USAID | DELIVER PROJECT
Final Country Report

Nigeria

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USAID | DELIVER PROJECT, Task Order 4

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USAID | DELIVER PROJECT, Task Order 7

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Abstract

This report summarizes the work carried out by the USAID | DELIVER PROJECT in Nigeria from 2006–2016. The project provided technical assistance to family planning; malaria; maternal, neonatal and child health; and tuberculosis programs to strengthen health supply chains and improve the environment for commodity security.

Cover photo: Community health workers packing LLINs for hard-to-reach facility in Nasarawa State.

USAID | DELIVER PROJECT

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Project Overview and Context

Project Overview

The USAID | DELIVER PROJECT (the project), in partnership with ministries of health and other organizations, improves health outcomes in developing countries by increasing the availability of health supplies. For more than 30 years, USAID has been a world leader in providing health commodities to field programs—a critical component of health program success.

With the goal of supporting programs designed to improve the health of Nigerians, the USAID | DELIVER PROJECT provided health commodities and technical assistance to Nigeria from 2006–2016. The project used best practices and innovative approaches to develop and implement robust logistics solutions; foster supportive commodity security environments; procure, ship, and deliver health commodities; and partner with local organizations to build sustainable capacity.

From the first national contraceptive logistics system assessment in 2002, it was determined that as many as 40 percent of clinics and hospitals across the country had frequent and extended stockouts of contraceptives for family planning. These stockouts were limiting the ability of the Ministry of Health to provide quality family planning services and they compromised the health outcomes of women and children throughout Nigeria.

Key challenges in the health supply chain included limited commitment and leadership from the government for maintaining evidence-based interventions to strengthen supply chain management; inadequate resources, particularly funding for procurement, transportation, and training; and not enough properly trained and motivated personnel.

As stakeholders realized the importance of strong supply chain management in the family planning program, USAID began promoting supply chain systems strengthening to address these challenges. This as a key intervention to supported other centralized national programs, notably HIV and AIDS, tuberculosis(TB), malaria; and maternal, neonatal, and child health (MNCH). With assistance from USAID and other donors, the Government of Nigeria set out to build public sector health supply chains to meet the health needs of its population.

The project led the country's first global Strategic Pathway to Reproductive Health Commodity Security Assessment and they supported the development of two national five-year contraceptive security (CS) policies, which strengthened family planning programs and improved contraceptive security overall.

Supply chain support was focused on systematically helping vertically managed public health programs to upgrade their ad-hoc supply management by integrating upstream and downstream information management for better supply chain decisionmaking. When possible, the project encouraged programs to consider integrating aspects of their supply chain, particularly warehousing and transportation.

The project worked with stakeholders to define not only the roles and responsibilities of the national programs for supply chain logistics functions, but given the decentralized, autonomous nature of the states, to define and support target states in achieving and monitoring effective last mile distribution.

At all levels of the supply chain, the project built human resource capacity, providing in-service training to more than 12,000 personnel. Institutionalizing pre-service training in 12 schools of pharmacy contributed to the long-term sustainability of the project's work.

Investment in Commodity Support and Technical Assistance

From 2006–2016, the project provided family planning and malaria commodities to Nigeria. From 2008–2016, the project shipped President's Malaria Initiative (PMI)-funded malaria commodities to Nigeria. These products—

- ensured that quality antimalarial medicines and malaria rapid diagnostic tests (RDTs) were available for distribution to approximately 3,700 health facilities in 11 PMI-supported states
- provided long-lasting insecticide-treated bed nets (LLINs) for mass campaigns in nine PMI-supported states and for routine distribution in 11 states
- enabled emergency distribution of LLINs to internally displaced persons at the request of the Mission in 2013 and 2015.

Shipments of contraceptives, HIV and AIDS commodities and other health commodities supported contraceptive social marketing and other key United States Government (USG) health initiatives in Nigeria.

Prior to 2007, funding for contraceptives was very limited in the public sector. The project successfully used national forecast and gap analyses in a coordinated effort with United Nations Population Fund (UNFPA) to advocate for increased contraceptive procurement funding by GON, Department for International Development (DFID), and other donors in support of public sector family planning (FP) programs. As a result, total contraceptive funding for the public sector increased significantly.

Key supply chain interventions included—

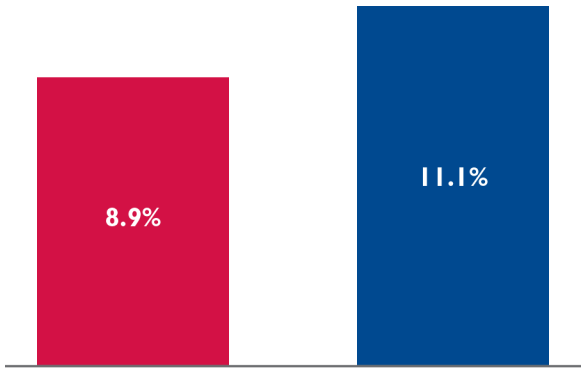
- forecasting and supply planning
- advocacy and resource mobilization
- system assessment
- design and implementation of the logistics management information system (LMIS) for increased data visibility and improved supply chain management (SCM) decisionmaking
- implementation and evaluation of last mile distribution models
- in-service and pre-service training
- private sector third party logistics provider (3PL) contracting
- warehouse infrastructure upgrades
- organizational development
- support for institutionalization of supply chain management at the state level through the logistics management coordinating units (LMCUs)
- stakeholder coordination
- CS policy development.

Family Planning

From 2003 to 2013 the contraceptive prevalence rate (CPR) increased from 8.9 to 11.1 percent (modern methods, DHS), covering more than1.6 million additional women. Between 2006 and 2016 project interventions contributed to an increased uptake in contraceptives through the public and social marketing sectors by providing contraceptives and supporting supply chain strengthening activities.

In the public sector, the project supported family planning in Nigeria by improving data for decisionmaking, by supporting better forecasting and supply plans; and by strengthening procurement and supply management coordination and tracking. The project also conducted last mile deliveries, training, and monitoring and supervision visits (MSV) to support service delivery points (SDPs).

These interventions led to increased funding for the procurement of contraceptives, reduced procurement lead times, reduced wastage and expiry, and increased order-fill rates from the central level. As a result, commodity availability improved and there was an increased uptake of contraceptives through the public sector.



Contraceptive Prevalence Rate

USAID | DELIVER PROJECT shipments contributed to **24.4 million** couple-years of protection (CYP)

6.2 million	Unintended pregnancies prevented
236,900	Infant deaths prevented
28,100	Maternal deaths prevented
172,000	Child deaths prevented

Malaria

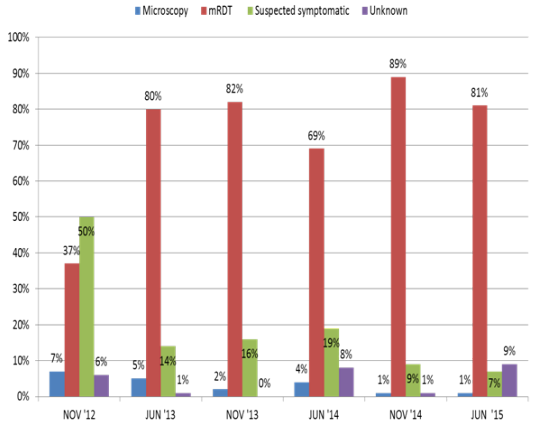
In Nigeria, 76 percent of the population (174.5 million) live in high malaria risk areas. To reduce malaria incidence and mortality, the project worked with key counterparts to strengthen supply chain systems and improve the availability of malaria commodities. The project procured and managed antimalarial medicines, rapid diagnostics tests (RDTs), and LLINs, thereby ensuring last mile distribution in 11 states.

The project also supported the National Malaria Eradication Programme (NMEP) to improve supply chain (SC) functions, including quantification, and monitoring and supervision at the national level. Better data from semiannual End-Use verification (EUV) surveys improved the ability of NMEP to initiate, coordinate, plan, and implement the national quantification of malaria commodities.

One of the biggest achievements of the President's Malaria Initiative (PMI) in Nigeria was supporting the shift from a symptomatic diagnosis of malaria to RDTs, especially for children under 5. Better diagnosis may contribute to more rational use of antimalarial drugs.

Malaria prevalence in children aged 6-59 months declined from 42 percent in 2010 to 27 percent in 2015. (NMIS 2015)

Malaria Diagnosis in Children under age 5



Source: PMI, bi-annual EUV Assessment (data from more than100 facilities from 11 PMI-supported states)

USAID | DELIVER PROJECT has procured commodities for Nigeria to

Protect against malaria with
32.4 million LLINs

Test 21 million
suspected malaria cases with RDTs

Treat 63.2 million
malaria cases with ACTs

Prevent malaria in pregnancy with
30 million SP tablets

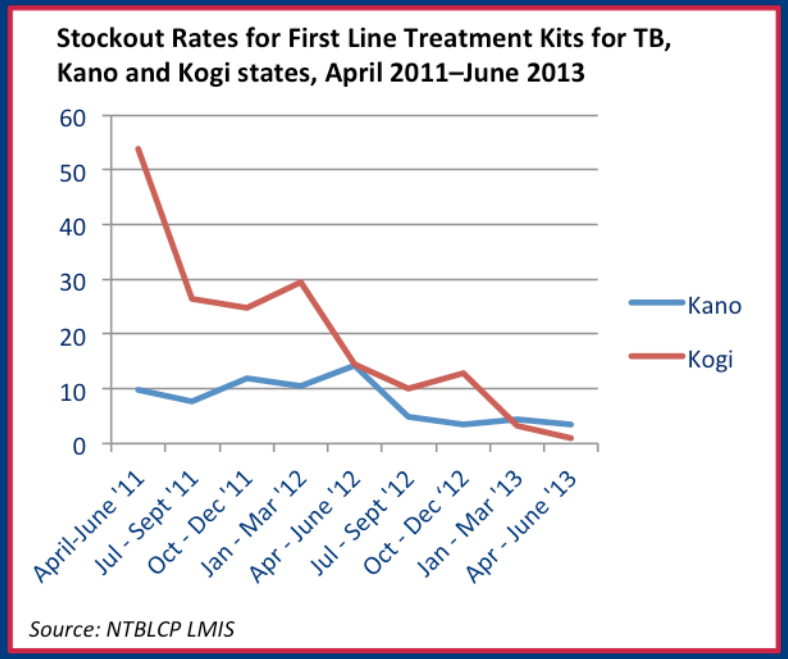
Tuberculosis

Tuberculosis (TB) remains a major public health challenge in the country. According to the World Health Organization (World Health Organization) TB report, Nigeria has the third highest TB burden in the world. Timely and consistent supply and delivery of TB commodities at directly observed treatment (DOT) sites is a key to the success of TB treatment, reducing the risk of drug resistance.

To improve commodity availability and strengthen the TB commodity logistics system in Nigeria, the project worked with the National Tuberculosis and Leprosy Control Programme (NTBLCP) to optimize and document logistics processes, build capacity in supply management, and deliver TB medicines and other supplies to eight states.

- Supported the national TB program to document processes for optimizing its multidrug-resistant TB (MDR TB) commodity logistics system. The draft standard operating procedure (SOP) was submitted to the NTBLCP.
- Trained more than 1,200 DOTS providers between 2010 and 2013 on the use of the TB commodity logistics system SOPs.
- Provided support to the NTBLCP in 2016 to mentor over 3,000 DOTS providers and microscopists in the 12 priority states selected by the USAID Challenge TB project on commodity management, data accuracy, and timeliness in reporting.
- Between 2012/2013, trained 79 program managers on an electronic data management tool (PICKnPACK) developed by the NTBLCP.
- Trained 434 microscopists on the use of the TB commodities SOPs for managing reagents and slides.
- Organized quarterly last mile delivery of essential TB medicines to over 1,200 facilities in eight supported states (Akwa Ibom, Benue, Cross River, Delta, Kaduna, Kano, Kogi, and Lagos). Stockout rates at the beginning of support in April 2011 was as high as 53.8 percent. By June 2013, when support ended, stockout rates had dropped as low as 1 percent.

Quarterly last mile deliveries led to a reduction in stockouts of first line treatment kits for TB



Capacity building initiatives enabled 4,713 TB health and logistics personnel to improve management of TB commodities

Maternal, Neonatal, and Child Health

In 2013, Nigeria had a maternal mortality ratio of 576 maternal deaths per 100,000 live births, the 14th highest maternal mortality rate in the world (Estimates by WHO, United Nations Children's Fund [UNICEF], UNFPA, and the World Bank). Many maternal neonatal and child deaths can be prevented using the existing, proven, cost-effective interventions, such as birth spacing, antibiotics, neonatal cord care, and drugs that prevent and treat postpartum hemorrhage (PPH).

The project supported these interventions with the following activities:

❑Provided family planning and MNCH commodities to health facilities in eight states through a pilot and the roll out of two last mile delivery systems.

❑Helped avert maternal and neonatal deaths by providing technical assistance to USAID/Targeted States High Impact Project (T/SHIP) to develop and roll out a community-based distribution model that provided chlorhexidine and misoprostol to women who deliver at home in Sokoto and Bauchi states.

❑Supported the establishment and implementation of the Subsidy Reinvestment and Empowerment Programme's (SURE-P) MNCH supply chain component.

❑Supported Kogi, Bauchi, and Sokoto states in planning and budgeting for MNCH commodities through quantification of MNCH commodity requirements for public sector services.

❑Tripled storage capacity for vaccines, medicines, and supplies for MNCH in four of the National Primary Health Care Development Agency's (NPHCDA) six warehouses by refurbishing the storage spaces (see sidebar).

Supporting SURE-P

The Nigerian government's SURE-P program distributes MCH commodities to 625 health SDPs nationwide. In support of the program, the project—

- ensured that SURE-P sites offer comprehensive MCH services, including family planning
- improved SCM capacity in SURE-P management and staff
- quantified SURE-P commodities
- designed a logistics system to manage MCH commodities
- assessed and refurbished zonal warehouses.

Warehouse improvements tripled storage capacity at four regional NPHCDA warehouses

Minna before…
(0 defined dry store pallet locations)

Minna after…
(624 defined dry store pallet locations)

Technical Assistance

Technical Assistance Overview

The USAID | DELIVER PROJECT, in partnership with ministries of health and other organizations, improves health outcomes in developing countries by increasing the availability of health supplies.

Using best practices and innovative approaches, the project develops and implements robust logistics solutions, fosters supportive commodity security environments, procures and ships health commodities, and partners with local organizations to build sustainable capacity.

In Nigeria, these interventions included—

Strengthen Logistics System Performance

- Improving Supply Chain System Design
- Conducting Last Mile Distribution
- Evaluating Distribution Systems

Increase National Commitment to Commodity Security

- Strengthening CS coordinating mechanisms
- Facilitating development of Commodity Security Policy
- Mobilizing resources for Health Commodities

Build Sustainable Capacity

- Strengthening systems for routine performance monitoring
- Strengthening Human Resources in Health Logistics through Pre-Service Training and In-Service Training
- Engaging private sector (3PL) for warehousing and distribution
- Refurbishing warehouses to increase storage space for public sector health commodities.

Strengthen Logistics System Performance

To improve health outcomes in the countries where we work, the USAID | DELIVER PROJECT increases the availability of health products by strengthening supply chains and creating global commitment. These efforts are guided by the project's supply chain integration framework.

In the public health setting, an integrated supply chain links everyone involved in managing essential health commodities into one cohesive supply chain management organization, ultimately helping clients access quality healthcare services and supplies.

Improving Supply Chain System Design

By strengthening the health supply chain system design for primary healthcare programs, stockout rates for key health commodities declined between 2006 and 2016.

Prior to project interventions, the public sector family planning supply chain performed poorly and was underfunded. There was little or no visibility of critical logistics data, leading to stockouts, expiries, and an inability to scale up services.

As additional health programs accessed project support (TB and Malaria in 2010, MNCH in 2011) and common problems were observed, it became clear that fundamental restructuring was needed to ensure sustained performance improvements.

The project worked closely with the Federal Ministry of Health (FMOH) and other partners to revise policies and procedures, and design and implement supply chain system solutions that improved data visibility; reduced expiry and wastage of drugs; reduced stockout rates; and, ultimately, increased the reliable availability of health commodities.

The project designed and implemented the following supply chain system design interventions:

- Review and resupply meetings (RRM) last mile delivery system for TB supplies in eight states.
- RRM last mile delivery system for contraceptives in six states.
- Direct Delivery and Information Capture (DDIC) system for malaria, family planning, and MNCH commodities in four states.
- Logistics system with associated tools for MNCH supplies in one state.
- Community-based distribution system for misoprostol and chlorhexidine for home-based management of postpartum hemorrhage and cord care in two states.
- LMIS for malaria, in collaboration with Global Fund to Fight AIDS, Tuberculosis and Malaria and the National Malaria Control Program (NMCP), in 26 states.
- Bimonthly last mile delivery of malaria diagnostics supplies and medicines to 2,348 sites in seven states, at times including LLINs for routine distribution.

Program Achievements

The system design improvements enabled the following outcomes:

Increased LMIS reporting rates and enhanced visibility of logistics data

Improved data management and use at the central level

Reduced expiry and wastage of drugs

Reduced stockout rates for key health commodities.

For oral contraceptives, the stockout rate **declined from 66 percent in 2007 to 6 percent in 2016.**

Last Mile Distribution

Active distribution support at the state level increased access to health commodities at service delivery points

Family Planning Commodities

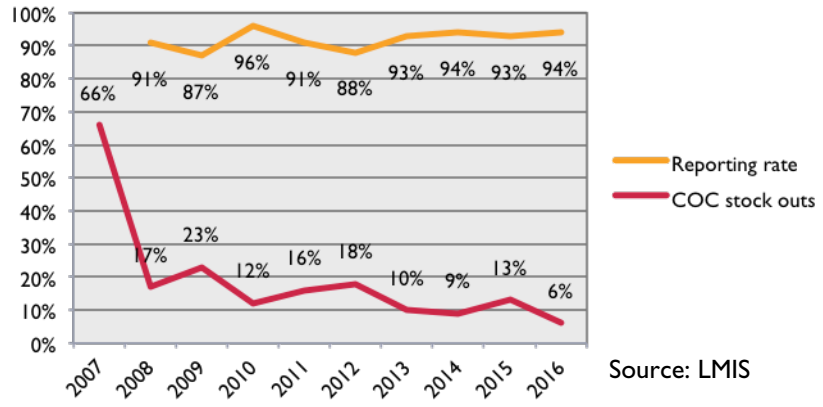
From 2006–2016, the project distributed contraceptives to a varying number of health facilities and states, including Kano, Sokoto, Bauchi, Nasarawa, Kogi, and Cross River, where stockout rates remained low. Through the review and resupply mechanism, the project supported an average of 850 SDPs every year. From 2012–2016, reporting rates averaged 92 percent. Over time, the project was able to successfully reduce stockout rates to below 10 percent.

The project also piloted models, such as the community-based distribution (CBD) system to reach households with targeted, lifesaving interventions to prevent millions of deaths from due to postpartum hemorrhage and neonatal sepsis in Sokoto and Bauchi states.

Malaria Commodities

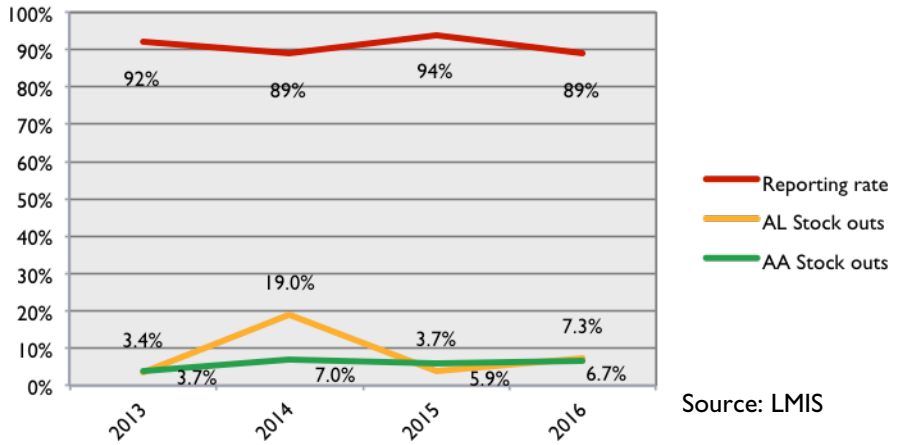
Prior to project interventions, free malaria medicines were not available through the public sector. The project distributed malaria commodities to an increasing number of health facilities: 862 in 2013 to almost 3,700 in 2016. In the 11 PMI states (Akwa Ibom, Benue, Bauchi, Cross River, Ebonyi, Kogi, Nasarawa, Oyo, Sokoto, Kebbi, and Zamfara), the project contracted for the distribution of goods through 3rd party transportation providers. Reporting rates averaged 91 percent, and stockouts averaged 8.4 percent for artesunate-amodiaquine (AS/AQ) and 5.8 percent for artemether-lumefantrine (ALu) over the life of the project.

Reporting and Stockout Rates for Combined Oral Contraceptives



Source: LMIS

Reporting and Stockout Rates for Artemisinin Combination Therapies



Source: LMIS

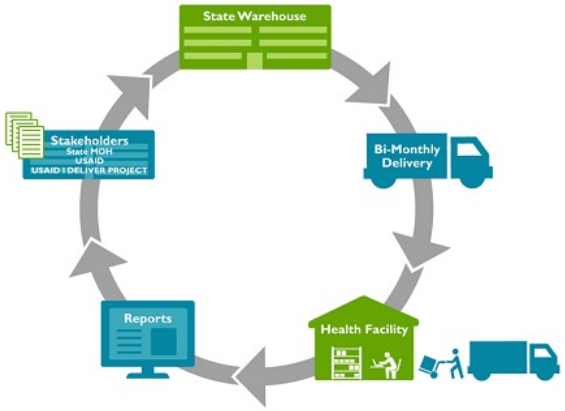
Evaluating Distribution Systems

Testing and evaluating different distribution models revealed evidence about the most cost effective logistics solutions

In FY2013, the project piloted the Direct Delivery and Capture (DDIC) system modeled after a vendor-managed inventory system in Ebonyi and Bau-chi states. In Ebonyi, the system reduced stockouts of contraceptives and other common health products from more than 70 percent to below 5 percent, after four consecutive supply trips.

After the one-year pilot phase, a cost evaluation study was conducted in five states in Nigeria where the DDIC operated; it was compared to other last mile distribution models in terms of stockout rates, start up and operating costs, scalability, and data quality. Of the models evaluated, DDIC had the lowest cost per cubic meter of product handled. Based on these positive results, two additional states (Sokoto and Zamfara) implemented the DDIC system. The DDIC now delivers malaria, family planning, and MNCH commodities to more than 1,200 health facilities.

DDIC is an effective model where there are passable roads and the possibility of optimizing truckloads. However, the needs of the program, the product specifications, and the geographic reality must drive system design.



Distribution System Performance March–April 2016

System	Stockout Rate
FP RRM -COCs	6%
Malaria Last Mile Distribution – Antimalarials	7%
DDIC -Antimalarials	2.5%
DDIC -All contraceptives	8.8%

Increase National Commitment to Commodity Security

Commodity security exists when every person is able to choose, obtain, and use quality contraceptives and other reproductive health products whenever they need them. Strong supply chains alone cannot ensure availability of, and access to, these commodities.

To help countries create an enabling environment for reproductive health commodity security, the USAID | DELIVER PROJECT, in collaboration with its counterparts, undertakes a variety of policy and advocacy activities at the global, regional, and country levels.

Commodity Security Policy and Advocacy

Policy and advocacy activities spurred policy changes that supported contraceptive availability and increases in couple-years of protection

In 2009, the project conducted the country's first global Strategic Pathway to Reproductive Health Commodity Security (RHCS) Assessment, which was a follow up to the contraceptive security assessment conducted in 2003. The 2009 RHCS assessment informed the design of interventions by the project, the FMOH Family Health Division, and other partners.

The 2009 assessment identified a variety of gaps that were blocking impeding the provision of reproductive health (RH) services. For example, while there was a national policy to increase use of long-term methods, there was very little funding for the methods included in existing expansion plans.

To improve the country's commodity security, the project conducted policy and advocacy activities, including national-level contraceptive security workshops, which resulted in national five-year CS policies (2006–2010, 2011–2015).

The 2011-2015 CS policy identified lead partners and financial requirements for the family planning program; it allowed partners to advocate for and justify interventions in supply chain operations support, as well as funding for commodities.

The 2011–2015 policy included lifting barriers that were preventing community health extension workers (CHEWs) from providing injectables and for training service providers on long-acting reversible contraceptive (LARC) methods nationally.

The policy also eliminated cost recovery in the public sector, making contraceptives free of charge to public sector clients.

Following these changes in policy, couple-years of protection (CYP) generated by the public sector in Nigeria increased from about 500,000 in 2011 to more than 2 million in 2012. Improved availability of contraceptives following the 2010 increases in funding, as well as the elimination of cost recovery, are likely linked to this increased CYP.

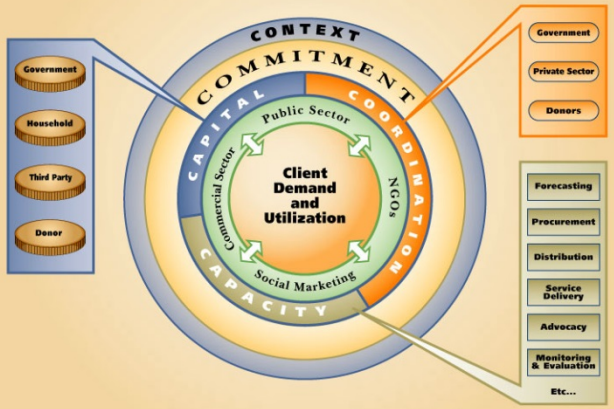
The FMOH, DFID, and UNFPA continued to act, based on the 2010 policy work. By 2014, significant advances had been made to implement a policy that enabled trained CHEWs to provide injectables and implants; national training of service providers on LARC was largely completed. These changes, in turn, contributed to increased requests for implants by state family planning coordinators, which contributed to the increase in CYP produced by the public sector from 2 million in 2014 to 3.5 million in 2015.

Annual measurement of progress through the project-generated CS Indicators provided feedback to key stakeholders on implementation of these policies over time, improved visibility, and helped strengthen Nigeria's CS status.

Key Achievements

National-level contraceptive security workshops resulted in national five-year CS policies, 2006–2010 and 2011–2015

An RHCS assessment informed the design of interventions by the project, the FMOH Family Health Division, and other partners.



Creating and Sustaining Mechanisms for Supply Chain Coordination

Logistics Management Coordination Units worked across health programs to improve data visibility, facilitate coordination, and ensure last mile distribution.

From 2006 to 2016, the project collaborated with country counterparts to elevate commodity security through interventions targeting national, multi-sectoral coordination, and commitment to public sector family planning.

In 2010, the project identified the fragmentation of stakeholder support and the lack of a systematic process to identify and resolve commodity security issues as key bottlenecks to ensuring commodity availability.

In response, the project helped create mechanisms to improve coordination, reduce redundancies, and harness the comparative advantage of the key stakeholders.

In the 11 PMI priority states, the project created LMCUs that were integrated across health areas. The LMCUs were established at the state level to strengthen management and coordination of supply chain activities across health programs, including shipment and distribution plans, routine monitoring, and data collection. The GFATM used the same model to implement LMCUs in the 24 states where they work.

The project collaborated with the FMOH, UNFPA, and other donors to clarify procurement planning, which increased contraceptive SC visibility and reduced lead time.

The project initiated and supported procurement and supply management (PSM) subcommittees for family planning that meet regularly to coordinate efforts and resolve supply chain issues, and implement and monitor activities: procurement of commodities, commodity security, capacity building, inventory control, assessments, etc.

The Malaria Procurement and Supply Management Working Group was established in 2010 to enable NMEP, GFATM principal recipients, the World Bank, and other stakeholders to coordinate procurements. The project facilitated this collaboration and contributed long-term forecasts, supply plans, and data management, which enabled the partners to gain critical visibility of the supply chain.

Technical assistance to stakeholder coordination ensured that supply chain issues were identified and resolved through activities, including pipeline and procurement lead time monitoring, SC assessments, and LMIS SOP review.

The project's interventions enhanced coordination among donors, particularly through the quarterly Procurement Planning and Monitoring Report, which was produced for both family planning and malaria commodities.

Contraceptives Procurement and Supply Management Sub-Committee Results

The Contraceptives PSM Sub-Committee, which was institutionalized within the MOH, held monthly meetings that enabled them to achieve significant results between 2012 and 2014:

- Contraceptive procurement lead time dropped from 12–18 months to 6 months
- Stockouts were eliminated at the central contraceptive warehouse between December 2012 and May 2014
- Adequate financing pledged by government and donors for contraceptive procurement with faster release of funds
- Timely ordering of contraceptives, based on an integrated supply plan
- Potential shortages flagged with steps taken to mitigate potential stockouts
- Shipments tracked from the time orders are placed until they are delivered to the warehouse
- The average order fill rate for contraceptives increased from 53 percent in 2011 to 94 percent in 2015.

Forecasting and Supply Planning

Forecasting and supply planning provided programs with an evidence base to identify gaps and mobilize financing for commodities

Prior to the project intervention, commodity procurement and supply was based on available funding; not demand—nor and nor was it informed by logistical considerations or data. There was no coordination among stakeholders on forecasting and supply planning.

The project initiated and supported coordination and quantification of health commodities, including the country's first family planning, MNCH, and malaria annual, five-year national quantification exercises for resource mobilization, in addition to separate project and state-specific quantifications for resource management and procurement planning.

The project established national quantification sub-committees by program and built capacity for forecasting, supply planning, and pipeline monitoring.

In Sokoto and Kogi states, the project developed multi-year plans for state-procured MNCH commodities.

Technical support was provided to the NMEP for bi-annual national quantification of malaria commodities and the national malaria quantification guideline was reviewed and updated.

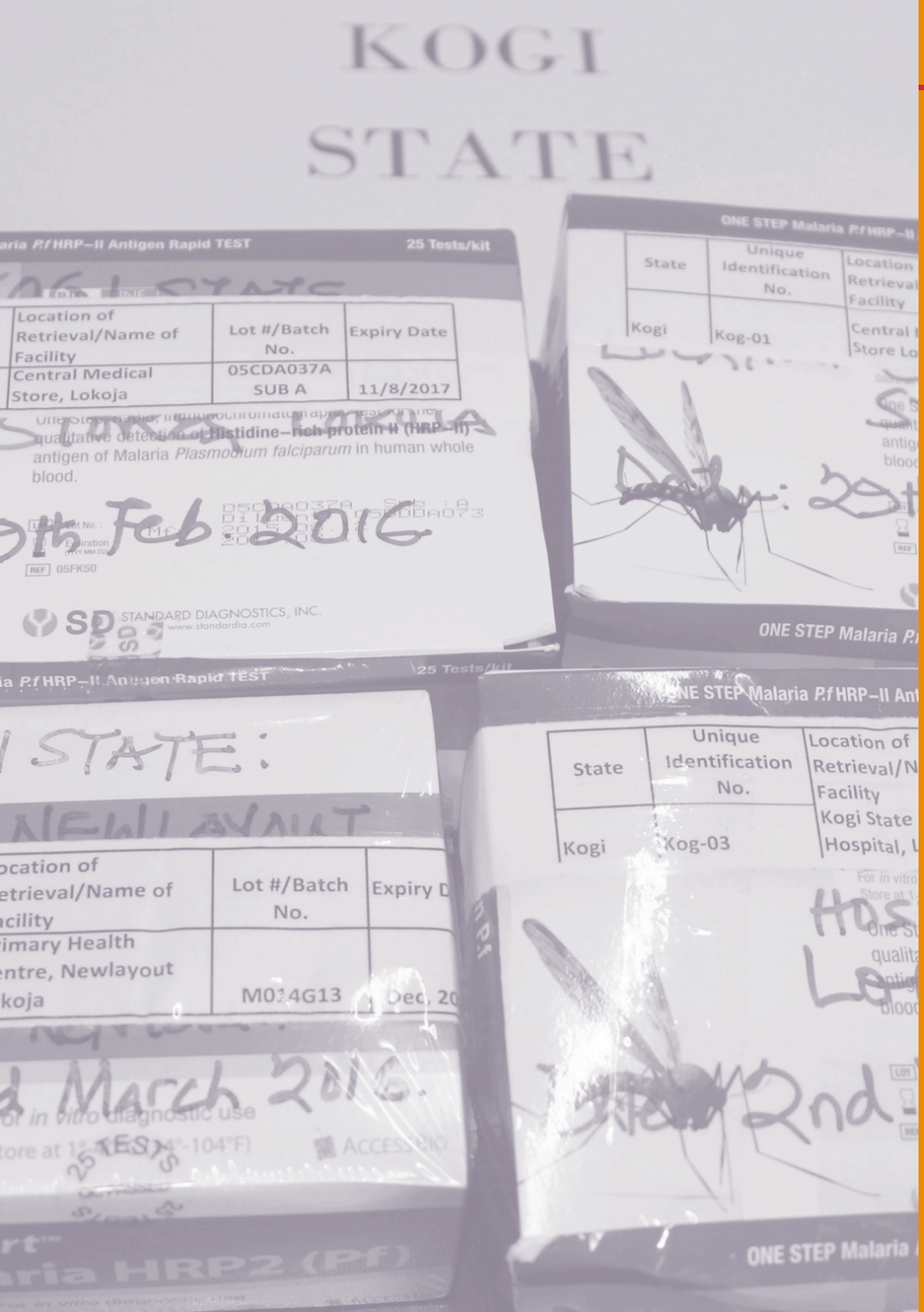
Quantification and coordination outcomes:

- commodity requirements estimates available to all stakeholders to identify supply gaps and mobilize resources
- improved capacity for accurate forecasting and procurement planning
- evidence base for advocacy and securing funds for commodities.
- quantification findings used for advocacy with key stakeholders to increase the level of funding for all commodity groups, resulting in improved availability of commodities.
- justification for the release of allocated Government of Nigeria (GON) funding.

Mobilizing Funding for Contraceptives

Public sector annual contraceptive funding increased from about $2 million in 2010 to over $10 million annually over the past 5 years.

From 2002, the public sector's family planning program depended entirely on donations, totaling about $2 million per year. In 2010, after advocacy efforts made by USAID, UNFPA, and DFID, which were supported by evidence developed by the project, donors increased public sector contraceptive funding commitments from $2 million/year to $10 million/year for 2010 with similar requirements projected for future years incorporated into the National Reproductive Health Commodity Security Strategy. The project supported the GON by coordinating the development of multi-donor basket funding for public sector contraceptives, based on data-driven forecasts; by 2012, the GON itself released $2 million for contraceptive procurement.



Build Sustainable Capacity

An essential component of a robust health supply chain is the staff that implements the logistics tasks. To run effectively, public health supply chains require motivated, trained, and skilled staff with competency in the various essential logistics functions and who are also empowered to make decisions that positively impact health supplies and supply chains.

The goal of the USAID | DELIVER PROJECT's capacity building activities was to strengthen human resources (HR) in public health supply chain systems in the developing world. A focus on developing a superior workforce allows organizations and individual staff to accomplish their customer service goals, ensuring higher performance among public health personnel and, therefore, increased availability of contraceptives and other essential health products.

Strengthening National Health Supply Chain Capacity through Pre-Service Training and In-Service Training

Capacity building efforts for organizations and individuals improved supply chain performance and increased sustainability in the SC workforce, improving commodity availability.

To run effectively, public health supply chains require motivated, trained, and skilled staff with competency in the various essential logistics functions, and who are also empowered to make decisions that positively impact health supplies and supply chains.

In Nigeria, the project found that chronic shortages of personnel to perform critical SC functions contributed to poor SC functioning and chronic stockouts.

The project and the Supply Chain Management System (SCMS) supported comprehensive efforts to strengthen supply chain workforce performance management, introduce organizational development, and implement system performance monitoring to increase the capacity of local SC partners. Training on key SC functions, including quantification, procurement, and logistics management SOPs standard operating procedures, were incorporated into in-service training curricula in the family planning, TB, and malaria eradication programs.

Comprehensive training for logistics personnel and health providers in Nigeria's 36 states complemented system design optimization interventions. Training enabled expansion of services: the project's support for the family planning program grew from 330 to 2,000 sites. With project support, malaria commodities became available at more sites—an increase from 86 sites to almost 3,700 sites in the 11 PMI priority states.

In addition, monitoring and supportive supervision structures were strengthened to enable the states to manage these systems through the LMCUs. This substantially increased capacity for on-the-job training (OJT) because of the increased number of trained supervisors at the state level.

In addition, the project collaborated with SCMS to institutionalize pre-service training (PST) in supply chain management within 12 schools of pharmacy. PST provided future pharmacists and community health extension workers with a SC skill set needed to understand and perform key SC functions.

Human Resource Capacity in Supply Chain

Pre-Service Training

More than 1,900 pharmacists who graduated from 12 schools of pharmacy received PST in SCM. By incorporating basic supply chain knowledge into PST, the project built sustainability for the SCM workforce.

In-Service Training

More than 12,000 personnel received competency-based training in various aspects of SCM. Of these students, more than 100 became master trainers who lead step-down trainings for facility staff.

Monitoring and Supervision Visits

Monitoring and supervision visits enabled health facilities to manage health commodities more effectively

In response to infrastructure and human resource gaps at health facilities, the project developed SOPs for SCM, trained personnel, and instituted regular MSVs designed to improve logistics performance for all the supported health programs.

Support provided during supportive supervision included mentoring and training GON staff on how to conduct MSVs, how to use SOPs and checklists, and scheduling routine MSVs. MSVs provided facility personnel with OJT/mentoring and immediate opportunities to initiate corrective actions to improve performance.

Examples of project inputs supporting MSVs included:

- ❑ MSV visits to 654 health facilities across 230 local government areas LGAs in the 11 PMI states in support of the NMEP were conducted every two months.
- ❑ Staff placed in NMEP and all 11 TO7 supported states to support GON personnel by building their capacity to implement MCLS, capture accurate LMIS data, and ensure sound resupply decisions.
- ❑ Coordination and integration of the project-supported supply chain MSV with the T/SHIP health services capacity-building MSV in Sokoto and Bauchi states.
- ❑ Capacity building for national and state ministries of health in conducting MSV.

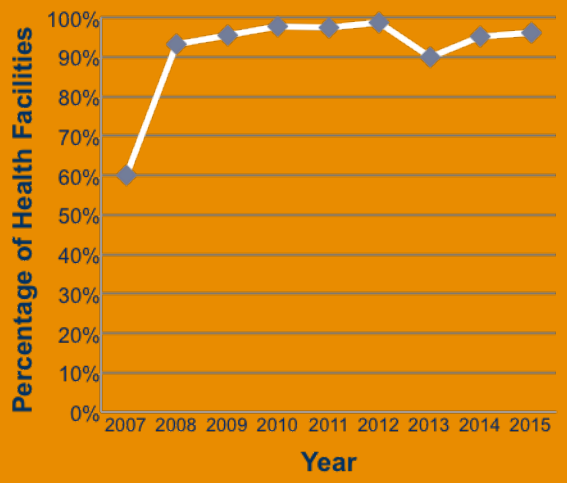
MSV and provision of routine feedback on key performance indicators (KPIs) led to improvements in the capacity of health facilities. These interventions enabled facilities to better perform inventory management, recordkeeping, storage practices, and compliance with national commodity management SOPs. They also significantly improved commodity handling at the facilities and logistics data visibility at the national level. MSVs enabled redistribution of commodities between facilities, averting stockouts and expiries. MSV reports were also used to advocate for improvements in infrastructure, security, and HR, where gaps were identified at SDPs.

Supply Chain Key Performance Indicators

The project established KPIs, as well as tools for monitoring them and sharing them for improved data visibility.

- Order fill rate
- Lead time
- Data accuracy
- Stockouts

Percentage of SDPs where malaria program resupply forms were used correctly



Third Party Logistics Contracting for Warehousing and Distribution

Accessing the strengths of the private sector enabled the government to expand services and use resources more effectively; it also built capacity in the private sector.

Public sector institutions are built for permanence, not flexibility. A government's warehouse or transportation assets (warehouses, trucks, drivers, dispatchers) are seldom used to capacity because they must be funded, managed, and maintained, regardless of how much they are used. Also, governments rarely have the capacity to outsource if demand exceeds supply.

Prior to project intervention, there were no regular private sector involvement in the public sector health supply chain for LMD in Nigeria. However, due to an increase in population and scale up activities to meet the needs of the population, the project assisted the FMOH in managing an unprecedented increase in the physical volume of public health commodities, particularly those supporting the family planning and malaria eradication programs.

In addition to public sector warehouse renovations undertaken in Bauchi, Minna, Enugu, Warri, and Kano, the project also modeled more innovative approaches by engaging commercial warehouse and transportation vendors, developing and sharing technical terms of reference with partners, as well as doing its own contracting for these services.

By 2016, the project had engaged seven 3PLs who were involved in warehousing and distribution of public health commodities. 3PL contracting not only encouraged and enabled private sector involvement in public health supply chain management but also demonstrated innovations in distribution management using mechanisms like DDIC.

Such contractual partnerships, over time, increase the capacity of the private sector to compete for and manage public sector service contracts and model a way forward for public sector managers to address capacity issues by articulating service contract requirements and managing private contractors.

The demonstrated effectiveness of the outsourced services and their increased availability may encourage the government to outsource these supply chain functions in the future.

Bi-Monthly Distribution via Contracted 3PLs

- ❑ Long-hauls of malaria commodities to 11 state CMSs
- ❑ Last Mile Delivery (LMD) of malaria commodities in 11 PMI states
- ❑ DDIC and RRM for family planning, malaria, and MNCH commodities in six supported states

- ❑ Routine LLIN resupply in 11 PMI states
- ❑ LLIN mass replacement campaigns
- ❑ Emergency LLIN distribution to internally displaced persons.

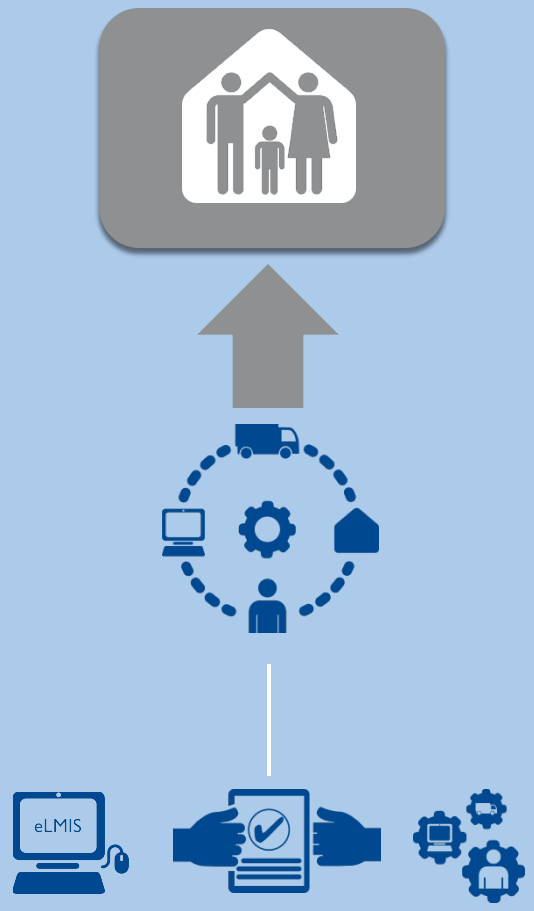
The Way Forward

The Way Forward

Despite increases in contraceptive use, as of 2013, 16.1 percent of all women in Nigeria still have an unmet need for family planning.[1] Improving access to modern methods of contraception will continue to be crucial for the Nigerian government's efforts to improve the health of women and children. Supply chain interventions by themselves are insufficient to increase modern contraceptive prevalence—service delivery and other complementary interventions must also be put in place.

Sustaining and improving on the project's accomplishments will require the following:

- ❑ Support the FMOH in defining a national supply chain strategy.
- ❑ Continue efforts to strengthen integration and coordination at the state level by strengthening the LMCUs and providing both advocacy and material support to ensure funding to implement their work plans and continued institutionalization.
- ❑ New technologies offering to improve supply chain visibility and integration across health programs should be modeled, piloted, and tested, and performance results disseminated.
- ❑ Mechanisms for pre-service training designed to increase the pool of healthcare providers with basic supply chain management knowledge before graduation should be expanded and strengthened.
- ❑ Review the national TB supply chain to implement best practices, continue to support improvements, and ensure that draft SOPs developed by the project are endorsed, updated as needed, and used consistently.
- ❑ Develop 3PL contracting and management capacity within government institutions.



Additional Resources

Acronyms

3PL	third party logistics provider
AS/AQ	artesunate-amodiaquine
AIDS	acquired immune deficiency syndrome
ALu	artemether-lumefantrine
CHEW	community health extension worker
CPR	contraceptive prevalence rate
CS	commodity security
CYP	couple-years of protection
DDIC	direct delivery and information capture
DFID	Department for International Development
FMOH	Federal Ministry of Health
GON	Government of Nigeria
HIV	human immunodeficiency virus
IST	in-service training
JSI	John Snow, Inc.
LLIN	long-lasting insecticide-treated bed net
LMCU	Logistics Management Coordination Unit
LMIS	logistics management information system
MNCH	maternal, neonatal and child health
MSV	monitoring and supervision visits
NMEP	National Malaria Eradication Programme
NPHCDA Agency	National Primary Healthcare Development
OJT	on-the-job training
PSM	procurement and supply management
PST	pre-service training
RRM	review and resupply meeting
SC supply chain	
SCM	supply chain management
SDP	service delivery point
SURE-P Programme	Subsidy Reinvestment and Empowerment
TB tuberculosis	
T/SHIP	Targeted States High Impact Project
USG	United States Government
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund

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