporting PPMVs through mentoring and by ensuring that they have access to low-cost, high-quality medicines and commodities can transform them into CORPS and increase the population's access to quality iCCM services.** Although MCSP's implementation period was too short to be able to measure the effects on population coverage or mortality, all indications are that this approach would have a positive impact on under-five survival.

Recommendation: Health authorities at all levels should support and expand the EQuiPP approach to improve PPMVs' ability to provide appropriate assessment and treatment for uncomplicated childhood illnesses with quality medicines. Scale up of this intervention should be accompanied by a supervision, mentoring, monitoring and evaluation system that ensures that quality of care is maintained.

Recommendation: Local ownership and a comprehensive systems strengthening approach are necessary to achieve sustainable results. Projects should always aim to strengthen existing systems even when over the short term it may also be necessary to pilot new approaches. With enough money, time and people, almost all projects yield results. But, if local institutions are not fully engaged and the systems required are not in place, they may not be able or willing to sustain even the most promising results.

MCSP Nigeria achieved encouraging child health results: **service delivery at community and facility levels improved; health workers' capacity at these levels was strengthened; and access to quality, first line drugs increased.** To achieve these results, new health and logistics information systems were successfully piloted and existing information systems were strengthened. The program worked at national level to promote favorable child health policies and at state and local levels to institutionalize those policies and develop innovative public-private sector strategies to ensure the sustainability of the program's achievements.

Annex A: The EQuiPP Approach as Implemented by MCSP with all PPMVs in two LGAs in Ebonyi State and two LGAs in Kogi State.



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