



USAID/FOCUS REGION HEALTH PROJECT, GHANA

Technical Brief

'Early Warning System' for Health Commodities in Ghana

The USAID/Focus Region Health Project (FRHP), is a 4.5-year USAID funded project managed and implemented by JSI Research & Training Institute, Inc. (JSI) in partnership with World Education Inc., (WEI). USAID/FRHP works in close collaboration with the Ministry of Health (MOH) and the Ghana Health Service (GHS) to strengthen access to, and quality and use of maternal, newborn, and child health (MNCH), family planning (FP), malaria, and HIV services in the Western, Central, and Greater Accra Regions of Ghana.

USAID/FRHP's technical briefs share and highlight selected strategic approaches, innovations, results, and lessons learned.

INTRODUCTION

Ensuring the availability of health commodities at service delivery points (SDP) is an essential element of the health system. With the Government of Ghana and GHS making all efforts to meet Millennium Development Goals (MDGs) 4 and 5, avoiding disruptions in services due to stock-outs of essential health commodities is a key priority, but also a big challenge. Routine stock status reporting from GHS health facilities is low, with the result that timely data on the stock levels of essential health commodities at the facility, district, and national levels are not available for decision makers to act on, resulting in avoidable stock-outs of commodities in facilities.

A 2010 baseline survey¹ conducted by USAID/FRHP at a sample of 145 GHS health facilities in the Western, Central, and Greater Accra Regions indicated that stock-outs were common and significant. The survey revealed that within the six-month period preceding data collection, 76% of health facilities stocked out on at least one family planning method, 77% stocked out on malaria medicines, 52% stocked out on maternal, newborn, and child health (MNCH) commodities, and 54% stocked out of HIV commodities. The level of stock-outs was a significant barrier to the provision of quality health services.

OBJECTIVES & APPROACH

To address the lack of vital and current logistics data, USAID/FRHP and USAID | DELIVER, in collaboration with GHS, designed and piloted the Early Warning System (EWS) aimed at addressing the gap and thereby improving timeliness in decision-making. The operation of the system was expected to enable the GHS to reduce stock-outs and thereby ensure better quality health services. The pilot phase was implemented in all health facilities (closed to 90 hospitals, health centers, clinics, and community-based health planning and services compounds) in two districts in each of Greater Accra, Central, and Western Regions² and in 113 antiretroviral therapy (ART) facilities in the seven remaining regions of the country between June and December 2011.

The process began with the selection of a software development group, Dimagi, Inc. through a competitive process which

¹ Ghana Health Services, USAID Focus Region Health Project/JSI Research & Training Institute, Inc. (2010) Baseline Survey Report. FRHP, Ghana
² These are regions where the Focus Region Health Project provides comprehensive support and also referred to as "focus regions"

designed the electronic web-based system. An SMS aggregate company, SMSgh³, was contracted to acquire toll-free short codes that could work across the various telecommunication networks⁴ in order to avoid out-of-pocket costs to facility staff managing commodities who were expected to report by texting stock-status of commodities into the system on a weekly basis.

The commodity managers at health facilities were trained to send SMS reports on stock levels of tracer commodities using simple codes or abbreviations for commodity types and numbers/quantities available. These messages are received and routed through the EWS server, with the in-built software generating instant analysis and aggregating results on the website www.ewsghana.com. Program managers at central, regional, district, and even facility levels could therefore access these reports and other information available in the website and take actions to avoid stock-outs. For sustainability reasons, data inputs into the system relied on use of mobile phones already owned by health facility staff, rather than procuring new mobile phones which would have increased costs of implementation of the approach quite significantly and brought along additional burden of maintenance and transfers.

The EWS also provided automated SMS responses and alerts to commodity managers at the health facilities, and where there were stock-outs in any commodities, to the supervisors in charge of the facility as well. This was possible because the required minimum or maximum levels of commodities were pre-established earlier in the system based on calculations provided by the facilities themselves on their regular or existing consumption patterns. The website also had a feature to display product availability by location on maps.

By logging on to the system, managers could immediately see analyses on the rates of reporting by facilities, availability and distribution of stocks of commodities under specific program areas at the facilities, and even the respective regional medical stores from where facilities order their stocks.

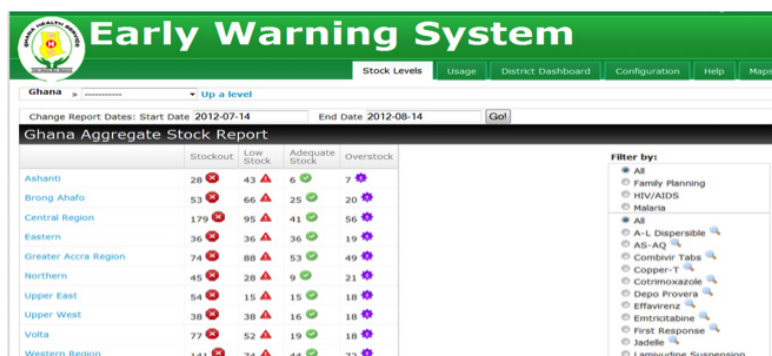
KEY ACTIVITIES

Training for commodity managers at the service delivery points was conducted from April-June 2011. The training covered an overview of the EWS objectives and steps in usage of the system, with particular emphasis on SMS reporting. Participants were also given a refresher course on logistics management, covering the keeping and updating of inventory control cards, the determination of maximum and minimum stock levels, and how and when to place orders (requisitions).

Key managers at the regional medical stores (RMS), district health directorates (DHDs), regional health directorates (RHDs), and central level programs were also oriented to the functioning of the system to enable them to view data reports made by the service providers, query any adverse stock information, and initiate responsive measures.

Effective running of the EWS was ensured through regular remote monitoring by USAID/FRHP, and GHS staff. The remote monitoring enabled quick address to challenges observed with the functioning of the system, such as non-reporting, late reporting, and incorrect entry of commodity codes. There were also direct monitoring visits conducted by USAID/FRHP, USAID | DELIVER, and GHS teams to some of the EWS facilities (50% in the case of focus regions) during which checks on logistics management information system (LMIS) practices, correct use of LMIS tools, and EWS data correlation with on-the-spot inventory checks were completed. The monitoring teams also provided technical support to correct data discrepancies and performance gaps.

An interim evaluation or assessment⁵ of the EWS was conducted at end of the pilot period and the findings disseminated at



³ SMSgh is a local company established in 2005 and providing SMS messaging and content aggregation services.

⁴ MTN, Vodafone, Airtel and Expresso

⁵ Ghana Health Services, USAID Focus Region Health Project/JSI Research and Training Institute inc. and USAID/DELIVER/JSI, 2012, Supply Chain Early Warning System Assessment Report, Accra, Ghana

the GHS Senior Managers' Meeting in November 2012. The assessment provided evidence that the EWS was functioning well by providing current stock status for management purposes, had contributed to increased use of stock record keeping of cards and regular stock taking thus avoiding stock outs. As a result of these positive outcomes, the GHS further collaborated with USAID/FRHP and USAID | DELIVER to expand the EWS to cover additional districts reaching over 400 health facilities in 33 districts in the three focus regions and 225 ART and prevention of mother-to-child transmission (PMTCT) sites across the rest of the country.

RESULTS

The EWS assessment established that weekly reporting rates on stock levels by facilities to the website were high. The average weekly reporting rate of 84% indicated that stock status information was largely available on the website for access

by interested health managers at any time. This result was also corroborated by findings made during monitoring visits to facilities which showed that website data were consistent with available hard copy records at health facilities in 70% of compared cases.

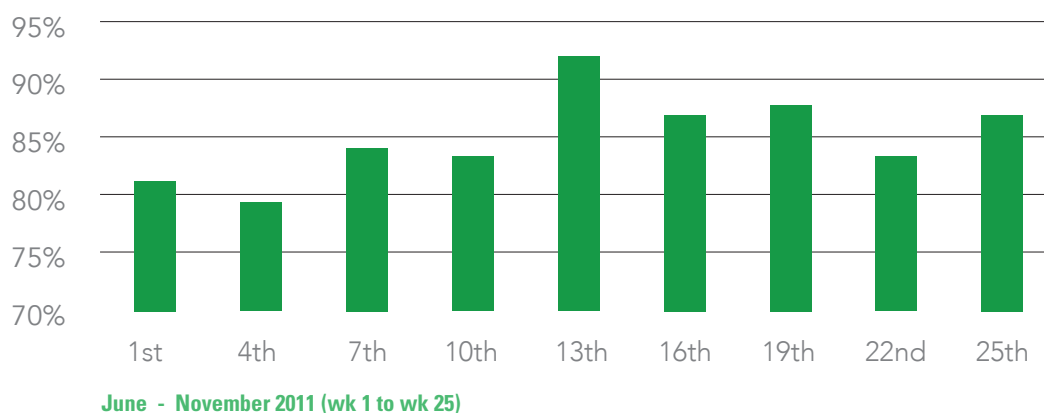
Improved use of LMIS tools, especially updating of paper records on commodities, including bin cards, was also evident at facilities. Over 90% of facilities participating in the pilot were using stock-keeping record cards for managing

family planning (FP) commodities at the time of evaluation in January 2012 and close to 80% of facilities had their stock cards updated. Another major development was that over 90% of EWS facilities established their maximum, minimum and re-order levels for commodities, which are critical coordinates for the LMIS and facilitates appropriate requisition and maintenance of adequate stock levels.

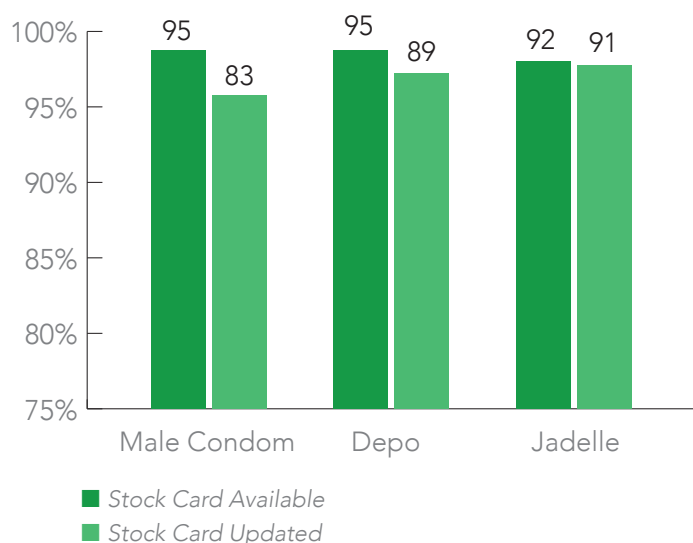
Reports for FP commodities were reviewed for stock on hand and stock received for selected months (July, September, and November 2011) during the EWS pilot period, and figures reported on FP reporting forms were found to be consistent with stock record card entries for the three selected FP commodities reviewed.

The ultimate goal of the EWS is to facilitate availability of commodities for service provision at the facility level at all times. The proportion of facilities reporting to have stocked out of any commodity reduced from 32% in July 2011 to 24% in November 2011 at the end of the pilot period. Still, a robust information system is just one component that contributes to product availability, with many other necessary variables, including transport availability, consistent product availability at the central level, proper budgeting, and forecasting. The increase in product availability would possibly have been even higher but for the erratic availability of some program commodities at the national level during the period.

Weekly EWS Reporting Rate by Percentage of Facilities ■ Series 1



Percentage of Facilities with Stock Keeping Records for FP Commodities in the Focus Regions



Assessment of the EWS pilot demonstrated its effectiveness in providing real time stock status for management use. Health facility staff consistently expressed interest and continue to use the system which so far operates at no monetary cost to them personally. The system has also proven beneficial in stimulating routine facility level stock management practices, particularly in the updating of stock record cards and regular stock-taking. There has been marked improvement in documentation as well.

CHALLENGES

Only 29% of health managers interviewed during the assessment reported they had ever logged onto the website and they gave no specific reasons for not doing so regularly. In consequence, timely and appropriate decision-making to address commodity stock-out was affected.

USAID | DELIVER conducted a simulation of EWS nationwide scale-up which is expected in the future when the GHS takes full operational control. It emerged clearly from this simulation that the existing software program may need to be replaced to meet the expanded capacity in order to function well.

Monitoring and supervision or follow up visits by the projects and GHS staff were more regular in the focus regions compared to other regions not within the control of USAID/FRHP. There is therefore the need to harmonize and synchronize the supervision schedules so as to have fuller appraisal of the EWS implementation as a whole and address emerging challenges.

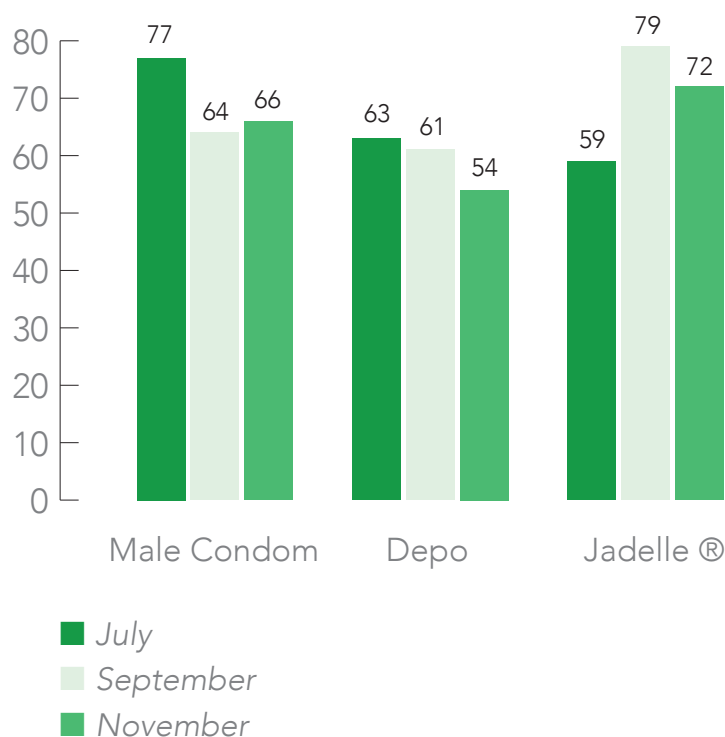
Two USAID projects collaborated to introduce and pilot the EWS. For one of these, USAID/FRHP, the cooperative agreement ends in February 2014, and hence the full responsibility of managing, maintaining, and handing over the operations of the system will have to be borne by USAID | DELIVER. It is not immediately predictable how this burden may impact the process.

LESSONS LEARNED & WAY FORWARD

EWS implementation has demonstrated readiness of frontline staff to adopt new technologies and to improve the supply chain system for effective services. This provides clear convictions on further expansion and mainstreaming with other e-health activities that are currently ongoing by other GHS partners.

EWS fits into the paradigm shift by the GHS in terms of computerization and automation of systems such as obtains with the DHIMS. In the immediate future, the GHS has consented to, and begun to scale up the EWS to additional districts whilst the broader e-LMIS concept gains further definition in a national logistics master plan in development. In the interim, the National TB Control Program has expressed interest in getting TB medications added to commodities in the EWS so that their stocks can be effectively tracked. Plans are well advanced for the training of service providers at TB DOT (Directly Observed Treatment) centers in all 10 regions of the country for implementation of this proposal.

Percentage of Facilities with Accurate Reports for FP Commodities, July, September, and November 2011



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USAID/FOCUS REGION HEALTH PROJECT, GHANA

Technical Brief

Improving GHS Capacity in Financial Management

The USAID/Focus Region Health Project (FRHP), is a 4.5-year USAID funded project managed and implemented by JSI Research & Training Institute, Inc. (JSI) in partnership with World Education Inc., (WEI). USAID/FRHP works in close collaboration with the Ministry of Health (MOH) and the Ghana Health Service (GHS) to strengthen access to, and quality and use of maternal, newborn, and child health (MNCH), family planning (FP), malaria, and HIV services in the Western, Central, and Greater Accra Regions of Ghana.

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INTRODUCTION

In developing and implementing activities, USAID/FRHP adhered to several key principles, including:

- » **Addressing sustainability in the design of activities.** USAID/FRHP planned activities in collaboration with the GHS to increase the likelihood that initiatives and processes that have produced results will be continued when external assistance ends.
- » **Ensuring that partners are accountable for results and for transparency.** USAID/FRHP invested considerably in developing the capacity of counterpart organizations to strengthen overall management, financial record keeping, and integrity of reporting.

Through USAID/FRHP, JSI established carefully structured financial sub-agreements with three regional health directorates (RHDs), several district management health teams (DHMTs) and multiple facilities to carry out activities. The direct allocation of funds required the GHS to assume greater responsibility for project implementation, financial management, and reporting than USAID bilateral projects have traditionally required.

OBJECTIVES & APPROACH

Consistent with the USAID Forward strategy¹, USAID/FRHP provided a significant amount of grant funding directly to the GHS, the project's main counterpart. To ensure compliance with US Government (USG) regulations and safeguarding of assets, USAID/FRHP provided technical assistance for financial management. Providing grant funds directly to the GHS helped support implementation of priority activities and strengthened the capacity of GHS RHDs and DHMTs.

Financial Management Training

Between 2009 and 2013, USAID/FRHP awarded 12 sub-grants to the three RHDs in the focus regions (Greater Accra, Central, Western) with a total value of over US\$4.3 million. In addition, USAID/FRHP awarded 42 sub-grants to DHDs, MHDs, and district/municipal hospitals and health facilities with a total value of approximately US\$1.14 million.

¹ <http://www.usaid.gov/usaiddforward>

To ensure that the sub-grant funds were well managed and to foster better understanding of USAID regulations, GHS regional and district staff participated in extensive technical assistance and training in financial management. Training included basic accounting/cost principals, allowable/non-allowable costs, procurement, CD/VAT (customs duty/value added tax), cost sharing principles, and reporting. Other workshops were held to cover the accounting, treasury, and finance and other financial monitoring guidelines followed by the GHS. In all, 1,168 GHS finance and program staff participated in the USAID/FRHP-supported trainings, including staff from RHDs, DHMTs, sub-districts, hospitals, community-based health planning and service (CHPS) zones, and private sector hospitals. USAID/FRHP also sponsored regional accountants to participate in the *International USAID Rules and Regulations Workshop* conducted by InsideNGO, USA, a group that works to strengthen the operational and management capacity of organizations in the global NGO community. Prior to granting funds to any GHS unit, USAID/FRHP conducted an assessment of the grantees' financial and organizational status. All sub-grant agreements include specified activities and timelines that were mutually agreed to by GHS and USAID/FRHP.

Performance-Based Financing (PBF)

In Ghana's health system, the traditional mode of operating has been for the central level to determine health initiatives and provide resources to the regions and districts to implement those initiatives. Resources at the local level are scarce, which can discourage development and implementation of local health initiatives. To strengthen the partnership between USAID/FRHP and the GHS as well as to foster a sense of ownership, strengthen the health system, and improve service quality, USAID/FRHP used sub-grant mechanisms to fund activities at regional, district and facility levels.

Performance based financing (PBF) has been successfully used in other countries and is based on a concept of financial support or awards to grantees that are contingent upon specific results or achieving objectives, thereby encouraging commitment, innovation, resourcefulness and efficiency. USAID/FRHP introduced PBF sub-grants in order to strengthen accountability and performance within the GHS.

RHD Sub-Grants: At the regional level, USAID/FRHP established sub-grants to provide funding for activities that the RHDs expected to implement during a given year and which were linked to the USAID/FRHP annual workplan. Each sub-grant defined the activities to be undertaken with USAID/FRHP funds and specified budget line-items. The RHD sub-grants averaged GhC 750,000 (approximately US\$365,000) each. USAID/FRHP made twelve sub-grants to the RHDs in Western, Central, and Greater Accra Regions over the four-year life of the project. Once a sub-agreement was executed, USAID/FRHP issued the RHD a portion of the total amount. On a pre-determined schedule, the RHD then submitted activity and financial reports to USAID/FRHP to document progress toward completion of activities and related expenditures. After reviewing and accepting the reports, USAID/FRHP issued additional funds. At the end of each year of sub-grant funding, a panel comprised of GHS and USAID officials was convened to review the RHD results. A scoring system was used to assess performance against weighted indicators. Depending on the total performance score, a region was eligible for a performance award, which ranged in value from US\$10,000 to US\$40,000. The awards were generally made as donations of equipment equivalent to the US dollar amount of the performance award that the RHD requested and USAID/FRHP procured.

District and Facility Sub-Grants: USAID/FRHP used a slightly different approach for district-level performance-based sub-grants (PBFs), which were issued to DHMTs and district and municipal hospitals upon submission of proposals to conduct health activities for which they did not have adequate funding. USAID/FRHP's regional coordinators and technical staff worked closely with potential PBF recipients to identify technical areas to be strengthened and determine the inputs necessary to attain desired results. Although USAID/FRHP staff provided assistance during the application process, one of the goals of PBF was to promote locally identified and innovative interventions to address local health issues. Thus, USAID/FRHP encouraged district and facility staff to develop their own proposals describing the health areas to be addressed, the desired outcomes and results, and the plan of action. Upon acceptance of a proposal, USAID/FRHP and the recipient prepared a detailed scope of work, expected results, indicators, data sources and budget. Performance targets and timeframes for completion were agreed upon, depending on the particular circumstances of the DHMT or facility. The duration of sub-grants varied from three months to a year or more. The PBF recipients reported periodically on activity implementation, progress toward results, and financial expenditures. Upon completion of the sub-grant period, USAID/FRHP assessed performance and verified data with the District Health Information Management System (DHIMS). The PBF recipients were eligible for a performance award with a value between 5-15% of the sub-grant amount. Payment mechanisms changed during the life of the project, eventually being given to the districts in cash or check to be used at their discretion after having a discussion with USAID/Ghana.

USAID/FRHP made 42 PBF agreements with the districts and facilities covering a variety of health issues, including improving immunization coverage in CHPS zones and strengthening health information systems, with the majority of the PBFs used for improving maternal health and family

planning (FP) services. During the USAID/FRHP mid-term project review, PBF recipients said their focus on FP and maternal health was due to the critical need to improve these services and the relative lack of funding available compared to resources coming through vertical programs for malaria (National Malaria Control Program), HIV/AIDS (National AIDS Control Program), and immunization (Expanded Program on Immunization, or EPI).

Funding from Non-MOH/GHS Sources

In addition to providing direct funding to the districts through the PBF mechanism, USAID/FRHP worked with the districts to strengthen their ability to obtain financial support for health activities from the district assembly or other non-MOH/GHS sources, which is critical for the sustainability of programs and services run by the DHMTs. Such sources also contributed to the districts' ability to meet their cost-share obligations that are required by USAID/FRHP. Between 2010 and 2012, the number of DHMTs that received funding from non-MOH/GHS sources increased by 13%.

RESULTS

Using PBF funds, districts realized improvements in the number of ANC visits, supervised deliveries, and availability of basic emergency obstetric and neonatal care (BEmONC). Districts achieved astonishing results in FP as a result of training, facility refurbishment, purchase of required instruments and supplies, and service delivery innovations using PBF. Couple-years of protection (CYP) for all methods increased by 86% and CYP for contraceptive implants skyrocketed, increasing by 305%. Forty-two DHDs, MHDs, hospitals, and health facilities under GHS have received PBF funds between March 2011 and November 2013. USAID/FRHP commissioned PricewaterhouseCoopers to conduct an independent financial audit of the RHD sub-grants for the first three years (2009-2013) of the project (valued at US\$ 3,039,068) to verify that policies and procedures were followed. The result was that about 1% of the value of the regional sub-grants was disallowed and had to be reimbursed by the RHDs. All three RHDs have paid back disallowed costs to JSI against CD/VAT paid from project funds. The sub-grant mechanisms were useful for reorienting the GHS to achieving targets, fostering initiative, and making funds available for programs that would not otherwise have been available. In some cases, health workers piloted new ways of delivering services and tried to understand the market for services in order to improve service delivery.

CHALLENGES

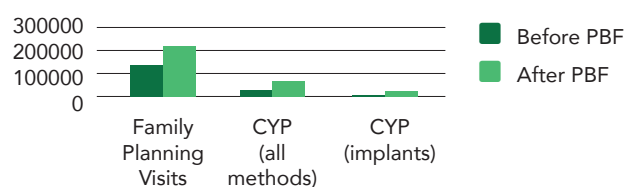
Not all districts covered by USAID/FRHP benefitted from the PBF sub-grants. Districts outside the three focus regions were not eligible to participate due to the project's mandate and available resources. Of the 64 districts in the three focus regions, 27 (42%) were PBF recipients.

Some DHMTs were unable to capitalize on PBF due to inadequate skills and organizational abilities. Regional and district health directors reported that certain districts are better able to apply for and win PBF because they are more experienced in writing proposals and are better organized. Other districts require additional support and guidance in the proposal writing process to enable them to be competitive for a PBF sub-grant.

The concept of direct funding through sub-grants was appreciated at regional and district levels, but complying with the USAID requirements posed challenges. Despite the complexities of USAID rules and regulations, however, less than 1% of expenditures of the RHD sub-grants were disallowed which suggests that the GHS managers and accountants worked diligently to properly use the funds and submit accurate, complete reports. USAID/FRHP staff were actively involved in carrying out initial assessments of the grantees' financial management strength, providing financial management training to all beneficiaries before the award and continuing with periodic field monitoring in-person.

Implementing all of the activities included in the sub-grant agreements was challenging for the RHDs. Unlike the district-level sub-grants that could be awarded at any time and for varying duration, the RHD sub-grants were issued according to the schedule of the USAID fiscal year, (October 1-September 30) and had a fixed dura-

FP Indicators Before & After PBF



tion of one year. The GHS fiscal year runs from January 1-December 31 with planning and budgeting completed accordingly. The difference in the fiscal years effectively meant that the RHDs had only six months in which to spend the funds and complete all of the activities included in the one-year sub-grant plan. The RHDs also included activities and targets in the sub-grant agreements that were too ambitious for their absorptive capacity. As a result, RHD performance was less than optimal.

During the mid-term project review, several key informants expressed some frustration at dealing with the complexities of USAID rules and regulations and fiscal year planning, which has potential implications for long-term USAID strategy to shift as much as possible to local partners for grant and contract implementation. Managers said they were overwhelmed by the rules, which suggests a need for additional training in USAID regulations before they are ready to work as direct partners.² USAID/FRHP provided orientation, training, and technical support in USAID rules and regulations, but several managers nonetheless complained that the rules were burdensome.

"Because of PBF, we joined our family planning centers to the market. We learned procurement policies. We went into the communities to get clients. We learned the community better, learned about their problems. We met people outside our usual clients. Previously, we sat and waited for clients to come. But this time we went to clients to sell our services, house-to-house, door-to-door."

-District Health Director, Greater Accra Region

In addition to the absorptive capacity considerations of sub-grantees, USAID/ FRHP also experienced constraints. Since the funds come from USAID, the project was subject to financial audit after the fact. Even though USAID/Ghana provided agreement officer and agreement officer's technical representative approval, the opinions of auditors might diverge. Therefore, it is incumbent on the grantor to scrupulously follow the necessary procedures to ensure that USG regulations are being applied correctly.

LESSONS LEARNED & WAY FORWARD

As USAID Forward increases the amount of funding going directly to governments, partner organizations, and institutions, projects such as USAID/FRHP must have the human, technical, and financial resources to conduct training and provide oversight and technical assistance for local counterparts. More flexibility is required to accommodate the difference in fiscal year planning and budgeting between agencies of the USG and counterpart government agencies to make direct funding mechanisms more effective. The shift from the traditional mode of conducting activities based on budgeted cost to targeting achievement of results requires all participants to adapt their practices and develop new approaches for program implementation and financial management.

PBF is not any less resource-intensive on the part of the grantor than more traditional mechanisms. The theory of PBF could lead to an assumption that once desired results have been identified and contracted for, the process would alleviate some of the program and financial monitoring otherwise required. The experience of USAID/FRHP suggests that, particularly at the outset of the program, extensive consultation, technical support, and training are required.

To ensure compliance with USAID rules and regulations, USAID/FRHP was obligated to monitor inputs, vouchers, and receipts of sub-grantees in order to document effective stewardship of funds. As a result, USAID/FRHP adopted a hybrid PBF process that rewarded satisfactory performance while still maintaining ultimate oversight. This would not be the case in a purely performance-based system where only the achievement of results would be monitored.

A cost share requirement for sub-grantees is a way to reinforce ownership and commitment. Finding ways to meet the cost share requirement has also prompted some sub-grantees to advocate with local authorities and organizations for support, which is necessary to engage new allies and start looking at longer-term funding needs for healthcare services.

² USAID Focus Region Health Project. Midterm Internal Program Review. 2012

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USAID/FOCUS REGION HEALTH PROJECT, GHANA

Technical Brief

Increasing Use of Long-Acting and Permanent Methods for Family Planning

The USAID/Focus Region Health Project (FRHP), is a 4.5-year USAID funded project managed and implemented by JSI Research & Training Institute, Inc. (JSI) in partnership with World Education Inc., (WEI). USAID/FRHP works in close collaboration with the Ministry of Health (MOH) and the Ghana Health Service (GHS) to strengthen access to, and quality and use of maternal, newborn, and child health (MNCH), family planning (FP), malaria, and HIV services in the Western, Central, and Greater Accra Regions of Ghana.

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INTRODUCTION

Ghana's population has been steadily increasing over the last 25 years and in 2012 exceeded 25.5 million.ⁱ While the total fertility rate (TFR) has decreased (from 6.8 in 1988 to 4.0 in 2008)ⁱⁱ, and both men and women express a desire to limit and space their children, the use of family planning (FP) methods to limit or space pregnancies has not shown the expected commensurate increases. Despite the fact that over 97% of women in Ghana know the benefits of contraception, the unmet need for FP remained high in 2008 at 35%.ⁱⁱⁱ

Long-acting and permanent methods (LAPMs) of FP offer many advantages, such as effectiveness over a long period of time and reversibility. Evidence shows that Ghanaian women are interested in accessing these methods. Among a representative sample of married women across the country in 2008, over 50% stated their preference for future FP use would be a long-acting method, such as an intrauterine device (IUD), injectable, or implant.

OBJECTIVES & APPROACH

As part of USAID/FRHP's goal of improving key health targets, including increasing the number of couple-years of protection (CYP) in the three focus regions, USAID/FRHP sought to improve the supply side of LAPM through provision of methods such as Jadelle® and IUDs. To address an unmet need of 27-50% in these areas and a contraceptive prevalence rate (CPR) of 17% (in 2008), the project had the following FP objectives:

- » To broaden the contraceptive method mix and increase access to services to meet the growing demand;
- » To improve providers' skills in effective client-provider interaction, including counseling;
- » To strengthen access to LAPMs in rural areas; and
- » To monitor the provision of postpartum FP in the three focus regions.



Family planning counseling for a new client.

USAID/FRHP's approach was to support the GHS Family Health Division (FHD) to increase the pool of skilled FP providers in the three regions as well as to improve the supply of commodities and health facility conditions necessary for LAPM provision. GHS services in some areas were complemented by USAID/FRHP-funded private sector outreach to provide LAPMs.

KEY ACTIVITIES & SUPPORT

USAID/FRHP implemented a comprehensive set of activities to enhance the supply side of LAPM provision in the three focus regions.^{iv} In order to achieve its objectives, the project sought to scale up several high-impact interventions, including:

- » Training 1,014 providers in skills training that included Jadelle® and IUD insertion and removal, minilap, and vasectomy surgeries;
- » Employing continuous quality and performance improvement in facility and community integrated services;
- » Strengthening logistics systems providing contraceptives to space and limit pregnancies through a range of public and private service delivery points (SDPs);
- » Improving contraceptive security and provision of a wider range of methods;
- » Providing counseling and FP method options immediately post-partum at the delivery site;
- » Supporting public-private partnerships through contracting; and
- » Equipping, refurbishing, and renovating FP clinics.

These activities were carried out in all three focus regions in collaboration with the GHS, health facility staff, district health directorates (DHDs), and regional health directorates (RHDs).

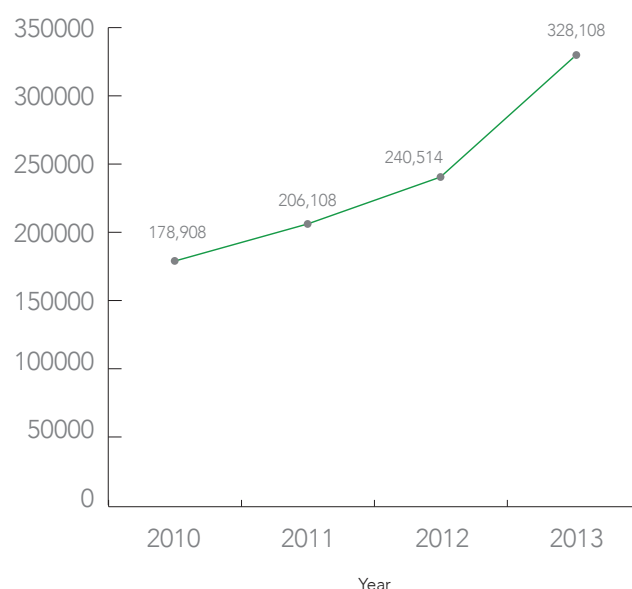
RESULTS

Due to the interventions implemented by USAID/FRHP in collaboration with GHS, CYP has increased sharply from 240,514 to 328,108 in just one year (between 2012 and 2013) in the three regions. The increase is due in large part to the LAPM service capacity which has expanded greatly in the focus regions over the past few years, including outreach services by Marie Stopes International Ghana (MSIG) to some of the remote rural districts in these regions.

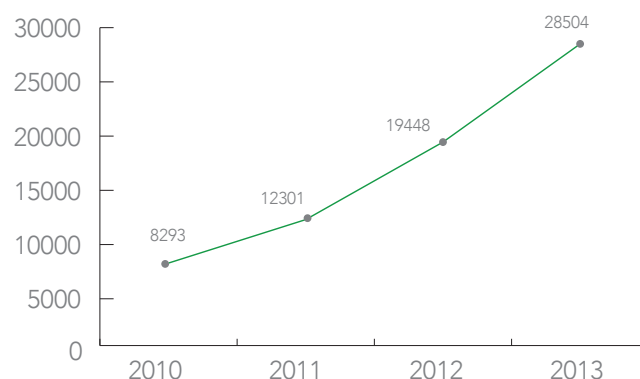
Among the LAPMs, Jadelle® implants were the most preferred by clients and continue to be in high demand due to the fact that they require a less invasive procedure (as compared to IUDs, for example) and do not involve frequent return visits to the health facility (as compared to pills, for example). Between 2010 and 2013, the number of Jadelle® acceptors in the three regions has increased from 8,293 to 28,504.

The rural outreach services conducted in collaboration with MSIG also provided access to women and men in communities of varying socioeconomic status in rural locations. By September 2013, CYP of 43,592 had been generated with 566 (5.4%) women benefiting from basic tubal ligation (BTL), 16 (0.16%) men having sought vasectomy surgery, 478 (4.6%) women having IUDs inserted, and 9,268 (90%) women having Jadelle® inserted. Overall, a total of 10,328 clients were reached through the rural outreach service.

CYP for LAPM for Focus Regions, 2010-2013, GHS DHIMS



Number of Jadelle® Insertions in Focus Regions, 2010-2013, GHS DHIMS



"...I encountered a client who was afraid of the procedure but after counseling her she agreed for the insertion to be carried out. After her insertion she brought two other women who have also undergone Jadelle® insertion..."
Wassa Akropong Government Hospital

After participating in skills-building trainings, providers reported having performed 23 Jadelle® insertions on average in the six month period immediately following certification.

CHALLENGES

While the activities to improve long-term FP uptake in the three focus regions have been quite successful, there still have been a number of challenges to this work:

- » **Lack of authorization to perform Jadelle® insertions.** At the start of USAID/FRHP, community health nurses (CHNs) were not authorized to perform Jadelle® insertions. However, given human resource constraints within the focus regions, some RHDs trained this cadre of health workers to perform insertions. The GHS FHD has since changed their position on this and now supports the training of lower-level health workers, such as CHNs, to insert Jadelle®.
- » **Difficulty maintaining consistent supply of commodities.** In the initial stages, health providers were not adequately empowered and trained to manage stock levels. USAID/FRHP coordinated with other donors, projects, and the GHS to prevent FP commodity stock-outs.
- » **Irregular record-keeping.** Use of the FP client card and other documentation needs to be done regularly. USAID/FRHP collaborated with the GHS to print and distribute the cards and other registers.
- » **Cost of methods for clients.** Jadelle® is currently not covered by national health insurance, and the cost is prohibitive for some women. In addition, many FP providers charge unapproved fees which tend to limit access for some clients.
- » **Demand creation for LAPMs.**
 USAID/FRHP's mandate was to work on the supply-side of LAPMs within the three regions. Other donor-supported projects, such as the Behavior Change Support (BCS) Project and efforts by the GHS were necessary to complement USAID/FRHP activities to achieve a more sustained and greater uptake of these methods.

LESSONS LEARNED

- » CHNs are able to correctly and consistently perform Jadelle® insertions;
- » Contraceptive prevalence has increased in the regions (as evidenced by MICS 2011 data) in part because of USAID/FRHP's efforts to expand access to and use of LAPMs, including increasing the number and availability of service providers trained in Jadelle® insertions and other LAPMs;

Number of Clients Reached with Mobile Outreach Services for FP by Method Type, 2012-2013, MSIG Reports

METHOD	CLIENTS 2012	CLIENTS 2013
Vasectomy	10	16
BTL	449	566
IUD	44	478
Jadelle®	4,942	9,268
TOTAL CLIENTS	5,445	10,328



A trained provider inserts an IUD for a client. In 2013, 478 clients received IUDs through mobile outreach services.

- » Increased CYP resulted in part from USAID/FRHP's efforts to respond to the large and increasing demand for Jadelle®.
- » With great demand for Jadelle®, it was easy to find enough clients for training purposes. Each trainee must perform at least 5 insertions during a training and there were always enough volunteer clients who came for the method because Jadelle® was offered at a reduced cost to the clients.

WAY FORWARD

While USAID/FRHP ends in February 2014, several initiatives are underway which will hopefully continue the uptake of LAPMs. There are a few other issues that need to be addressed to maintain the momentum.

- » The cost of Jadelle® insertion has been changing; however, it still remains too expensive for some women to consider. The FHD is working to incorporate the method into the national health insurance scheme.
- » Provider training needs to continue as high turnover among health workers still presents challenges.
- » Commodities are required for the continued expansion of LAPMs of FP. Therefore, commodity security needs to be sustained.
- » GHS reliance on donor support for FP commodities is high. Significant changes in this support will directly adversely affect long-term FP provision and availability.
- » Public-private partnerships, such as the one to provide mobile LAPM services are worth continued consideration.



A trained provider inserts Jadelle®. In 2013, 9,268 clients accessed the method through mobile outreach services.

i. Population Reference Bureau, website, Data Find, PRB 2012 World Population Data Sheet, <http://www.prb.org/DataFinder/Geography/Data.aspx?loc=262> (accessed 11/18/2013).

ii. Ghana Statistical Service (GSS), Ghana Health Service (GHS) and ICF Macro. 2009. Ghana Demographic and Health Survey (GDHS) 2008. Accra, Ghana: GSS, GHS, and ICF Macro.

iii. GDHS, 2009.

iv. NB: USAID/FRHP was only charged with improving the supply side of FP provision. The Ghana Behavior Change Support (BCS) project, a four-year project also funded by USAID and operating in the three focus regions worked on the demand side of FP provision. The aim of BCS was to increase demand and use of commodities and services and create positive behaviors in FP, among other health areas.

v. USAID/FRHP Monitoring and Evaluation Unit, Post Training Follow-Up Monitoring Report, April, 2011.

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USAID/FOCUS REGION HEALTH PROJECT, GHANA

Technical Brief

Leadership Development Program

The USAID/Focus Region Health Project (FRHP), is a 4.5-year USAID funded project managed and implemented by JSI Research & Training Institute, Inc. (JSI) in partnership with World Education Inc., (WEI). USAID/FRHP works in close collaboration with the Ministry of Health (MOH) and the Ghana Health Service (GHS) to strengthen access to, and quality and use of maternal, newborn, and child health (MNCH), family planning (FP), malaria, and HIV services in the Western, Central, and Greater Accra Regions of Ghana.

USAID/FRHP's technical briefs share and highlight selected strategic approaches, innovations, results, and lessons learned.

INTRODUCTION

In order to make sustainable improvements in the quality of healthcare services and improve health outcomes, the GHS is working to strengthen leadership and management capabilities at all levels of the healthcare system. In 2008, the Human Resources Division (HRD) of the GHS began working with the Leadership, Management and Sustainability (LMS) Program¹ to develop a national team of leadership and management facilitators. A pilot of the Leadership Development Program (LDP) conducted in the Central Region demonstrated improved management practices and service delivery outputs, leading to the adoption of the LDP as part of a national strategy to improve the performance of Ghana's health system.²

USAID/FRHP worked with the GHS to expand the LDP in the Greater Accra, Central, and Western Regions of Ghana. During the first year of the project, USAID/FRHP worked with the LMS Program to adopt the LDP methodology and technical resources and plan for LDP expansion with the GHS.

APPROACH

Despite the prominence of leadership in the program name, the LDP focuses on developing both leadership and management skills for organizational change. The purpose of the LDP is to help managers and providers develop the skills needed to effectively manage resources to overcome those challenges. The program concentrates on **challenges** as opposed to **problems and obstacles** and is geared toward health systems and the managers and providers who are confronted with challenges that have an impact on healthcare quality and outcomes. Key leadership and management practices facilitate the identification of challenges and possible solutions:³

Leading

- » Scanning
- » Focusing
- » Aligning/Mobilizing
- » Inspiring



These practices are intended to identify needs and priorities; articulate strategy; link objectives and capacity; unite stakeholders around the vision; demonstrate commitment and teamwork.

¹ The LDP was funded by USAID through the Quality Project and implemented by Management Sciences for Health (MSH).

² Ghana Health Service Improves Health Care Through Partnership With The USAID Focus Region Health Project. September 2012.

³ Managers Who Lead; A Handbook for Improving Health Services. Management Sciences for Health. 2005

Managing

- » Planning
- » Organizing
- » Implementing
- » Monitoring/Evaluating



These practices are intended to match resources with objectives; align staff capacity with activities; coordinate work flow; adjust plans; reflect on progress.

Unlike traditional approaches to leadership development that teach theory in a classroom setting, the LDP is an experiential learning program conducted over a four- to six-month period with pre-existing teams. Participating teams are selected from actual workplaces in order to build a culture of teamwork and cooperative problem-solving that supports continuous improvement. A series of meetings, practical activities, and follow-up coaching are used to guide the teams through identifying a challenge that hinders performance, planning actions, mobilizing resources to resolve the challenge, and monitoring progress and results. The LDP also differs from traditional approaches, in that it fosters the leadership and management potential of staff at all levels, rather than concentrating on those in senior or designated management positions.

KEY ACTIVITIES

USAID/FRHP collaborated with the GHS HRD to support the national team of LDP facilitators in scaling-up the LDP in the Greater Accra, Western, and Central Regions. As the first step in the process, the national facilitators conducted senior alignment meetings with the regional health directorate (RHD) in each region to garner commitment for the LDP and to establish a vision for each RHD. Teams were then formed and included a “core” of 5–10 senior managers from the RHD, district health management team (DHMT), and/or hospital. The core teams participated in didactic training led by the national facilitators to orient them to the LDP process and the coaching role they are expected to play throughout the LDP process.

Subsequently, the core teams engaged other “work teams” comprised of lower level managers and staff from the same unit or facility who routinely work together. Work teams attended workshops that covered leadership and management concepts and practices. The teams were introduced to the *Challenge Model*, which guides teams to scan their own workplace and focus on a specific challenge faced by the district or facility. Upon returning to their workplaces, the teams continue to align their agreed-upon challenge and measurable result, plan actions, and mobilize needed resources. Meetings of the core and work teams and follow-up coaching visits by the national facilitators help the teams implement their plans and monitor progress. In final workshops, teams present their results, discuss the factors that contribute to (or hamper) the achievement of their common objectives, and identify lessons learned.⁴

RESULTS

The GHS conducted the LDP learning process with 34 regional and district teams in the three focus regions during 2011–2013. Of the 32 teams that completed the process and reported on their results, 33% achieved or exceeded their objective. Although the majority of teams did not fully achieve their objective within the designated six-month LDP implementation period, most teams made progress toward the objective and realized some degree of improvement in their specific situation.

Several of the teams that did not achieve their objective by the end of the LDP process were sufficiently motivated to continue working and eventually achieved their intended result. Several teams that achieved their objective pursued additional challenges and continued their team efforts to make improvements in their workplaces without the support of the national LDP facilitators. Following the introduction of the LDP in the Greater Accra Region, the RHD (without USAID/FRHP funding) applied the process to identify and address issues of clinical decision-making in maternal and newborn care services.⁵ Improvements in service quality resulted in increased numbers of facility deliveries.⁶ These teams are perhaps the real LDP “success story” for having truly internalized the concepts and practices of leadership, management, teamwork and commitment.

⁴ Report of Central Region LDP Phase 2, Workshop 1

⁵ Oduro-Mensah E, Kwamie A, Antwi E, Amisshah Bamfo S, Bainson HM, et al. (2013) Care Decision Making of Frontline Providers of Maternal and Newborn Health Services in the Greater Accra Region of Ghana. PLoS ONE 8(2): e55610. doi:10.1371/journal.pone.0055610

⁶ Brief on LDP Under Clinical Decision Making Support Interventions (WOTRO Project) in the Greater Accra Region

Of those teams that reached or exceeded their objective, success was attributed to strong commitment and support from senior managers and supervisors who worked as a cohesive team toward a common objective and having learned how to advocate with stakeholders for needed resources, collaborated with non-GHS providers, and also conducted training sessions for staff to improve skills. Reasons for teams not achieving their objectives included lack of interest by other stakeholders, conflicts with group meeting schedules, competing priorities, power outages, and insufficient coaching and commitment from the core team.

Achievements included increasing deliveries with skilled birth attendants, increased immunization coverage, reduced commodity shortages, improved report submission, and facility refurbishment. Quality improvement is an implicit objective of most of the plans to address challenges identified by the regional, district, and facility teams. The explicit measurable results defined in the Challenge Models address a specific issue confronting the district or facility. A few illustrative examples of achievement using the LDP process and practices are provided below.

Better Service Organization and Client Flow

In Ga East District (Greater Accra Region), clients at the Madina Kekeli and Rawlings Circle Polyclinics waited an average of three hours when seeking services. The quality assurance (QA) team identified retrieval of client records, pharmacy, and cashier services as major points of delay at the facilities. The QA team arranged for installation of additional shelves to increase storage and improve organization of client records and opened additional service windows in the pharmacy and accounts desk. Within two months, the average waiting time for services was reduced to 45 minutes—a 75% decrease, which exceeded the team's objective.

Client Satisfaction

The Inchaban Community-Based Health Planning and Service (CHPS) compound in Shama District (Western Region) determined that utilization of services was low due to inadequate consulting rooms, lack of privacy, insufficient seating, and dilapidated washroom facilities. Through the LDP process, CHPS staff obtained additional consultation space in a building nearby, secured a mobile toilet, raised public awareness about services offered, and erected directional signs to the compound. As a result, use of services increased by over 28% during a 6-month period.

Infrastructure Rehabilitation

The Ashaiman Polyclinic (Greater Accra Region) was dilapidated, dirty, and lacking essential equipment. Pregnant women were reluctant to go to the polyclinic for delivery. The polyclinic team therefore decided to work toward rehabilitation of the maternity unit. The team raised additional funds from the district assembly and a local church to fully renovate the maternity unit, build a maternity operating theater, construct an incinerator, and obtain x-ray equipment. After the renovation, the number of women having four antenatal clinic (ANC) visits increased by 49% and there was a 38% increase in deliveries with skilled birth attendants (SBAs).⁷

Fostering organizational change and building cohesive teams can be extremely difficult even in well-resourced environments. Institutionalizing change and teamwork in the under-resourced settings of GHS facilities is particularly difficult and requires on-going support and reinforcement. The fact that 33% of the districts participating in the program achieved their objectives through improved teamwork and motivation the first time they participated in the six-month facilitated LDP process is an encouraging sign.

An internal mid-term review of USAID/FRHP found that the LDP is widely seen as a positive intervention by members of DHMTs and staff at lower level facilities (i.e., sub-district facilities and CHPS compounds). In general, district health directors (DHDs) fully supported LDP implementation and actively participated in the process. Staff at sub-district facilities and CHPS compounds cited greater empowerment and strengthened ability to set objectives and manage services on their own as benefits of the LDP.

⁷ LDP: A Catalyst for Accelerating the Pace of Transformation of Service Delivery: The Example from Ashaiman Polyclinic.

CHALLENGES

The LDP has been well received by the GHS RHDs, DHMTs, and staff of smaller facilities, but many teams reported having challenges with creating interest and garnering support from other stakeholders both within and outside their own workplaces. Although it is encouraging that 33% of the teams were able to achieve their measurable result within a six-month period, 67% did not despite assistance from experienced facilitators and coaches and interested managers. This suggests that the GHS will need to continue support to strengthen the concepts and practices of the LDP among teams that have already participated as well as to expand the LDP to additional regions and districts.

The HRD has been the driving force behind the LDP and is almost solely responsible for building the national team of LDP facilitators. Other GHS divisions and units have had little or no involvement in the program.

To create sustainable change, the LDP process must be continuous; it cannot be a one-off event or a single cycle. The original vision of the LDP was for the USAID/FRHP to conduct a pilot project which, if successful, would be implemented, managed, and maintained by RHDs with their own resources. Competing priorities and resource constraints, however, limited the ability of the regions to expand the LDP without external support.

LESSONS LEARNED & WAY FORWARD

The LDP is a promising approach for developing teamwork and achieving objectives that result in better client care. Expectations about the ability of the GHS to scale up the LDP without external resources must be tempered by a realistic grasp of competing priorities and available human and financial resources. Building a broader base of awareness of and capacity in the LDP are essential for garnering additional support at all levels of the GHS. Additional factors for consideration include:

- » **Staff Capacity:** Staff at sub-district facilities and CHPS zones can rise to the meet the challenge when empowered to do so. The experience of USAID/FRHP demonstrates that lower-level managers and front-line providers are motivated to seek practical solutions in order to better serve their clients when they have the backing of their supervisors and senior managers.
- » **Setting Realistic Objectives:** Although teams need to be encouraged to set ambitious objectives, those objectives should be realistic and measurable. Facilitators and core managers can help the teams to formulate objectives that are clear, meaningful, and measurable using existing data.
- » **Continued Financing:** Financing is a major barrier to continuation of the existing LDP and expansion to other regions. The GHS must either raise the funds for expansion or identify them from another external or internal source.
- » **Human Resources for the LDP:** By developing LDP facilitators for each region, the GHS would limit reliance on 'external consultants' or facilitators, a factor that has been responsible for the slow pace of expansion as well as the challenges of meeting costs for program expansion. FRHP supported training of facilitator groups for the Greater Accra and Western regions in 2013, but the training process is not complete. These teams must conduct a 6-month program for other district teams with receiving coaching by the master/national facilitators before they can be certified. It is not clear whether this step will be possible to complete without outside assistance.
- » **Structured Assessment:** A structured assessment and analysis of LDP implementation for additional regions in Ghana would help identify obstacles and problems and also pool lessons to improve implementation.

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USAID/FOCUS REGION HEALTH PROJECT, GHANA

Technical Brief

Improving Monitoring and Supervision of Malaria Activities at the Facility Level Using mHealth for Prompt Decision-Making and Intervention

The USAID/Focus Region Health Project (FRHP), is a 4.5-year USAID funded project managed and implemented by JSI Research & Training Institute, Inc. (JSI) in partnership with World Education Inc., (WEI). USAID/FRHP works in close collaboration with the Ministry of Health (MOH) and the Ghana Health Service (GHS) to strengthen access to, and quality and use of maternal, newborn, and child health (MNCH), family planning (FP), malaria, and HIV services in the Western, Central, and Greater Accra Regions of Ghana.

USAID/FRHP's technical briefs share and highlight selected strategic approaches, innovations, results, and lessons learned.

INTRODUCTION

Malaria is endemic and perennial in all parts of Ghana, with seasonal variations that are more pronounced in the north. Ghana's entire population of 24.2 million¹ is at risk of malaria infection, but children under five years of age and pregnant women are at higher risk of severe illness due to reduced immunity. Transmission tends to be less intense in large urban centers. According to GHS health facility data, malaria is the number one cause of morbidity and mortality in children under five years of age, accounting in recent years for 33% of hospital deaths in children under five years and about 38% of all outpatient illnesses and 36% of all outpatient admissions. Between 3.1 and 3.5 million cases of clinical malaria are reported in public health facilities each year. The World Health Organization (WHO) recently estimated total malaria-attributable child deaths at 14,000 per year in Ghana.²

Providing services and interventions to address this enormous malaria burden in Ghana presents a challenging health management situation. The provision of adequate skills, knowledge, and an appropriate clinical environment in the diagnosis, prevention, and treatment of malaria is crucial in reducing the burden of the disease. Post-training follow-up visits and facilitative or supportive supervision are key activities in program planning and implementation. Visiting trained providers ensures that they apply the knowledge and skills acquired during routine and episodic trainings. Visits also offer supervisors the opportunity to assess and evaluate the performance of providers on the job and to identify any challenges or gaps to be addressed. The National Malaria Control Programme (NMCP) has specific checklists or tools for these activities to ensure that a certain level of quality is achieved in all malaria supervision activities and that consistency is maintained when reviewing programs. Traditionally, malaria data is gathered during field visits is by carrying hard copies of checklists which are usually administered to providers. These hard copies are then carried from the field to the offices of the supervisors no matter how bulky they may be and are later presented to a central point where they are collated. The service of a data entry clerk is engaged to design a data screen where the data are entered one after the other for analysis. All these processes typically take at least two months before the final data are available, and as a result, issues that are expected to be addressed immediately are often overlooked. More often than not, data are finally ready for use in making program management decisions when the planned interventions are no longer relevant.

¹ 2010 Census

² WHO World Malaria Report 2008

Recent experiences in Ghana and elsewhere had shown promising technological solutions to reduce the time lag between data collection during field supervisions and its availability for use to make informed, timely decisions about how to best tailor malaria program interventions. USAID | DELIVER had already successfully used mHealth technologies in Ghana to monitor stock levels, and through the USAID/FRHP, JSI built upon this pilot work and expanded methods for case management, facility assessment, identifying training needs, and conducting on-the-job coaching.

OBJECTIVES & APPROACH

USAID/FRHP's work to reduce the prevalence of malaria in the three focus regions included capacity building in case management, strengthening case confirmation, improving focused antenatal care, producing job aids, and data management. As part of the 2010-2011 workplan on malaria, USAID/FRHP decided to build upon the GHS and USAID | DELIVER experience of using mobile phone technology to improve availability of drugs by extending the technology for use in monitoring and supervision. USAID/FRHP therefore included an activity to use mobile phone technology to improve case management and malaria in pregnancy in targeted districts.

The specific objectives for this plan were to:

- » Strengthen case management/malaria in pregnancy (MIP) post training³ and routine monitoring and supervision;
- » Improve data quality by improving its timeliness and completeness;
- » Ensure prompt data collection and analysis;
- » Build capacity within the GHS/NMCP to ensure continuity; and
- » Improve program managers' ability to rapidly respond to identified problems and begin corrective action in real time.

Under the plan, USAID/FRHP collaborated with the GHS in selected districts of the three focus regions and assisted in the deployment of an electronic- or mobile-based quality improvement (QI) and supervision tool for malaria. The project and the GHS also collaborated on its application, documentation, and dissemination of results and lessons learned. It was envisioned that applying the system for monitoring and supervision would lead to rapid on-the-spot analysis of findings and feedback for service improvement. This would ultimately lead to better, tailored interventions that addressed the challenges in the prevention, diagnosis, and treatment of malaria thereby reducing the malaria burden.

KEY ACTIVITIES

To address some of the cumbersome processes of gathering malaria program monitoring and supervision data for analysis and use, the USAID/FRHP malaria program modified the NMCP's standard checklist for use by introducing the GHS staff to the use of mobile phones to collect field data using Magpi.⁴ Use of electronic devices for data collection during monitoring visits lead to prompt data availability and analysis. The system has been employed to address gaps identified during field visits immediately, sometimes before the whole supervision exercise is over, since the data are sent directly from the field to a server. The lead person for the supervision can assess this data and take immediate action whilst the supervisors are still on the field.

³ Post Training refers to the first supervision visit to providers to ensure their adherence to protocols and application of skills and knowledge acquired. It is required the any provider trained is followed up after about 6 weeks.

⁴ Formerly known as "EpiSurveyor," Magpi is a free mobile phone- and web-based data collection system. It has more than 3,000 users in more than 160 countries, making it the most widely-used health software. This includes 15 sub-Saharan African countries where it has been implemented in conjunction with the World Health Organization's African Regional Office (WHO/AFRO).

Magpi is a secure mobile data solution that:

- lets you immediately start designing mobile forms for data collection on any topic;
- allows forms to be filled out on common mobile phones, either using an application on the phone or standard SMS messages;
- enables upload and analysis of the data in real-time.

Magpi runs on common and inexpensive mobile phones available in every country, as well as Blackberries, and even Android phones. It is for example, it is used for the collection of information regarding clinic supervision, vaccination coverage, or outbreak response, and it helps to identify and manage important public health issues including HIV/AIDS, malaria, and measles.

<http://www.datadyne.org/Magpi-mobile/>

Key activities performed under this program included:

1. Building upon the USAID | DELIVER Experience

The JSI Deliver project had used the technology for end user verification with a great deal of success. USAID/FRHP therefore decided to explore the possibility of building upon this success and extend the use of the tool to conduct supervision and monitoring.

2. Identifying and Procuring Mobile Phones and Accessories

Having been convinced of the possibility of applying mobile technology, USAID/FRHP proceeded to identify and procure two Nokia E 63 smart phones which are compatible with the software. The software was then installed on the mobile phones using the user guide provided on the datadyne website.

3. Tool Development and Uploading

The next key activity conducted was the design of a sample checklist based on the NMCP's approved tool. The checklist was pretested by entering sample data and sending from the phone to the website. The sample data was analyzed to ensure that the system functioned properly.

4. Training

A few GHS officers, specifically regional and district malaria focal persons and health information officers, were selected to learn how to use the phones and the software to collect and transmit data. Mock data collection exercises in selected facilities were conducted to enable the staff to acquaint themselves with the use of the phones. The checklists were then reviewed based on experiences in the field.

5. Piloting on the Use of the Technology in 63 Facilities

The final tool was developed in July 2011 for testing in selected facilities in Greater Accra and Western Regions. In all, 63 facilities were involved in the pilot. The activity was a huge success in that data collected from all the facilities visited were ready for processing and analysis at the end of the visits, making it possible to implement the necessary interventions and address identified gaps immediately. Based on this experience, USAID/FRHP decided to expand this technology to all its malaria supervisions in the focus regions.

USAID/FRHP has been successful in applying this technology in malaria monitoring visits to facilities in all three of the focus regions. Over 150 GHS officers from both the regional and district levels have been introduced to the technology and routine monitoring visits have been conducted since July 2011 in various of areas under the USAID/FRHP malaria program. These include supervision of malaria case management, focused antenatal care facility assessment, supervision on the use of rapid diagnostic tests (RDTs) and post-training follow-up visits.

RESULTS

1. Timing of Availability of Data

Through the use of mobile phones, the project was able to assemble data from the field for analysis and use within 48 hours after the end of the visits. The long delay due to developing screens, compiling data, and writing reports was eliminated.

2. Improving the Quality of Data

Since the data were collected and sent electronically, the challenge of identifying hand writing with respect to figures and words in order to decipher what a supervisor tried to communicate was eliminated. Therefore, the quality of the data tremendously improved.

3. Providing Prompt Interventions

The timely availability of data made room for the implementation of the necessary interventions within a very short period of time. USAID/FRHP-funded monitoring visits using this technology in all three regions have been used to immediately address the following issues:

- » Stock-out of sulphadoxine-pyrimethamine (SP), used for intermittent preventive treatment in pregnancy (IPTp), was ob-

served in some facilities in both regions. When this was detected while monitoring the data online, the team in the field was quickly requested to arrange for the resupply of SP. This was delivered within 24 hours after the visit, so that mothers could once again receive the proper IPTp care. Similar findings during visits to facilities in the central region prompted immediate investigations into SP stock outs.

- » Irrational artemether injection use for the management of uncomplicated malaria was widespread. Providers were prescribing injection artemether in combination with artemisinin-based combination therapies (ACTs). These facilities were targeted for immediate supervision visits to address the challenges.
- » Prompt analysis of the data sent to the website from the field helped the GHS and USAID/FRHP to identify training gaps at the facility level in terms of additional numbers and category of staff needing to be trained. This step made it possible to plan targeted training activities for facilities that needed the most training.

4. Improving Data Collection

The burden of carrying quantities of hard copies of checklists to the field was completely eliminated because they supervisors had up to 100 questionnaires or tools on each phone which they could also use for communication at the same time.

CHALLENGES & LESSONS LEARNED

The use of mobile technology poses technological challenges to some staff of the GHS. Because the staff are not used to the routine application of this technology it becomes a bit of a burden to use the devices. In addition, the tool makes it possible to send completed data to the server from the field. However, poor communication networks may pose challenges to data availability on the server. The device will save the data which could be sent later when communication network improves. Finally, although the regional and district officers who have been introduced to this technology have found it very useful, there are still questions as to what body should ultimately be responsible for procuring the devices for use.

The application of electronic devices/modern technology for monitoring, supervision, and data collection is a simple and useful means of reducing barriers and difficulties involved in data collection and processing. This technology can be applied to monitor other activities such as long-lasting insecticide-treated net (LLIN) distribution through antenatal and child welfare clinics across the country. The situation in Ghana is conducive for this intervention to reduce the cost, time, and logistics in the supervision and monitoring of service providers trained in Malaria interventions.

According to International Telecommunications Union, Ghana ranks 49th in the world and the highest in Africa in mobile broadband use. Mobile penetration is high, and increased internet availability has facilitated the use of this technology for improving health. The burden of data collection, prolonged data entry time, collation, and analysis of data before reports are made available are overcome using the mobile phone leading to more effective training and service provision.⁵

WAY FORWARD

The Central Regional Health Directorate has been particularly interested in adopting this methodology and plans to continue mobile phone use for design of simple surveys for monitoring and supervision in the future in all its program areas. The RHD has already appointed a Magpi focal person to advance the use of this technology in the region and engaged USAID/FRHP for material and technical support before the end of the project. Other regions will also be encouraged to employ this technology in conducting simple surveys, collecting data from facilities during monitoring and supervision visits for prompt data delivery, and analysis for prompt decision-making.

⁵ USAID/FRHP/GHS GAR Supportive Supervision/Facility Audit, May/June, 2012.

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USAID/FOCUS REGION HEALTH PROJECT, GHANA

Technical Brief

Improving Maternal, Newborn, and Child Health (MNCH)

The USAID/Focus Region Health Project (FRHP), is a 4.5-year USAID funded project managed and implemented by JSI Research & Training Institute, Inc. (JSI) in partnership with World Education Inc., (WEI). USAID/FRHP works in close collaboration with the Ministry of Health (MOH) and the Ghana Health Service (GHS) to strengthen access to, and quality and use of maternal, newborn, and child health (MNCH), family planning (FP), malaria, and HIV services in the Western, Central, and Greater Accra Regions of Ghana.

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INTRODUCTION

The 2008 Ghana Demographic and Health Survey (DHS) showed a decline in infant and child mortality since 2003. While the survey also showed improvement in several maternal health indicators since 2003, the maternal health situation at the beginning of USAID/FRHP in 2009 was troubling. Nationwide, 96% of pregnant women received antenatal care (ANC) from a skilled provider; 77% attended the recommended four or more ANC visits; and 41% did not receive any antenatal care until the second or third trimester. Skilled providers attended only 58% of deliveries; and only 47% women had a postnatal check-up within the first four hours after delivery.ⁱ Particularly alarming were the results of a 2007 National Maternal Health Survey that estimated the maternal mortality ratio (MMR) at 451 per 100,000 live birthsⁱⁱ, which was considerably higher than previously thought. Data available from the GHS information management system (District Health Management Information System, or DHIMS) showed that the institutional MMR declined from 201 in 2008 to 164 in 2010 but still far exceeded the Millennium Development Goal (MDG) target of 54.ⁱⁱⁱ

Sustained improvements in child health and a supportive environment indicate that MDG 4 will probably be achieved by 2015. By contrast, although maternal health indicators are showing improvement, it is unlikely that Ghana will meet the MDG 5 targets.^{iv}

OBJECTIVES AND APPROACH

Improving the quality and availability of MNCH services is a priority for the GHS, and USAID/FRHP has provided technical and financial assistance to support that priority in the three focus regions. USAID/FRHP has also supported health systems strengthening interventions that are needed to sustain improvements in MNCH over time.

Between 2009 and 2013, USAID/FRHP awarded 12 sub-grants to the three RHDs in the focus regions (Greater Accra, Central, Western) with a total value of over US\$4.3 million. In addition, USAID/FRHP awarded 42 sub-grants to DHDs, MHDs, and district/municipal hospitals and health facilities with a total value of approximately US\$1.14 million. USAID/FRHP worked in close partnership with the Ministry of Health (MOH) and the GHS. Interventions intended to strengthen national capacity in areas such as policy, materials development and production, information systems, and logistics management were developed in consultation with a wide range of stakeholders including the GHS, the Ghana Nurses and Midwives Council, regional and district health directorates, teaching hospitals, and the Ghana Registered Midwives Association. USAID/FRHP also worked collaboratively with other USAID-funded projects such as the Behavior Change Support (BCS) Project, Maternal Child Health Integrated Program (MCHIP), and Food and Nutrition Technical Assistance (FANTA) Project, as well as other donors.

MNCH activities supported by USAID/FRHP regardless of whether they were implemented at national, regional, district or facility level generally fell into the following categories:

- » Capacity building of health providers;
- » Upgrades of pre-service school skill labs and improved clinical preceptor training;
- » Facility rehabilitation and equipment procurement;
- » Policy development or updates;
- » Production of policy documents and reference materials.

Capacity Building

Many MNCH capacity building interventions were developed in response to an assessment conducted at the start of USAID/FRHP which found that management of obstetric and neonatal complications at the district level needed to be strengthened to reduce referrals and delays in treatment. To that end, USAID/FRHP supported the following:

- » Preparation of regional resource teams (RRT) to conduct training and supervision in life saving skills (LSS) and basic emergency obstetric and newborn care (BEmONC);
- » Strengthening clinical training sites at Ridge Regional Hospital, La General Hospital, and Tema General Hospital in the Greater Accra Region, and at Effia Nkwanta Regional Hospital in the Western Region;
- » Training of midwives in LSS;
- » Training of general physicians (GPs) in BEmONC to enable them to manage complicated cases and provide better support to midwives. GPs working at hospitals with surgical facilities for cesarean section also received refresher in skills in the method.

In Ghana's health system, the traditional mode of operating has been for the central level to determine health initiatives and provide resources to the regions and districts to implement those initiatives. Resources at the local level are scarce, which can discourage development and implementation of local health initiatives. To strengthen the partnership between USAID/FRHP and the GHS as well as to foster a sense of ownership, strengthen the health system, and improve service quality, USAID/FRHP used sub-grant mechanisms to fund activities at regional, district and facility levels.



Demonstration of clinical skills using models.

In all regions, there are midwives in private practice who operate their own maternity homes where they offer FP and child health services in addition to maternity care. To update their knowledge and skills, the RHDs and DHMTs worked with the Ghana Registered Midwives Association to involve the private midwives in training workshops being conducted. In some cases the workshops were organized specifically for the private midwives; in other cases they were included in workshops being organized for public sector midwives.

To improve the quality of care for infants and children, USAID/FRHP supported a national level review and printing of documents for integrated

management of neonatal and childhood illnesses (IMNCI). The IMNCI roll-out strategy included preparation of regional resource teams in the three regions, development of emergency triage assessment and treatment (ETAT) for acutely ill children, and training of service providers to implement these strategies in service delivery.

Over the life of the project, 5,813 health personnel in the public and private sectors participated in training activities to improve their knowledge and skills. Clinical supervisors visited facilities throughout the focus regions to provide mentoring and on-the-job coaching in MNCH, IMNCI, maternal death audit, and ETAT.

"After the training I had developed enough confidence... that I now take care of most of the obstetric emergencies and do Cesarean Sections. We are only two staff in the obstetrics and gynecology unit but referrals have reduced by 60-70%. This training is very necessary for other colleague doctors that are in my shoes."

-General Physician USAID/FRHP Training Participant

Upgrades of Pre-Service School Skill Labs and Improving Clinical Preceptor Training

While assistance to strengthen pre-service education was largely the mandate of other projects and donors, USAID/FRHP complemented with provision of teaching materials and models to four midwifery schools in Accra, Cape Coast, Tarkwa, and Sekondi to upgrade clinical skill laboratories. USAID/FRHP also supported improvements in preceptor capacity at the hospitals and health centers used by the schools for clinical practice. Some of the midwifery preceptors required updated clinical knowledge and skills in order to teach according to national protocols. USAID/FRHP also provided clinical equipment for use in training of pre-service trainees.

Facility Rehabilitation and Equipment Procurement

USAID/FRHP's support for facility rehabilitation was primarily provided through sub-grants to the RHDs and DHMTs and was used to repair basic infrastructure of maternity and child welfare clinics (CWCs), improve on client flow, improve storage of medicines and supplies, improve environmental hygiene, and increase the number of functional community-based health planning and service (CHPS) compounds. USAID/FRHP procured clinical equipment according to assessments prepared by the three RHDs. In general, this equipment included items such as sphygmomanometers, stethoscopes, weighing scales, delivery sets, examination lights, and storage cabinets.

For several larger hospitals, USAID/FRHP supported more substantial renovations and procured more sophisticated equipment. For example, USAID/FRHP collaborated with Ghana International Women's Club and Kybele Inc. to provide a new theatre in Ridge Hospital dedicated for obstetric emergencies which increased the availability of comprehensive emergency obstetric and neonatal care (CEmONC) for women who need life-saving surgical interventions during childbirth. Similar equipment was donated to Achimota Hospital and Ga South District Hospitals which are located in fast-growing, high-density, peri-urban neighborhoods of Accra. Both hospitals had undertaken renovations using internally generated funds (IGFs) and USAID/FRHP complemented their efforts with clinical equipment to offer CEmONC to reduce maternal and neonatal deaths that occur when referring patients to another facility.

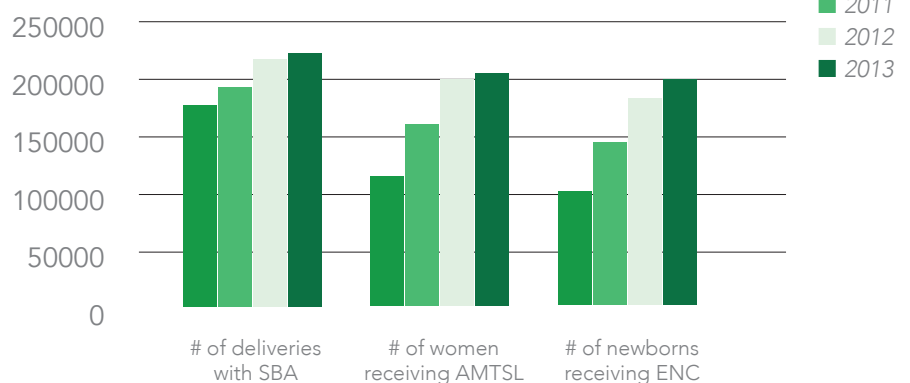


Handing over theatre equipment to Achimota Hospital.

RESULTS

USAID/FRHP's technical and financial support for implementing interventions contributed to improving MNCH services in the three focus regions. Whereas at the start of the project 39% of facilities in the three focus regions provided BEmONC, now 54% of facilities provide the services. The number of ANC checkups provided by skilled providers increased by 15.5%. Skilled birth attendance increased consistently on annual basis for the focus regions, as did the proportions of these births that received active management of the third stage of labor (AMTSL) and essential newborn care (ENC) which are critical components of skilled attendance.

Trends in Skilled Birth Attendance in Focus Regions, 2010-2013



Improving Skilled Attendance Coverage with Performance-Based Financing: Two districts in Central Region experimented with the “personal carers scheme” approach which was intended to increase skilled delivery coverage. In Gomoa West, ANC clients were assigned to specific health care workers as their “personal carers” in order to strengthen relationships and communication. The “personal carers” made home visits and phone calls to remind their clients of ANC appointments, helped them develop birth preparedness plans, responded to questions and concerns, and encouraged them to deliver at health facilities. In the Abura Asebu Kwamankese (AAK) District, traditional birth attendants (TBAs) were enlisted to refer their clients to facilities for delivery. The DHMT also signed an agreement with the transport union to make it easier for women in labor to get to a facility for delivery. The results of these innovations were compelling. In Gomoa West, skilled delivery increased by 14% in one year and AAK recorded an increase of 18% in 2012. These results demonstrate that district-owned solutions to improving access to care or coverage can make meaningful impact.

Increasing Skilled Birth Attendance at Ashaiman Polyclinic:

The maternity unit at the Ashaiman Polyclinic in Greater Accra Region experienced serious management challenges and was dilapidated, resulting in low utilization of the facility. The management team recognized the need to upgrade the maternity unit and improve the quality of services offered in order to increase the number of deliveries with skilled attendance. Using advocacy and leadership skills developed with support from USAID/FRHP, the Ashaiman Polyclinic team used internally-generated funds while leveraging additional funds from the local district assembly and a local church to fully renovate their maternity unit, build a maternity operating theater, construct an incinerator, build a functional laboratory, and procure x-ray equipment. Staff of the maternity unit attended MNCH trainings to update their knowledge and skills. These improvements led to renewed public interest in services at the facility and contributed immediately to a 49% increase in the number of women having four ANC visits, and a 38 percent increase in deliveries with SBAs.



Lekma Hospital providing CEmONC after general physician training.

Lekma Municipality Improves ANC Coverage:

In Ledzokuku-Krowor Municipality (LEKMA) in Greater Accra, there were significant improvements in utilization of maternal health services after support from the project. USAID/FRHP assisted Manna Mission Hospital, a private facility and a major service provider in the municipality, to refurbish and equip its ANC unit. The hospital experienced a 73% increase in ANC registrants and the average number of ANC visits increased from 3.2 in 2010 to 3.9 by 2012. The proportion of clients registering for ANC during their third trimester dropped from 17% to 13.1%, suggesting that clients registered to receive ANC earlier enough during their pregnancies as recommended. Deliveries with skilled attendance also more than doubled from 1,750 in 2010 to 3,835 by 2012. This development also led to an observed drop of 42% in home deliveries between 2010 and 2012, suggesting that ANC counseling and community sensitization were yielding positive results.

CHALLENGES

Despite improvements that have been made, reducing maternal and neonatal morbidity and mortality remain challenging in Ghana where a substantial proportion of women still deliver without a skilled attendant. Making facility deliveries free-of-charge (coverage by health insurance) has been an important step in addressing the cost barrier of care, but getting women in labor to reach a facility is still challenging due to transportation and other mobilization difficulties.

Although the number of health personnel in Ghana continues to increase, geographic distribution is uneven. The rate of increase is also uneven, as for example, the ratio of midwives to the population remains problematic due in part to the large number of midwives that have reached retirement age and leaving active service.

The quality and availability of MNCH services is gradually improving, but sustaining these hard-won improvements will remain a challenge without greater resource commitments from national and local authorities and a more supportive environment.

LESSONS LEARNED & WAY FORWARD

The number of innovations tested by both USAID/FRHP and individual grant recipients that succeeded in improving access to and availability of quality care was inspiring. The partnership with the GHS at regional, district, and facility levels has been very useful in shaping leadership and management capabilities. As a result, technical and financial management capabilities were developed especially amongst the districts and facilities that took part in the performance-based programming. They have developed significant skills in developing proposals and managing grants adequately from international organizations (with strict financial regulatory standards) and this opens opportunities for more leveraging of resources to improve service performance levels.

Continued attention to improving pre-service training is crucial. Each of the midwifery schools benefited from human resource development, improvement in curriculum and provision of basic equipment. The support to the pre-service sector needs to be intensified in order to reduce the burden of in-service training needs for covering more and more of inadequately skilled staff. In addition, greater attention to human resources management is needed within the GHS to ensure equitable staff distribution.

i. Ghana Statistical Service (GSS), Ghana Health Service (GHS), and Macro International. 2009. Ghana Demographic and Health Survey 2008. Accra, Ghana: GSS, GHS, and ICF Macro.

ii. Ghana Statistical Service (GSS), Ghana Health Service (GHS), and Macro International. 2009. Ghana Maternal Health Survey 2007. Calverton, Maryland, USA: GSS, GHS, and Macro International.

NDPC/GOG and UNDP Ghana. 2012 Ghana Millennium Development Goals Report. November 2012.

iii. Ghana's Progress on the Millennium Development Goals (MDGs). Ghana Consultative Group 2010. www.mofep.gov.gh/consultative_2010.htm

iv. LDP: A Catalyst for Accelerating the Pace of Transformation of Service Delivery: The Example from Ashaiman Polyclinic.

This technical brief is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of JSI Research and Training Institute, Inc. and do not necessarily reflect the views of USAID or the United States Government.



USAID/FOCUS REGION HEALTH PROJECT, GHANA

Technical Brief

Performance-Based Financing

The USAID/Focus Region Health Project (FRHP), is a 4.5-year USAID funded project managed and implemented by JSI Research & Training Institute, Inc. (JSI) in partnership with World Education Inc., (WEI). USAID/FRHP works in close collaboration with the Ministry of Health (MOH) and the Ghana Health Service (GHS) to strengthen access to, and quality and use of maternal, newborn, and child health (MNCH), family planning (FP), malaria, and HIV services in the Western, Central, and Greater Accra Regions of Ghana.

USAID/FRHP's technical briefs share and highlight selected strategic approaches, innovations, results, and lessons learned.

INTRODUCTION

Performance-based financing (PBF) is an innovative, results-oriented, and practical approach adapted by USAID/FRHP that connects awards to GHS teams with achievement of agreed-upon, measurable performance targets. Grantee performance is measured against specific indicators to determine eligibility for continued financial support or awards. In this context, good performance means achieving outcomes, favorable results, or goals. Because continued funding depends upon performance, PBF encourages commitment, innovation, and efficiency.

In Ghana's health system, the predominant mode of operating has been for the central level to determine health initiatives and provide resources to the regions and districts to implement those initiatives. Resources at the local level, although available from internally generated funds, are fairly limited, constraining the development and implementation of local health initiatives. This is despite evidence that locally determined health activities are often the most successful.

To engender local solutions, foster local ownership, and improve service quality, USAID/FRHP piloted two adaptations of PBF to support: 1) district health directorates (DHDs) and health facilities; and 2) regional health directorates (RHDs) within the focus regions. To date, USAID/FRHP has provided more than 50 PBF sub grants – 12 with RHDs with a total value of over US\$4 million and 42 with DHDs or facilities with a total value of more than US\$1.1 million.

OBJECTIVES & APPROACH

PBF is one facet of the broad, varied program by which USAID/FRHP seeks to improve the output of the work it supports and the health outcomes for clients and patients. USAID/FRHP's PBF initiative encourages partner organizations – facilities, sub-districts, districts, and regions – to emphasize achievement of results relevant to the common goals of the recipient and USAID/FRHP rather than the *processes* of implementing activities to achieve the results. Examples of results might include improvements in health systems strengthening and/or achievement of health outputs or outcomes.

Through the performance-based approach, USAID/FRHP works with the GHS to identify barriers and design solutions to achieve better results. USAID/FRHP coordinates closely with the RHD, DHD, or hospital team to apply PBF, identifying specific needs and developing locally relevant strategies to address them. GHS teams are encouraged to develop their own proposals identifying the technical areas they wish to address, the desired outcomes/results, and the activities to achieve those results. With this method of support, a sense of ownership is generated as stakeholders are directly invested in achieving the outcomes of the intervention. Recipients have jointly-agreed thresholds of performance (results) that they are to achieve and, contingent upon results being documented through an agreed monitoring tool to the satisfaction of USAID/FRHP, the recipient is eligible for a pre-determined incentive reward.

USAID/FRHP embraces PBF as a means to encourage reform and decentralization in the health system, fostering change from the ground up. In addition to directly involving key stakeholders in the problem solving process, sub grantees are also required to absorb some of the cost to further reinforce ownership and commitment. The requirement for cost share is meant to ensure that the beneficiary (e.g., district, sub-district, or facility) is actively engaged in assuming responsibility for the outcomes.

Through this financing method, USAID/FRHP can directly support achievement of objectives measured through USAID indicators, enhance data management, and reinforce the use of the GHS data management systems for providing a more accurate and a clearer picture of the overall health situation in the three focus regions.

1. **Identifying and Approving Grantees:** USAID/FRHP presents the performance-based program to each RHD and their district and hospital team leaders. Once a potential beneficiary institution expresses interest in a PBF grant, FRHP regional coordinators and technical staff work directly with them to identify technical areas of focus, desired results, and required inputs. GHS teams are encouraged to develop their own proposals to promote locally identified and innovative interventions and foster ownership. All district/facility PBF proposals are presented to the respective RHDs so that they are well-informed of all PBF activities. Each proposal is reviewed by senior FRHP staff member for final adjustments before presentation to USAID. Awarded agreements are between JSI and the selected recipient after each grant receives USAID approval.
2. **Technical Focus and Sustainability:** The technical areas for which USAID/FRHP has supported performance-based programs include family planning, maternal and child health, logistics and supply chain, health information management, supervision, quality assurance, financial management, malaria, waste management, and community-based health planning and services (CHPS) strengthening. Provision of support for these technical areas is based on the premise that the recipient will make a good faith effort to sustain the improvements that are achieved with these resources after the end of the grant.
3. **Indicator Selection:** As the approach is designed around performance, the selection of indicators is a critical part of the PBF process. At or before the start of the project, JSI and the recipient agree on the indicators that will be used to ultimately assess performance and design a data collection and reporting plan which outlines the definitions, data sources, baseline values, and reporting schedule for the indicators. Preference is given to data that are reported via the Ghana Health Service's *District Health Information Management System* (DHIMS).
4. **Monitoring Compliance:** As the grants are being funded under a USAID cooperative agreement, relevant clauses of USAID regulations are included in the sub grants and are part of the compliance procedures for recipients. This includes required approvals from FRHP and USAID. Training in management of US Government funds is conducted by the FRHP financial management department for each sub-grantee.
5. **Monitoring Progress:** A tool for conducting monitoring site visits, the *FRHP PBF Monitoring Guide*, is used to facilitate monitoring. Quarterly reports including both financial reporting and program activities are required to provide FRHP a regular opportunity to monitor both financial and technical progress.
6. **Incentive Awards:** At the conclusion of the sub-grant period, overall performance is assessed and verified with project data and DHIMS data when applicable. If the recipient team attains and documents the results specified in the agreement, the grantee institution is eligible to receive an incentive award in equipment, goods, services, cash or equivalent financing in return for and recognition of the successful achievement of results. The incentive is pre-determined as a percentage of the total activity cost (usually 5-15%) and is intended to support the health system and aid in sustaining improved performance and not to benefit individuals extensively.

Sample Indicators Used in Performance-Based Financing Grants

TECHNICAL AREA	ILLUSTRATIVE INDICATORS*
CHPS	<ol style="list-style-type: none"> 1. Number of newly added functional CHPS zone 2. Clients benefiting from CHPS services
Private Sector	<ol style="list-style-type: none"> 1. Percentage of midwives in private maternity homes correctly using partograph 2. Number of private facilities submitting and maintaining GHS MCH data
Family Planning	<ol style="list-style-type: none"> 1. Increase in counseling visits according to threshold 2. Increased facilities providing full range of methods
Obstetric emergencies	<ol style="list-style-type: none"> 1. Percentage of facilities achieving specified increase in supervised deliveries 2. Percentage of midwives correctly using partograph
Neonatal Care	<ol style="list-style-type: none"> 1. Reduction in number of still births
Quality Assurance	<ol style="list-style-type: none"> 1. Percentage of HCs with appropriate medical waste disposal facilities 2. Percentage of facilities with functional QA teams
Logistics/Supply Chain	<ol style="list-style-type: none"> 1. Less than 20% stock outs of tracer drugs in all facilities 2. Availability of Requisition, Issue and Receipt Vouchers (RIRV) in all facilities 3. Percentage of facilities with inventory levels established
Financial Management	<ol style="list-style-type: none"> 1. Overall budget-expenditure variance between +/- 10% 2. Cost share greater than 10% achieved 3. Problem vouchers less than threshold amount
DHIMS	<ol style="list-style-type: none"> 1. 100% of facilities reporting through DHIMS 2. All data from facility levels endorsed by head of facility 3. Timely submission of reports by facilities

*Targets for each indicator are determined separately with each grantee on a case by case basis.

RESULTS

As of June 2013, USAID/FRHP had signed 54 PBF sub-agreements, 42 with districts or facilities and 12 with RHDs. All 42 district/facility sub-grants, executed with 32 separate sub-grantees, reached their completion. An important by product of the process of achieving these results is that all recipient organizations demonstrated the ability to implement agreements according to JSI policies and USAID regulations. There were no significant contractual financial management issues encountered.

Of the 42 district/facility sub-grants, 24 included family planning program indicators, 27 had MNCH services indicators, and 12 had health systems strengthening indicators. It is difficult to consolidate the achievements of the sub-grants and conclusively attribute all their achievements to PBF alone for several reasons. The activities varied across grants since activities were locally determined; geographic areas were sometimes disparate; and other USAID/FRHP supported activities also contributing to service output might have also been taking place in these districts. It is beyond the scope of this document to attempt to attribute causality. However, some aggregate statistics show the extent to which the PBF mechanism has contributed to improvements in the Ghanaian health system in the focus regions. Generally, most sub-grants have achieved the majority of their proposed results, indicating that PBF can be an effective mechanism for reinforcing achievement of results.

CHALLENGES

The literature on PBF might lead one to think that once desired results have been identified and contracted for, the PBF process alleviates some of the burden of monitoring activities otherwise required. Experience under FRHP in Ghana reveals that particularly at the outset of the program, extensive consultation, technical support, documentation, and training are required. This process includes substantial training in financial management policies and procedures and ongoing technical support provided by USAID/FRHP financial management staff. In addition, since the primary responsibility for stewardship of US Government funds remains with JSI, financial monitoring and attention to regulations and compliance required support from both the grantor and the implementing grantee.

Out of a total of 56 district/facility level PBF proposals submitted to USAID/FRHP from the three focus regions, 42 were approved and implemented. The proposals that did not meet USAID/FRHP standards for funding were rejected, after revisions encouraged to improve them did not succeed. Nearly all submissions required considerable technical support from USAID/FRHP to bring them to the required standards before submission to USAID for final approval for implementation.

There are USAID regulations, such as the Tiarht Amendment, which constrain some of the flexibility that sub grantees have for setting performance targets in family planning. However, these regulations need not preclude family planning program participation as long as relevant regulations are taken into consideration. There are resources available for guidance in conforming to these regulations, two of which are: USAID E-Bulletin on Strengthening *Voluntary Family Planning Services with Performance-Based Incentives: Potential and Pitfalls* (January 2011); and *Performance Based Incentive Primer for USAID Missions* (July 2010).

Most of sub grantees have achieved the majority of their proposed results. However, a few of the implementers did not achieve any results. These cases are worthy of further study to determine whether there are any common factors among them that hinder their success, and lessons learned serve as guide for future application.

Selected Results from Completed PBF Grants:

- Over 250 service providers were trained in various aspects of life saving skills.
- Skilled birth attendance at delivery increased by 28%, from 25,552 in 2010 to 32,535 in 2012 (DHIMS).
- 531 service providers were trained in family planning counseling and contraceptive technology including providing short-term methods.
- 47 additional facilities are providing family planning with PBF grant funding including 27 new CHPS zones that are now functional and 13 private facilities (maternity homes and clinics).
- Family planning counseling visits increased by 51%, from 143,374 in 2010 to 215,285 in 2012 for 12 districts implementing PBF sub grants with family planning objectives as at 2012.
- Family planning couple-years of protection (CYP) increased by 110%, from 32,523 in 2010 to 68,177 in 2012 in 12 districts.
- 204 service providers were trained to provide Jadelle insertion/removal and 112 additional facilities are now offering long term family planning methods. CYP for Jadelle increased five-fold from 5,563 in 2010 to 30,131 in 2012.

LESSONS LEARNED & WAY FORWARD

PB is one facet of the broad, varied program by which USAID/FRHP seeks to improve the output of the work it supports and the health outcomes for clients. Since USAID/FRHP works primarily with health facilities, providers, and managers to strengthen provision of services and does not emphasize activities at the community level, FRHP PBF experience emphasizes the supply side. In the future, PBF models applied to community action and other demand side interventions could provide interesting results.

FRHP supports a *Leadership Development Program* (LDP) activity as part of its portfolio, although this was not originally foreseen in the cooperative agreement and was only implemented towards the end of the first year of the project. Nonetheless, there should be an opportunity for synergy between LDP-identified challenges/solutions and PBF awards.

In addition to the absorptive capacity considerations of sub-grantees, JSI as the grantor also has constraints that must be managed. Since the funds are USAID funds, grantors like JSI are subject to financial audit after the fact. It is critical that the grantor follows the necessary procedures to ensure that regulations are being applied correctly. The need to conform to USAID regulations can result in somewhat of a hybrid performance-based process wherein the sub grantee is rewarded based on satisfactory performance, but the grantor is still obligated to monitor inputs, vouchers, and receipts to document stewardship of funds. In a more purely performance-based system that would not necessarily be the case, and only the achievement of results might be monitored. This can make the administrative process less efficient than it might otherwise be but provides for adequate accountability. As donors, implementing agencies, and service providers continue to gain more experience, a more streamlined and efficient process will likely result.

Transitioning from the traditional mode of conducting activities based on budgeted cost to targeting achievement of results entails a paradigm shift on the part of all participants. Naturally, some individuals are quicker to embrace this relatively novel way of thinking than others are. This approach might not be for everyone early in the process. Hopefully, as it gains more acceptance, organizations advance along the learning curve and people become more familiar, it will be more widely accepted and applied.

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USAID/FOCUS REGION HEALTH PROJECT, GHANA

Technical Brief

Supply Chain Management of Public Sector Health Commodities

The USAID/Focus Region Health Project (FRHP), is a 4.5-year USAID funded project managed and implemented by JSI Research & Training Institute, Inc. (JSI) in partnership with World Education Inc., (WEI). USAID/FRHP works in close collaboration with the Ministry of Health (MOH) and the Ghana Health Service (GHS) to strengthen access to, and quality and use of maternal, newborn, and child health (MNCH), family planning (FP), malaria, and HIV services in the Western, Central, and Greater Accra Regions of Ghana.

USAID/FRHP's technical briefs share and highlight selected strategic approaches, innovations, results, and lessons learned.

INTRODUCTION

The availability of high-quality and affordable health and family planning commodities at service delivery points (SDP) is an essential element of quality services. An effective supply chain requires trained staff and necessary logistics information management tools, infrastructure, and technical support; timely monitoring of supply status and reporting; and an efficient distribution system. In addition, national-level agencies (such as Procurement and Supplies Directorate of Ministry of Health, Central Medical Store, Stores Supplies and Drug Management Division and Family Health Division of the Ghana Health Service), development partners, and donors all need to fulfill their roles efficiently and effectively to allow the regional and facility levels to function well. In spite of the 2002 policy requiring an integrated report, requisition, issue and receipt voucher (RRIRV), a unified tool for health logistics management, there is still widespread use of separate forms for requisition, issues, receipts, store receipt advice, certificate of non-availability and reports within the GHS.

USAID/FRHP has supported supply chain improvements at the regional and facility levels as part of its major objectives for health systems strengthening. A baseline survey¹ conducted by USAID/FRHP in 2010 indicated that stock-outs of essential health commodities were common and significant. For example, 76% of health facilities had stock-out of at least one FP method in the preceding six-month period before the survey. Similarly, there were stock-outs of 77% for malaria commodities, 52% for MNCH commodities, and 54% for HIV commodities.

OBJECTIVES & APPROACH

Considering the challenges above, USAID/FRHP and USAID | DELIVER (also managed by JSI and implemented in Ghana) in collaboration with GHS/Stores Supplies and Drug Management Division partnered to strengthen the supply chain system for health commodities in the three USAID/FRHP project regions and to reduce stock-outs of essential health commodities using the following strategies:

- » Improve the use of the report, requisition, issues, receipts voucher (RRIRV) to ensure recording and reporting of health commodities logistics information at all GHS health facilities;

¹ Ghana Health Services, USAID Focus Region Health Project/JSI Research & Training Institute, Inc. (2010) Baseline Survey Report. FRHP, Ghana

- » Develop the capacity of supply chain practitioners (e.g., pharmacists, supply and procurement officers, storekeepers) at the facility level to implement the GHS supply chain standard procedures and tools. For example, the RRIRV and the Logistics Management Information System (LMIS) to better manage health commodities and enable monitoring of supply status and effective distribution;
- » Print and disseminate reference documents and LMIS tools to health facilities;
- » Improve infrastructure for storage of health products at selected facilities and warehouses;
- » Provide continuous technical and monitoring support at the central level and in the field to improve the functioning of the supply chain system; and
- » Develop, test, and evaluate a state of the art mhealth application (called the “Early Warning System”) for monitoring stock status of commodities at health facilities.

ACTIVITIES

1. Logistics Management Training

The approximately 300 health commodities regularly used in the public sector system are managed by pharmacists/storekeepers/ supply officers who are familiar with health commodities and are considered “traditional store managers.” At the same time there are medical assistants, midwives, and nurses whose primary role is service delivery but they also have some role in health commodity management and can be classified as “non-traditional store managers.” To ensure compliance with the GHS Standard Operating Procedures (SOPs) for Logistics Management², USAID/FRHP supported training on the new procedures for most “traditional” and “non-traditional” store managers in the three USAID/FRHP regions.

To ensure sustained capacity of the GHS to roll out the SOPs, USAID/FRHP developed a cadre of core trainers by conducting a training-of-trainers on logistics management of public sector health commodities for a total of 22 trainers (16 officers from the focus regions, four from the GHS national level, and two from USAID | DELIVER). Subsequently, USAID/FRHP provided technical support and funding to conduct a three-day logistics management training for approximately 800 (200 “traditional store managers” and 600 “non-traditional store managers”) of the total 920 “traditional store managers” and “non-traditional store managers” in the Western, Central, and Greater Accra Regions. SOPs for logistics management cover all aspects of logistics management including ordering, shipping, receiving, storage, and distribution of health commodities. USAID/FRHP also supported GHS to train pharmacists, supply officers, and procurement officers on identifying and processing items in their stores for disposal, which makes room for more efficient storage. Routine review of stock records (bin cards and stock ledgers) helps the store managers to monitor stocks and avoid stock-outs. In order to emphasize and strengthen this function, USAID/FRHP also organized trainings on monthly stock monitoring.

2. Provision of Logistics Management Information System (LMIS) Tools

Record keeping and reporting forms such as inventory control cards and RRIRVs are the primary sources of data for the LMIS. As these forms were found to be in short supply in the health system, FRHP reproduced them in significant quantities and transported and distributed them to all major health facilities in the three program regions. Follow up monitoring indicated health staff appreciation for these supplies and active use for commodity stock tracking.

3. Refurbishment of Regional Medical Stores and Health Facility Stores

To ensure and maintain commodity integrity, efficacy, safety, and security, USAID/FRHP supported the refurbishment of the regional medical stores (RMS) and selected health facilities in the three focus regions. Refurbishments included improvement in the physical structure (renovation), improvement of storage conditions (e.g. installing new air conditioning, procurement of refrigerators with thermometers), and the provision of tools and equipment. The project provided refrigerators for the storage of vaccines and other heat-sensitive (“thermolabile”) medicines, metallic shelves, and other furnishings as part of the refurbishments of some of the major stores.

4. Monitoring and Supervisory Support Visits

USAID/FRHP trained regional and district level officers to visit a sample of facilities within their catchment areas periodically for logistics monitoring using a new checklist developed by the Supplies, Stores and Drugs Management Division of the GHS

² Ghana Health Services June 2010, *Logistics Management of Public Sector Health Commodities in Ghana, Standard Operating Procedures Manual*, Accra, Ghana

with USAID/FRHP and USAID | DELIVER input. During these visits, the supervisors provided on-the-job training and technical support as needed. The supervisors also supplied LMIS tools such as bin cards and RRIRVs in facilities where these supplies had run out.

5. Scheduled Delivery of Health Commodities

The GHS prescribes a scheduled delivery system to maintain health commodity supply by the RMS to the various health facilities. However, due to a lack of vehicles and other resources, only two of the ten regions in the country have been conducting routine scheduled deliveries. USAID/FRHP assisted one of them, the Western Region, to revise delivery routes to accommodate the newly opened facilities. USAID/FRHP is continuing advocacy and facilitation for the other two focus regions to begin implementing scheduled delivery.

6. Peer Review Process for Logistics Improvement

USAID/FRHP has initiated and supported inter-district and inter-regional peer review meetings on logistics management. These review meetings provide a platform for the exchange of good practices and the provision of constructive criticism. The areas and issues discussed at the meetings include commodity availability/stock-out rates; availability of data (inventory control cards) and reporting; storage conditions; staff training; financing and pricing of contraceptives; and status of the scheduled delivery system. Best practices shared at the forums are being replicated in some districts and facilities that experience challenges with logistics management performance.

7. Implementation of Supply Chain 'Early Warning System'

In collaboration with USAID | DELIVER, GHS/Policy Planning Monitoring Evaluation, and GHS/Stores Supplies and Drug Management Directorates, USAID/FRHP designed, piloted, and evaluated a "dashboard" Early Warning System (EWS) in all health facilities in 24 districts in the three project regions. USAID/FRHP contracted with Dimagi Inc., a U.S.-based information technology (IT) contractor, to develop the internet interface for the system and trained staff from all facilities in its use, and has provided technical support throughout implementation.³

RESULTS

USAID/FRHP supply chain management activities have covered a range of areas including developing a training cadre, rolling out a training program, reproducing and disseminating existing tools and guidelines, developing state-of-the-art mHealth applications, undertaking targeted refurbishments, and supporting supervision. As a result, LMIS reporting has improved in the three regions. All health facilities in the regions that take their commodities from their respective RMS now complete and submit RRIRVs every month. Inventory control cards are now used for commodity tracking and are updated appropriately at the health facilities. The USAID/FRHP-supported health facilities are among the few in Ghana that use the RRIRV tool to consistently report on monthly consumption and stock levels of commodities. For example, the reporting status for RRIRVs in Western Region increased from 59% in 2010 to 68% in 2012. The remaining two regions delayed implementing the use of RRIRV; Central Region started in 2012 while Greater Accra Region started in 2013.

Annual monitoring visits to a sample of health facilities (approximately 18–22) in each of the three USAID/FRHP program regions in 2010, 2011, and 2012 have indicated a decreasing trend in stock-outs of 20 tracer commodities from 34% in 2010 to 10% in 2011. However, systemic stock-out of several items among the 20 tracer commodities⁴ at the national level in the Central Medical Stores (CMS) resulted in an increase in stock-outs to 18% in 2012.



A comprehensive manual developed by JSI-implemented USAID | DELIVER with USAID Funding.

³ For more detailed information on the EWS, please reference USAID/FRHP's Technical Brief on EWS.

⁴ 1Male condom, 2Microgynon, 3Depo-Provera, 4Jadelle, 5Microlut, 6Norigynon, 7AZT/3TC (Combivir), 8Nevirapine 200Mg Tab, 9Lamivudine 150Mg Tab, 10 Zidovudine Syrup, 11Nevirapine Syrup, 12 First Response-HIV, 13Oraquick, 14TB Category 1 kit, 15TB Category 2 kit, 16ACT Adult, 17ACT Paediatric 18Sulphadoxine-Pyrimethamine & 19First Response-Malaria & 20ITN

Establishing maximum and minimum (max-min) levels of consumption for each individual commodity and the use of inventory control cards are the basic foundations of effective stock management. Logistics management trainings supported by USAID/FRHP led to application of relevant tools and definition of the required indices for respective commodities at the GHS facilities. Use of max-min levels have improved over the past three years in all three focus supported regions from an average of 45% in 2011 to 67% in 2013. Similarly, the percentage of health facilities using inventory control cards also increased on average for the three focus regions from 82% in 2011 to 91% in 2013. These practices contribute to reduction in stock-outs of health commodities and thereby improve program performance and achievements of objectives or results.



A well-managed government health facility store after USAID/FRHP training.

A midterm internal program review⁵ of USAID/FRHP conducted by an independent consultant reports a very positive reception from GHS managers and service providers:

"The logistics management training received widespread praise from nearly every level of the health system."

"The logistics management course has helped GHS personnel understand when to order drugs, how much to order, how to reduce wastage, and proper disposal of expired commodities."

CHALLENGES

In spite of the progress described above, challenges inevitably persist in the supply chain. At times, there is limited and inconsistent MOH/GHS funding for the procurement of program commodities such as those for FP, HIV/AIDS, malaria, and tuberculosis. Recently, the commodity security committees and development partners, particularly USAID, have acted to make most FP and malaria products available at the national level for the foreseeable future and currently RMS and facilities are able to replenish products. However, a prerequisite for availability of health products at health facilities is maintaining their availability at the central level and the necessary financing and procurement processes, as well as availability of a functioning pipeline infrastructure and resources for distribution. There is limited storage space in most facilities and they either do not have store rooms or have very small spaces that cannot contain the maximum stock quantities of the approximately 300 products. There is also limited GHS funding for routine monitoring of supply chain management activities. The GHS does not conduct routine monitoring of the supply chain system as the budget for such activity is insufficient. Most health facilities do not have traditional storekeepers so the stores are managed by nurses and other paramedics who have other primary job responsibilities and cannot give the attention needed to maintain an adequately managed and consistent supply.

WAY FORWARD

Good progress has been made in improving supply chain management over the past three years. The GHS should endeavor to sustain the gains made so far in the area of supply chain management by providing leadership and continuing investments in staff trainings, improving warehouse conditions and ensuring availability of recordkeeping and reporting forms.

⁵ JSI Research & Training Institute, Inc. 2012, USAID Focus Region Health Project Midterm Internal Program Review, Accra, Ghana.

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