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JSI Research & Training Institute, Inc.

USAID/FOCUS REGION HEALTH PROJECT, GHANA

FINAL REPORT

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ACRONYMS

ACT	Artemisinin-based combination therapy
AIDS	Acquired immunodeficiency syndrome
AMTST	Active management of the third stage of labor
ANC	Antenatal care
ARH	Adolescent reproductive health
ARI	Acute respiratory infection
ARV	Antiretroviral
ART	Antiretroviral therapy
AS/AQ	Artesunate/amodiaquine
ATF	Accounting treasury and finance
BCS	Behavior change support
BEmONC	Basic emergency obstetric and neonatal care
BFHI	Baby-Friendly Hospital Initiative
BTL	Bilateral tubal ligation
CA	Cooperative agreement
CHC	Community health committee
CD/VAT	Custom duty/value added tax
CHIM	Centre for Health Information Management
CHN	Community health nurse
CHO	Community health officer
CHPS	Community-based health planning and services
CHV	Community health volunteer
CMAM	Community management of acute malnutrition
COPE©	Client Oriented Provider Efficient
CPR	Contraceptive prevalence rate
CR	Central Region
CRS	Catholic Relief Services
CT	Counseling and testing
CTU	Contraceptive technology update
CVCT	Couple voluntary counseling and testing
CWC	Child welfare clinic
CYP	Couple year protection
DFID	Department for International Development
DHD	District health directorate
DHIMS	District health information management system
DHMT	District health management team
DHS	Demographic Health Survey
DTC	Drugs and Therapeutics Committee
ENC	Essential newborn care
EOP	End-of-project
EmONC	Emergency obstetrics and neonatal care

EPI	Expanded program on immunization
ETAT	Emergency triage assessment and treatment
EWS	Early warning system
FANC	Focused antenatal care
FANTA	Food and Nutrition Technical Assistance
FHD	Family Health Division
FP	Family planning
FRHP	USAID Focus Region Health Project
FY	Fiscal year
G6PD	Glucose-6 phosphate dehydrogenase
GF	Global Fund
GHS	Ghana Health Service
GIWC	Ghana International Women's Club
GIS	Geographic information system
GOG	Government of Ghana
GP	General practitioner
HEW	Health extension worker
HIMS	Health information management system
HIV	Human immunodeficiency virus
HTC	HIV testing and counseling
ICD	Institutional care division
IMAAI	Integrated management of adult and adolescent illnesses
IMNCI	Integrated management of newborn and childhood illness
IPC	Infection prevention and control
IPTp	Intermittent preventive treatment of malaria in pregnancy
IT	Information technology
ITN	Insecticide-treated bed net
IUD	Intra-uterine device
IYCF	Infant and young child feeding
JSI	JSI Research & Training Institute, Inc.
JICA	Japan International Cooperation Agency
KATH	Komfo Anokye Teaching Hospital
KBTH	Korle-Bu Teaching Hospital
LAPM	Long-acting and permanent method
LCD	Liquid crystal display
LDP	Leadership development program
LLIN	Long-lasting insecticide-treated net
LMIS	Logistics management information system
LSS	Life-saving skills
MA	Medical assistant
MDG	Millennium Development Goal
MARP	Most-at-risk population
M&E	Monitoring and evaluation

MCH	Maternal and child health
MHD	Municipal/Metropolitan Health Directorate
MICS	Multiple indicator cluster survey
MIS	Malaria indicator survey
MIP	Malaria in pregnancy
MNCH	Maternal neonatal and child health
MOH	Ministry of Health
MOP	Malaria operational plan
MSIG	Marie Stopes International Ghana
NACP	National AIDS Control Program
NCE	No-cost extension
NGO	Nongovernmental organization
NHIS	National Health Insurance Scheme
NMCP	National Malaria Control Program
NSV	No-scalpel vasectomy
OJT	On-the-job training
OPC	Outpatient care
OPD	Outpatient department
OPM	Oxford Policy Management
PBF	Performance-based financing
PEP	Post-exposure prophylaxis
PEPFAR	President's Emergency Plan for AIDS Relief
PIH	Pregnancy-induced hypertension
PLHIV	People living with human immunodeficiency virus
PMTCT	Prevention of mother-to-child transmission
PMI	President's Malaria Initiative
PPFP	Postpartum family planning
PPH	Postpartum hemorrhage
ProMPT	Promoting Malaria Prevention and Treatment Project
PROMISE	Promote Maternal and Infant Survival Excellence
QA	Quality assurance
QHP	Quality Health Project
QI	Quality improvement
RDT	Rapid diagnostic test kit
RH	Reproductive health
RHD	Regional Health Directorate
RRIRV	Report requisition issue receipt voucher
RRT	Regional Resource Team
RUTF	Ready-to-use therapeutic foods
SCM	Supply chain management
SDM	Standard days method
SHOPS	Strengthening Health Outcomes through the Private Sector
SHARP	Strengthening HIV/AIDS Response Partnerships

SHARPER	Strengthening HIV/AIDS Response Partnerships and Ensuring Results
SO	Strategic objective
SOP	Standard operating procedure
SRH	Sexual reproductive health
SP	Sulphadoxine-pyrimethamine
SSDM	Stores supplies and drug management
TB	Tuberculosis
TOT	Training-of-trainers
U5	Under five
UCSF	University of California at San Francisco
UG-SPH	University of Ghana School of Public Health
UN	United Nations
UNFPA	United Nation Fund for Population Activities
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VCT	Voluntary counseling and testing
VSC	Voluntary surgical contraception
WEI	World Education, Inc.
WHO	World Health Organization
ZEHRP	Zambia Emory HIV Research Project

LETTER FROM THE CHIEF OF PARTY

Nearly five years ago, USAID/Ghana awarded its Cooperative Agreement (CA) Number 641-A-00-09-00030-00 to JSI Research & Training Institute, Inc. (JSI) and its partner, World Education Inc. (WEI) to implement the USAID Focus Region Health Project over a period of 4.5 years. The purpose of the Focus Region Health Project (FRHP) was to strengthen access to and quality and use of maternal, newborn, child health, family planning, nutrition, malaria, and HIV services in three coastal regions of Central, Greater Accra, and Western. Two additional regions, Ashanti and Eastern, were included for HIV services only.

The project's vision was to contribute to the goals of the Ministry of Health (MOH) and the Ghana Health Service (GHS) by supporting regional health directorates, district health management teams, and health facilities in their continuing efforts to offer a comprehensive, well-managed service system to sustain the health and well-being of women, children, men, and families and the community as a whole. Strategic imperatives that underpinned the project's efforts toward achieving this vision and goals included building ownership at the regional, district, and sub-district levels; building and using functional partnerships and collaborations; applying evidence-based and transparent decision-making processes for program implementation; and hosting capacity development for sustainability.

The project applied a performance-based approach to program development and implementation. Capacity-building in the key technical areas defined in the cooperative agreement were supported through annual performance-based grants to the GHS regional and district directorates and some major hospitals. This allowed the respective directorates to apply top-down and bottom-up strategies and local-context approaches to improve service coverage (more access by population) and quality outcomes (effectiveness). Incentive awards tied to effort and attainment of agreed targets boosted competitiveness and motivation of program implementers.

FRHP achieved notable results and made substantial progress for indicators across almost all the technical and health systems' program areas. Foremost among these was the doubling of the contraceptive prevalence rate in the project regions within the space of three years, compared to baseline figures from the DHS 2008. Similarly, the rate of skilled attendance at birth increased by nearly a fifth of baseline figures, and quality of care at delivery and for newborns improved by nearly a quartile, evidenced by the availability of essential newborn care and practice of active management of the third stage of labor. The burden of malaria among public health threats continually reduced as laboratory diagnosis, and effective treatment with artemisinin-based combination therapy has increasingly become routine practice at health facilities. Ghana's HIV prevalence continually declined over the past decade, attesting to the importance of global funding in nationwide expansion of prevention, testing, counseling, and treatment facilities, and quality improvement, stigma reduction, and behavior change communication efforts from partners including FRHP. Nutrition formed a modest proportion of the project's objectives but had salient achievements by way of an almost universal roll out of infant and young child feeding practices at almost all major facilities in the project regions, as well as the expansion of community management of acute malnutrition in a number of districts.

The successes of the technical programs were premised on a major contribution made by the project in health systems strengthening for the sustenance of service operation capacity. The GHS was supported to revamp clinical training and supervisor teams so that it could continue to address health workers' needs for task-shifting and quality to meet integrated services that are responsive to client needs. The culture of continuous quality improvement desired by the GHS was boosted by the development of functional quality assurance teams, which had a key role in other special quality activities such as rational use of medicines and maternal death audits. Similarly, the health information and supply chain and logistics management systems underwent major operational strengthening, which enabled the transformation to electronic data reporting through the DHIMS and revised standard operating procedures, such as the use of the requisition, reports, issues, and receipts vouchers for stock management. FRHP's investment in piloting the Early Warning System with the USAID | DELIVER project proved successful and launched the supply chain operation into the electronic age, providing the benefit of real-time status of stocks of public health commodities.

It is evident from the foregoing summaries that FRHP achieved the major goal of improving access to and quality of health services through well-developed programs and strategies implemented in line with the policies and strategies of the GHS. FRHP leaves a palpable legacy as Ghana works toward achievement of MDGs 4, 5, and 6. USAID/Ghana's provision of resources, guidance, support, and effective monitoring were critical for keeping implementation of programs focused and on track. Equally important were the huge contributions from partner organizations Marie Stopes International Ghana, World Education, the USAID | DELIVER Project, USAID projects including Behavior Change Support Project, FANTA, ProMPT, and multilateral partners UNICEF, UNFPA, and WHO. It would be remiss not to mention that the MOH, GHS, and their subsidiary directorates and facilities were the primary collaborators, whose readiness to partner and work with FRHP led to mutually beneficial results that are having a positive effect on the health of all Ghanaians.

Dr. Edward Bonku
FRHP Chief of Party

EXECUTIVE SUMMARY

In August 2009, the USAID Focus Region Health Project (FRHP) was awarded through USAID/Ghana Cooperative Agreement (CA) Number 641-A-00-09-00030-00 to JSI Research & Training Institute, Inc. (JSI) and its partner World Education Inc. (WEI). Originally a four-year project, FRHP's purpose was to strengthen access to, and quality and use of maternal, newborn, and child health (MNCH) and family planning (FP) services in the Central, Greater Accra, and Western regions. Major modifications made to the CA over the course of implementation included adding malaria and HIV technical areas in the second project year, extending geographical coverage to include the Eastern and Ashanti regions with HIV programs, and a 6-month no-cost extension (NCE), extending the close-out date of the project to February, 28 2014. The overall obligated funding was U.S. $38,340,000.

The principal goal of the project was to improve the health status of Ghanaians, particularly in the focus regions, thereby increasing the potential of the country to achieve Millennium Development Goals (MDGs) 4, 5, and 6. The project's key strategies included building ownership at the regional, district, and sub-district levels; building and using functional partnerships and collaborations; applying evidence-based and transparent decision-making processes for program implementation and host counterpart capacity development for sustainability.

Key health indicators tracked through a variety of sources provide evidence that **there was consistent progress in the major health indicators in the focus regions during the project's implementation**. These and other health status outcomes and health system improvements are expected to be found in the improved impact data after the next Demographic and Health Survey (DHS) is conducted in Ghana in late 2014.

FAMILY PLANNING

FRHP achieved the largest gains with its family planning (FP) program, **nearly doubling couple year protection (CYP) (84% increase) and increasing the number of FP service delivery points by 126%**. These achievements were made possible through several service provider trainings and refreshers and the provision of kits and other auxiliary equipment. Postpartum FP integration with other MNCH services was also conducted at several facilities, expanding opportunities for promoting healthy timing and spacing of pregnancies to mothers. Collaboration with Marie Stopes International Ghana (MSIG) for outreach FP services in 10 mostly rural districts in the Central and Western regions resulted in the uptake of 20,000 long-acting and permanent methods (LAPMs). FRHP also led the introduction of the Standard Days Method® (SDM) into the Ghana FP method mix in partnership with the Georgetown University/Institute for Reproductive Health.

MATERNAL, NEONATAL, AND CHILD HEALTH

FRHP's work contributed to an **increase in skilled birth attendance in the focus regions, from 69% at baseline to 80% at project end**, in addition to increased access to services. Basic emergency obstetric and neonatal care (BEmONC) provision at peripheral health facilities (district hospitals and health centers) was expanded by increasing the number of trained midwives and physicians along with the provision of related clinical equipment

for service delivery. Child survival rates in the focus regions were improved through the implementation of strategies such as the emergency triage assessment and treatment (ETAT) approach for managing acutely ill children, and the integrated management of childhood and neonatal illnesses (IMNCI) for comprehensive preventive and curative care. Increased emphasis and progress was also made on the health care needs of youth with support for and roll-out of adolescent reproductive health programs at health facilities and links with community-support mechanisms.

NUTRITION

FRHP supported the GHS nutrition program to improve child survival through improved breastfeeding initiation and management, appropriate introduction of complementary feeding, management of predisposing conditions for malnourishment, and early identification and management of severe acute malnutrition (SAM). Practice of the infant and young child feeding (IYCF) guidelines at several facilities in the focus regions was boosted through training and follow up of about 600 health workers from a variety of cadres (e.g., nutritionists, nurses, midwives, physicians). Similarly, FRHP collaborated with the Food and Nutrition Technical Assistance (FANTA) project to expand implementation of the community management of acute malnutrition (CMAM) strategy in districts in the focus regions by training more than 400 service providers. Introduction of zinc treatment for diarrhea was also rapidly rolled out at health facilities following a national level training-of-trainers by the SHOPS project, training more than 500 health workers to dispense this treatment. The GHS was also supported to continue breastfeeding promotion efforts with training and certification of facilities as “baby friendly” under the Baby-Friendly Hospital Initiative (BFHI).

MALARIA

Evidence continues to accumulate on the positive results of the collaborative efforts of the project with the Global Fund to Fight Aids, Tuberculosis, and Malaria (GFATM), the President’s Malaria Initiative (PMI), DFID, and other partners to combat malaria, the leading cause of morbidity and health facility visits in Ghana. FRHP expanded focused antenatal care (FANC) at health facilities and trained large numbers of service providers (including midwives, CHOs, medical assistants, and physicians) in the three focus regions, thereby improving prevention of malaria during pregnancy and malaria case management practices. The practice of malaria diagnosis confirmation through testing at facilities keeps increasing because several health workers were trained in the use of RDT and with supplied test kits. In addition, FRHP significantly supported the large scale long lasting insecticide treated net (LLIN) door-to-door hang-up campaigns, involving **distribution of more than 2 million nets in the Central and Western regions**. Drug and therapeutic committees (DTCs) were established or reactivated for malaria quality assurance and monitoring of rational use of medicines at health facilities.

HIV AND AIDS

The consistently decreasing trend in HIV prevalence in Ghana over the last decade is attributable to the GHS National HIV/AIDS Control Program (NACP) and several other partners, including PEPFAR. FRHP increased PMTCT service expansion by training and refreshing nearly 1,500 service providers and used the COPE© (Client-Oriented, Provider Efficient Services) methodology for continuous quality improvement at more than 40 major hospitals that provide HIV services. FRHP also helped to reduce stigma and discrimination against people living with HIV (PLHIV) by training more than 4,000 health facility staff in five of the ten regions of Ghana. **Over the life of the project, there was a 48% increase in HIV sites that provide services for prevention of mother-to-child transmission (PMTCT), a 41% increase in sites providing testing and counseling, and a 22% increase in sites providing antiretroviral therapy (ART).**

PERFORMANCE-BASED PROGRAMMING

FRHP improved the capacity of GHS regional health directorates (RHDs) to execute their annual health programs with full responsiveness and accountability for applying U.S. Government (USG) funds to support activities that fall within USAID's strategic objectives (SOs). Sub-agreement awards to the RHDs increased over time and cumulatively amounted to U.S. $4,378,260. The performance approach to capacity was also applied at the subregional levels, with 42 performance-based financing (PBF) grants to district health directorates (DHDs) and district/municipal hospitals. **A total value of more than U.S. $1.1 million** was applied through these grants to increase service coverage and minimize gaps in quality. Sixteen of the 42 grantees achieved 100% or more of their set targets, and nine achieved between 70-100%. Grantees applied local solutions to improve or expand FP, MNCH, and malaria services, and to strengthen health information systems and earned commensurate performance incentives. Due to prudent grants' management developed through orientations and guidance from FRHP, independent assessments resulted in few adverse financial audit findings.

CAPACITY BUILDING

The GHS was supported to refine and expand its in-service training capabilities. Trainer cadres were built at the regional, district, and facility levels. FRHP procured associated reference manuals and other documents, as well as anatomical and demonstration models. Trainers are now available to facilitate in-service trainings for several program areas, including FP, MNCH, nutrition, malaria, and HIV. Regional resource teams were developed or re-established through training-of-trainers. Over the course of the project, in-service **trainings on more than 30 technical areas were attended by more than 40,000 people**.

SUPERVISION

Clinical supportive supervision using on-the-job training checklists and anatomical models for practical demonstrations, mentoring, and motivating health care providers to attain quality performance for better health

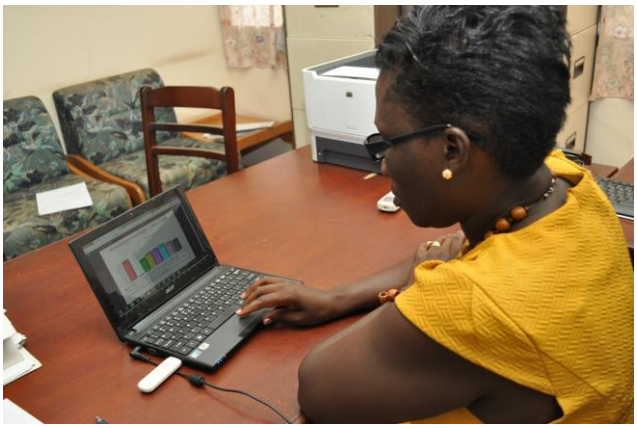
outcomes in most project-supported technical areas was conducted. A peer-review approach to supply chain management and testing of an electronic application for the simultaneous monitoring of data entry, analysis, and results enabled immediate feedback to supervisory staff at health facilities in the focus regions.

LEADERSHIP DEVELOPMENT PROGRAM

GHS adopted the Leadership Development Program (LDP) to instill vision-sharing, mobilization, teamwork, and ownership at all management levels. The LDP was implemented in **34 regional and district health management teams** in the three focus regions**. A third of the group fully achieved or exceeded their objectives**. Key achievements made by the LDP implementers in their respective districts or regions included improved data reporting and information management; rehabilitation and infrastructure upgrades; improved provider competency; better service organization and client flow; improved supply and commodity management; increased use of health services; quality improvement; and public-private collaboration for expanded service coverage. The GHS is continuing to improve the capacity of regions to facilitate their own expansion of this program in more districts.

SUPPLY CHAIN MANAGEMENT

FRHP's efforts were directed at the final step of the supply chain–the frontline or interface between the consumer (health care receiver) and the service provider. This strongly complemented USAID | DELIVER's capacity building with national-level structures, including the GHS Stores, Supply and Drug Management Unit and various national programs in health commodity management operations. FRHP was instrumental in helping GHS introduce LMIS and SOPs and their use by both traditional (pharmacists, store managers) and non-traditional (clinical staff or service providers) supply chain managers. Results of FRHP's SCM interventions include more than a **50% increase in regular use of requisition, reports, issues, and receipts vouchers (RRIRV) tools**; increased use of inventory control cards from 57% to 71%; an almost **50% increase in health facilities with established minimum and maximum stock levels** in two years; and **only 5% of facilities reporting lack of knowledge in the use of health data collection forms**.



EARLY WARNING SYSTEM

The "Early Warning System" (EWS) was developed and implemented in partnership with the USAID | DELIVER project to boost the visibility of health commodity stocks at service delivery points. This system involved the use of mobile phones by frontline staff for weekly online reporting on stock levels of a selected number of essential program commodities at health facilities. The system has been in operation since 2011 and covers **204 health facilities and three regional medical stores in 25 districts of the three focus regions as well as 225 other hospitals that provide ART and PMTCT of HIV (PMTCT) services nationwide**. With the EWS, service providers at all levels are able to log into the system through its website, www.ewsghana.com to find out whether there are stock outs, over-stocking, or optimal consumption of traced commodities, and initiate remedial measures

where required. The GHS has been very pleased with the EWS and expansion of the system nationwide is being discussed.

HEALTH INFORMATION MANAGEMENT

Roll-out of DHIMS2, GHS's electronic health service data reporting system, received a major boost from FRHP in implementation at the facility- and district-levels across the focus regions. Several health staff were trained in health information forms and registers and in the general use of data management SOPs and guidelines. In addition, FRHP provided large quantities of the manuals, data forms, registers, and some of the information technology (IT) equipment needed at service delivery sites. **Monthly reporting of service data** in the DHIMS by health facilities of the focus regions **improved from 50% to more than 90% in the last two years of the project as a result of the systems' strengthening interventions**.

COMMUNITY-BASED HEALTH PLANNING AND SERVICES (CHPS)

Implementation of the CHPS strategy to deliver primary health care services received a major expansion in the focus regions. **The number of functional CHPS zones rose dramatically from 207 at baseline in 2010, to 509 by the final year of the project**. Nearly 600 community health officers (CHOs) completed training in the full complement of the CHPS modules, while more than 1,100 community health committee (CHC) members were trained and deployed to support CHOs. Several CHPS compounds received basic service equipment and CHOs were trained or refreshed in several of the components of the primary health care service delivery package, including FP counseling and CTUs, implant insertions/removal, focused antenatal care (FANC), malaria case management, health information management, and logistics management.

EQUIPMENT

FRHP procured and delivered large quantities of clinical and other auxiliary equipment (including furnishings) with a **total value of nearly U.S. $4.2 million** to GHS service and administrative units across all project regions. Among the consignment was theater equipment for the Ridge, Achimota, and Ga South Hospitals in Greater Accra Region, and the Effia Nkwanta Regional Hospital in Western Region. Other clinical equipment included Caesarean section and hysterectomy sets, autoclaves, blood bank fridges, examination lights, delivery beds, delivery sets, suction machines, neonatal resuscitation kits, and LAPM kits. Also among the procurements were training/anatomical models (such as mannequins, pelvic dummies, childbirth simulators, implant and IUD training models) delivered to midwifery, nursing, and community nursing training schools, as well as in-service training sites and pre-service field practice sites across the three focus regions.

FACILITY REFURBISHMENTS

Health facility infrastructural refurbishments were completed at 86 sites (including hospitals, health centers, and CHPS) to improve the service delivery environment with requisite amenities for the comfort of providers and clients, ensuring privacy and confidentiality for client-provider interactions, facilitating health education and behavior change communication (BCC), and generally improving workplace safety. Nearly U.S. $2 million was spent on these upgrades, which also included refurbishments for skills' labs and other sub-units of several pre-service training institutions in the three focus regions.

EVALUATION AND RESEARCH

FRHP tracked its progress in achieving its intended goals through a robust monitoring and evaluation (M&E) system that included process, outcome, output, and impact indicators. To the greatest extent possible, the data for these indicators came from existing sources such as service statistics obtainable through the GHS' DHIMS2, GDHS, and MICS. Routine monitoring data were collected through annual facility surveys to assess improvements in service provision. Special studies, both quantitative and qualitative in nature, were conducted on topics such as understanding the private sectors' role and involvement in reproductive health programs in Ghana; reviewing the project's midterm implementation progress; availability and needs assessment of focus antenatal care (FANC); a case study of CHPS implementation in the focus regions; and characteristics of the malaria burden in the urban areas of Ghana. Results of these studies were used to fine-tune the activities and approaches of FRHP and have been shared within Ghana and the global public health community through numerous reports and presentations.

BUILDING SUCCESS ON PARTNERSHIP

FRHP's results were achieved through collaboration with and capacity building of the GHS, who received 15% of the total project funding through performance-based financing (PBF) grants. FRHP also supported the GHS to conduct the Leadership Development Program (LDP), using their PBF grants for improvements in service delivery, management, financial management, and data use for decision-making. Three-quarters of the subgrantees met more than 70% of their targets.

JSI managed the FRHP with attention to cost containment and use of cost-effective approaches. These included identifying local expert consultants, building upon prior successes, leveraging funds with partners such as Georgetown University and Kybele, and combining local and international procurement strategies to ensure high-quality products for the lowest prices. Over the life of the project, JSI documented more than $2 million U.S. in cost-share from a variety of sources including significant contributions from both Ghanaian partners and international not-for-profit organizations. JSI is proud of its excellent stewardship of U.S. Government funds and investment in sustainable improved service delivery through capacity building with the GHS.

INTRODUCTION

JSI Research & Training Institute, Inc. (JSI) was awarded a four-year contract (2009-2013) to implement the activities of USAID Focus Region Health Project (FRHP) in Ghana under Cooperative Agreement (CA) No. 641-A-00-09-00030-00. The original scope of the project was to strengthen access to and quality and utilization of maternal, newborn, and child health, nutrition, and family planning services, and the systems necessary to provide those services in the Central, Greater Accra, and Western regions of Ghana. In July 2010, the CA was modified to include malaria and HIV/AIDS activities and to include Ashanti and Eastern regions for HIV/AIDS activities only. JSI was initially mandated to complete the activities by the end of August, 2013. A no-cost extension was awarded in May 2013, changing the end date of the Cooperative Agreement from August 20, 2012 to February 28, 2014.

Map of Ghana highlighting the focus regions.

USAID/Ghana's overall goal in the health sector is to improve the health of Ghanaians. To do this, USAID cooperating agencies and partners in collaboration with the Government of Ghana (GOG), apply innovative approaches focused on behavior change for key health interventions at the individual, community health system, and policy levels. USAID technical assistance is directed at efforts to reduce under-five mortality rates especially among newborns, reduce the total fertility rate, stabilize HIV prevalence among adults, and reduce HIV prevalence among most-at-risk groups. Activities focus on strengthening Ghana's key health delivery systems including logistics, monitoring and evaluation, and performance management; improving financial oversight skills of planning and implementing organizations; and building institutional capacity within the health sector at the national, regional, district, and sub-district levels.

The delivery of health services in Ghana is affected by significant management and systems problems that impede quality, access to, and use of its services. This has a negative impact on the effectiveness of investments to improve the health of Ghanaians. The decentralized structure of the health system and the Ghana Health Service (GHS) is an important strength, giving the regions and districts sufficient autonomy and flexibility to respond to local needs and conditions. However, limited capacity and poor motivation at the regional and district levels limit the system's ability to be responsive and provide high-quality care. Even with greater financing now feasible through the National Health Insurance Scheme (NHIS), these constraints continue to plague health service delivery.

Although health status in Ghana has improved in recent decades, many health challenges remained at the commencement of FRHP, as evidenced by some of the major indicators of the Ghana DHS 2008. Life expectancy was 59 years, and with an annual population growth rate of 2.3%, Ghana had a young age structure with children younger than15 years of age comprising about 40 % of the population. Infant and under-

five mortality showing consistent decline over two decades, remained high at 50 and 80 per 1000 live births respectively. Major child-killers included malaria, diarrhea, pneumonia and measles. The maternal mortality ratio, estimated between 224 and 590 per 100,000 live births, was declared “unacceptably high and should be treated as a national emergency.” according to a National Consultative Meeting on the Reduction of Maternal Mortality in Ghana, and skilled attendance at delivery was only 59%. Lack of access to emergency obstetric care, unsafe abortions, poor quality post abortion care, and low use of contraceptives to prevent unintended pregnancies were major contributory factors of maternal mortality. Ghana’s total fertility rate of 4.0 and unmet need for contraception at 34% of married women remain among the highest in the world.

Malaria is a major cause of morbidity and mortality in Ghana, directly contributing to poverty, low productivity, and reduced school attendance. Malaria is responsible for an estimated 22% of under-five mortality and 9% of maternal deaths in Ghana. With an HIV prevalence of 1.9% (UNAIDS, 2008), HIV transmission in Ghana is concentrated among persons who engage in high-risk behaviors, particularly female sex workers (FSW) and their clients and partners, and men who have sex with men (MSM) and their female partners. Evidence suggests a reduction of HIV infection in the general population, yet HIV infection seems to be increasing in these at-risk populations.

Under an agreement with the Government of Ghana, including the Ministry of Health and the Ghana Health Services, implementation of this USAID cooperative agreement was targeted at all districts in the Greater Accra, Central, and Western regions. Assumptions for this geographical focus included that the aggregate population of the three was approximately a third of the whole country, so any result in health impacts would be significant enough to affect national rates. Also, the three were contiguous and include most of Ghana’s coastline. Specific characteristics justifying their selection include that the Greater Accra Region has a large population and some reside in large urban slums; a significant concentration of private sector actors in health; and several tertiary health facilities with significant overcrowding; subpar quality in urban clinics; difficulty organizing and sustaining community actions in urban areas; and service statistics problems because the private sector is a significant source of health care and does not routinely report to the GHS. Central Region has long been classified as one of the four poorest regions in Ghana (along with the three northern regions). Western Region had the urban area and port of Takoradi, but much of the region is still quite rural and lack access to basic health services. Although offshore gas and oil exploitation in the region was likely to impact rapid growth of economic activity, strains to its social structures from related population influx and other associated factors were also likely. Yet there was considerable potential for partnerships with these new commercial entities to improve health in the area. The CA amendment to include HIV programs also justified the expansion of geographical coverage to the Ashanti and Eastern regions of Ghana, which had the highest HIV prevalence in the country for several years.

JSI Research & Training Institute, Inc. (JSI) was joined by World Education, Inc. (WEI), a partner carefully selected for the unique and complementary skills required for the Ghana Focus Region Heath Project (FRHP). WEI contributed to the development of training activities and materials, strategies for ensuring community and

family-level service delivery, and for bolstering relationships between private and public sectors. FRHP processes that contributed to enduring project progress included working in partnership with Ghanaian institutions, identifying innovative ways to strengthen activities, and enhancing local capacity to continue to achieve results in the future.

Over the 4.5 year of project lifespan, USAID/Ghana obligated a total of U.S. $38,340,000 FRHP's technical assistance (TA) to Ghana health systems. Details in Table 1 indicate the proportions as 39% to FP; 32% to MNCH; 14% to HIV and AIDS; 11% for malaria; and 4% to nutrition.

TABLE 1: APPROVED FRHP ANNUAL WORKPLAN BUDGETS BY PROGRAM ELEMENT

Program Element	FY 2009 - 2010	FY 2010 - 2011	FY 2011 - 2012	*FY 2012 - 2013	Total by Elements	%
Maternal, Newborn & Child Health (MNCH)	3,040,000	1,900,000	3,500,000	3,825,000	12,265,000	32
Family Planning (FP)	4,250,000	4,100,000	3,500,000	2,950,000	14,800,000	39
Malaria	105,000	1,200,000	1,650,000	1,400,000	4,355,000	11
HIV and AIDS		2,400,000	1,700,000	1,320,000	5,420,000	14
Nutrition		200,000	500,000	800,000	1,500,000	4
Total by Years	7,395,000	9,800,000	10,850,000	10,295,000	38,340,000	100
*A no-cost extension granted from July 2013-Feb. 2014 had approved budget of U.S.$4,085,332, the existing balance under the ceiling of U.S. $38,340,000 total						

FRHP conducted TA programs with annual direct sub-agreements carefully planned and budgeted with respective GHS regional directorates to ensure synergy of interventions with their program of work. FRHP applied a performance-based grant approach with district directorates and some district/metro hospitals, making it possible for exploration, innovation, and implementation of 'local-context' solutions to achieve extra service coverage and other targets. Some direct investments also went into production and dissemination of large quantities of health care policies, protocols, and reference manuals, refurbishing of health infrastructure and equipment to improve workplace safety and comfort for providers and clients, and strengthened clinical service capacity. FRHP also supported the development technology-based systems for health logistics management and rapid data analysis to improve supervision feedback to service providers during visits.

This final report documents FRHP's major interventions and their results. As semi-annual and annual reports have already provided considerable detail about FRHP activities, this EOP report will summarize information that is available elsewhere and focus on overall results including analysis from the final facility survey.

INTERVENTIONS AND RESULTS

A. IMPROVING HEALTH SERVICES

Improving the quality and accessibility of health services was the crux of the FRHP, which supported a variety of interventions to increase the capacity of the GHS in particular and private providers to deliver high-quality health services. To achieve this, FRHP's technical assistance to the GHS aimed at strengthening existing structures and building capacity for communicating policies and guidelines, training, mentoring, and supporting frontline staff to perform at higher standards, and to create or refurbish the service environment to optimize client-provider interaction and attract the community. The extent of interventions and activities and their results are presented in the sections below.

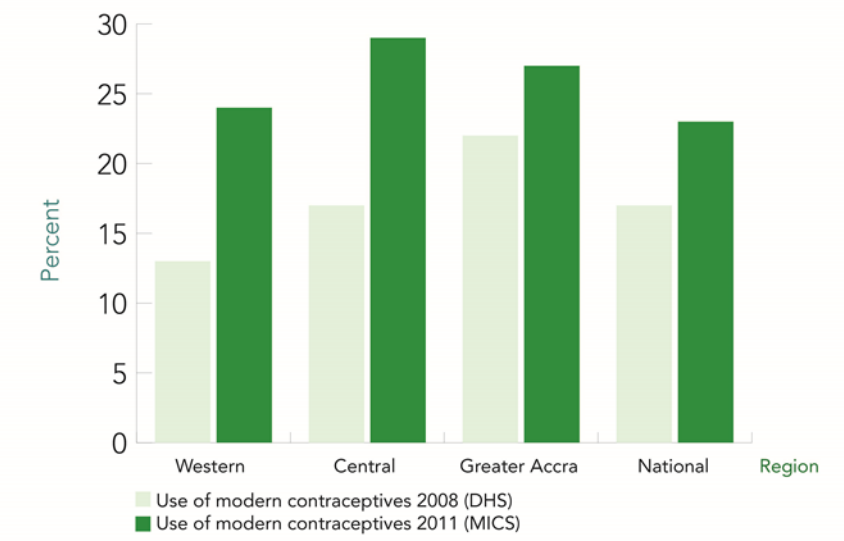
A1. FAMILY PLANNING

When the project began in 2009, data showed that family planning use in Ghana had declined. Improving quality and availability of family planning services was made a priority for FRHP to reverse this trend. As shown in Table 1 in the Introduction, family planning received the largest amount of funding over the life of the project. Project investments in provider training and supervision, facility improvements, equipment, and supply chain management paid off. By the end of 2011 (project midterm) the nationwide MICS showed a near doubling of CPR in two of the focus regions (Western and Central), and an appreciable increase for one (Greater Accra) compared to their status at the DHS 2008. Indications since then point to the trend continuing and it is expected that the results of the DHS 2014 will confirm this.

GHS service statistics also support this projection, as total CYP for the three regions nearly doubled at project completion, reaching more than 320,000 compared to baseline figure of 178,000. Correspondingly, the number of facilities providing FP services has increased from 403 at baseline to more than 900 over the project period. As noted above, this was a result of FRHP's technical assistance complement to other GHS investments.

FRHP focused on rebuilding and expanding GHS' capacity at the regional level to support FP service expansion and quality standards to district and sub-district facility levels. Hence, IUD, implants, and SRH counseling staff and programs in all three regions were retrained, refreshed, and retooled.

FIGURE 1: INCREASING MODERN CONTRACEPTIVES (CPR BY REGION)



Additionally, existing clinical training sites in these FP methods were revamped, and one new site for each region was set up. Nearly 120 FP trainers or supervisors received refreshers or full training during the period and conducted supportive supervision visits to almost all service delivery points across the three focus regions. The percentage of facilities providing FP service receiving clinical supervision in FP within a year from an external supervisor increased from 32 (at baseline) to 70 (at endline) for one visit, and for the standard expected two visits increased from 20 to 55 (i.e. more than doubled).

Long-Acting and Permanent Method (LAPM)

Several years of stagnant or diminished uptake of LAPM due to lack of resources, unmotivated staff and management, myths, and misconceptions about LAPM had to be overcome. FRHP trained nearly 450 providers in implant insertion and use; more than 250 in IUD; 54 in bilateral tubal ligation (BTL) and 28 in no-scalpel vasectomy (NSV). At endline, the percentage of facilities with at least one trained implant provider was roughly 80, a significant improvement from the 47 at baseline. IUD was available in 53% of facilities compared to baseline of 47%; and BTL and NSV were available in 16% and 6% of facilities respectively, up from 15% and 2% respectively at baseline. FRHP complemented these interventions with an additional strategy of using partnership with MSIG to implement an outreach service delivery in remote and underserved rural communities in the focus regions. Over a three year period, the outreach FP services conducted in 10 mostly rural districts in the Central and Western regions delivered nearly 20,000 LAPMs services which included 1,353 BTLs, 27 NSVs, 681 IUDs, 17,892 implants (Jadelle), 116 injectables, and 60,389 male condoms. These services generated nearly 85,000 CYP.

Sexual Reproductive Health Counseling and Contraceptive Technology Update

Sexual reproductive health counseling and contraceptive technology updates prepare FP staff to conduct effective client-provider interactions that dispel myths and misconceptions and facilitate informed FP choices for clients. Over the course of the project, more than 700 FP in the three regions received counseling skills updates and refreshers. FRHP also promoted healthy timing and spacing of pregnancy by conducting whole-site and facility-based trainings and orientation for staff providing care for mothers from the antenatal through the postpartum period. More than 3,000 health staff (including midwives, clinical and community nurses, prescribers, and paramedics) were trained so that every postpartum point of contact would provide an opportunity to offer family planning to mothers of newborns at facilities. About 46 district hospitals and surrounding lower-level facilities (health centers and CHPS) within the districts participated in the rollout of this strategy.

Standard Days Method (SDM)

For several years, natural family planning (NFP) methods involved counseling the client on watching for signs of ovulation and avoiding sex. There was little evidence or data on use of NFP in Ghana. FRHP's collaboration with the Institute of Reproductive Health of the Georgetown University has effectively introduced the SDM into Ghana's FP program. All health facilities in 12 pilot districts of the focus regions have a total of nearly 700

service providers, supervisors, and trainers who routinely offer cycle beads SDM as a FP option. A follow-up assessment in mid-2013 showed that nearly 6% of new FP users opted for this method in the pilot districts. The GHS FP program is considering expanding the availability cycle beads nationwide.

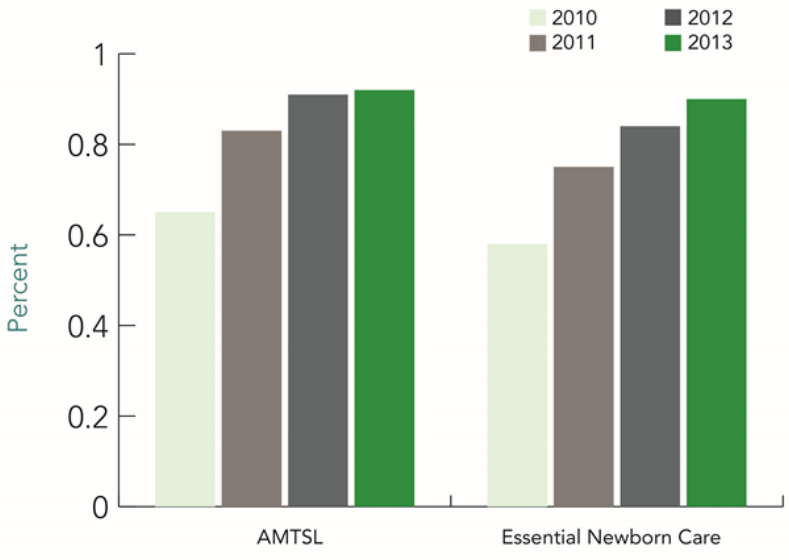
FP Services Promotion and Campaigns

FRHP's mandate did not extend to community interventions, but because of the evident need to dispel rumors and misconceptions about FP, FRHP addressed service provider skills in FP counseling and communication to promote FP within the health facilities. FRHP went beyond these actions to contribute to major promotional campaigns by the GHS, such as 'FP Week' launches at the national level and in some districts. Trained providers joined satisfied clients in FP talks in communities on these occasions, and methods were provided immediately to those making available choices, while referral coupons were distributed to interested individuals requesting LAPMs that were available at nearby health facilities.

A2. MATERNAL, NEWBORN AND CHILD HEALTH

Improving maternal, newborn, and child health (MNCH) remains a priority for the Government of Ghana. Accordingly, the MNCH portfolio under FRHP was substantial both in the scope of activities undertaken and the proportion of allocated funding. It is expected that Ghana will achieve the MDG 4, as positive trends in child health indicators in the three focus regions show. However, indications are that Ghana is unlikely to achieve MDG 5 target by 2015. In spite of this, maternal health indicators in the focus regions compare favorably to or better than the other regions of the country. Skilled attendance at delivery assessed with institutional service data increased from nearly 70% to 80% on average for the three focus regions, which corresponds with facility-based deliveries that increased from nearly 175,000 to 220,000 at project endline. Institutional capacity to provide basic emergency obstetric and neonatal care (BEmONC) rose among lower-level facilities (health centers, clinics, and CHPS) from 35% to more than 60% in the focus regions. Capacity for comprehensive emergency obstetric and neonatal care at hospitals improved marginally, from 92% to 93%. Similarly, availability of emergency packs (drugs and other resuscitation items) to manage two of the biggest causes of maternal deaths, postpartum hemorrhage (PPH) and pregnancy-induced hypertension (PIH), at health facilities greatly improved from 43% to 63%. Overall, implemented measures resulted in a consistent decreasing maternal mortality trend in the focus regions. Below are descriptions of FRHP-supported interventions that generated the outcomes described.

FIGURE 2: PERCENTAGE OF DELIVERIES RECEIVING AMTSL AND ENC

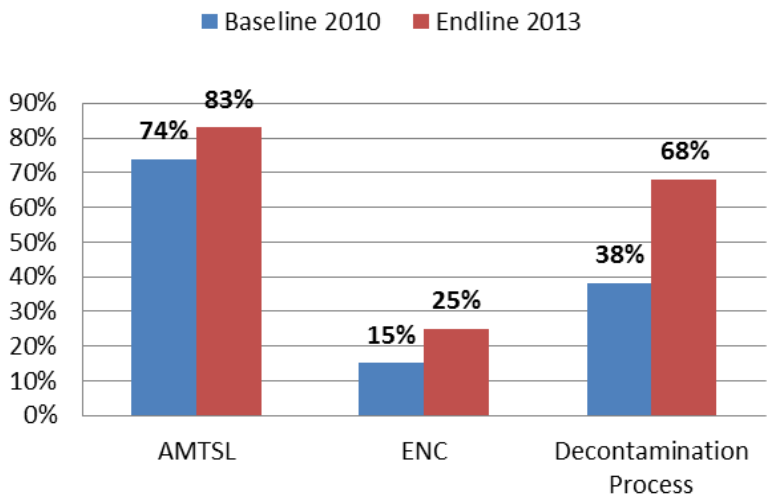


Life Saving Skills and Emergency Obstetric and Neonatal Care (LSS/EmONC)

LSS/EmONC availability at every health facility lies at the core of achieving skilled attendance at birth and hence efforts to avert maternal and neonatal mortality and morbidity. In order to scale up the capacity for these services in the focus regions, FRHP rebuilt the regions' trainer teams, also referred to as regional resource teams (RRTs), and the clinical instructors who support them. This enabled the three regions to simultaneously undertake LSS/EmONC training for their service providers drawn from their health facilities. Nearly 600 midwives, 60 of whom were from the private sector, were trained under this program. They acquired skills to conduct focused antenatal care for pregnant women, safe delivery using the partograph, assisted delivery with procedures such as episiotomy and vacuum extraction, to provide active management of the third stage of labor including essential newborn care, and to manage maternal and neonatal emergencies.

Similarly, 42 physician general practitioners (GPs) were also trained in EmONC skills to better support the midwives, especially at peripherally located health facilities, manage complications during pregnancy and childbirth, and facilitate referrals where indicated. LSS/EmONC-trained provider performance in service delivery assessed through follow-ups and supervision and annual project monitoring indicate improvement. For example partograph use for labor increased from 33% at baseline to 61% at endline, while AMTSL demonstration, decontamination of clinical instruments, and ENC steps also similarly showed significant improvement as shown in Figure 3.

FIGURE 3: PERCENTAGE OF FACILITIES WITH PROVIDERS DEMONSTRATING CORRECT KNOWLEDGE OF ALL ASPECTS OF AMTSL, ENC OR THE DECONTAMINATION PROCESS



"With the experience in the training I had, I realized that it is my duty to provide leadership at the maternity unit by providing routine visits to [the midwives] and doing ward rounds with [the midwives] because now I have the requisite skills to work with them."

-General Physician Trainee

Integrated Management of Neonatal and Childhood Illness (IMNCI)

The GHS has implemented IMNCI since the early 2000s. The approach encompasses preventive care from the prenatal period through birth, and the early years of life of the child, as well as evidence-based assessment and treatment of common diseases and life-threatening conditions. At the start of FRHP, the IMNCI guide books were revised with some critical local-context adaptations, and the updated edition was reprinted and trainers retrained in the focus regions. The trainers were given on-the-job training for supportive supervision methodologies. In subsequent years, extensive roll out of IMNCI training covered about 670 service providers, with a greater concentration at the health center,

clinic, and CHPS levels where the need for the integrated approach to care was more pronounced, because physician and specialist support, and access to higher diagnostic clinical equipment was not available. The trained providers were followed up with supportive supervision visits during which a large proportion of facilities were found to reference IMNCI chart booklets and other job aids when providing care.

Emergency Triage Assessment and Treatment (ETAT)

ETAT, a WHO-developed guide for instituting a practice of rapid organized clinical attention to avoid deaths and complications from delayed care during sick child emergencies, had been initiated in four of the busiest hospitals in the Greater Accra Region. FRHP supported the region to roll out the viable and necessary strategy in several other regional health centers that had high daily OPD attendance, poorly organized flow, and long waiting times for clients, including sick children. Over the project lifespan, the approach was implemented in 43 health facilities by training more than 300 health personnel who went on to draw triage and emergency care algorithms specific to their facilities, set up space for attending cases and operated the triage system. Twelve of these facilities followed up were found to be fully operating the approach. Four of the 12 showed increasing child admissions with decreasing mortality, and another four experienced decreasing mortality and admissions rates. Overall, the effect of ETAT according to the implementing facilities is positive, especially as waiting or delays with care for sick child emergencies no longer exists.

Adolescent Reproductive Health

The GHS used FRHP's technical assistance to rekindle efforts with adolescent reproductive health in the focus regions. Considered a highly essential strategy for reaching the 'unreached' in sexual and reproductive health by making health facilities 'adolescent-friendly,' FRHP supported the training of facilitators to lead the program in the three focus regions. However, further rollout of training for health staff to provide adolescent-friendly services reached only105 staff members in two of the focus regions (CR and GAR).Twenty-four health facilities with trained providers were followed up and assessed for equipment and items needed for adolescent-friendly services. Eleven of these received a full complement of procured items by FRHP, and others were provided missing pieces to complete what they needed for services.

Training in Other MNCH Tools and Standards

In addition to the key strategies for MNCH as described above, FRHP also assisted the GHS to address focal areas by conducting training for providers who were assessed and found lacking in the use of the partograph, neonatal resuscitation, AMTSL, and FANC. These trainings responded to skill gaps that supervisor found their staff. Overall, nearly 400 service providers received these special training sessions. FRHP and a team of national experts also developed a job-aid with content on current management of maternal and newborn emergencies. The result was an up-to-date user-friendly guide on diagnosing and treatment of complications in the mother and the newborn during pregnancy and delivery. The guides were disseminated at almost all facilities at all levels within the focus regions at orientation forums. GHS is continuing nationwide dissemination of these guides. GHS redesigned the child health record book and updated it with current WHO standards for growth monitoring, added vaccinations under EPI and included more counseling information for mothers for

caring of their infants. FRHP produced the record book, now available at all facilities, and oriented about 500 child health service providers to use it.

Maternal and Neonatal Death Audits

GHS policy requires that all maternal deaths at health facilities should be reported and audited. However, annual statistics from the regions showed that this objective was not being met, although quite a large proportion of deaths are reported to have been audited. Audit practices were not uniform, and key follow-on steps to address audit findings and improve quality of care to avert deaths were lacking. GHS re-developed the audit tool and incorporated newborn component in 2012. FRHP supported the production of copies of the tools, training of 26 trainers, and subsequent training of facility audit teams with overall membership of about 600 staff in 44 major hospitals. The teams were followed or monitored to effectively apply the new methodology in maternal and neonatal death audits at their facilities, with current performance showing audits for all reported deaths. Apart from the revision and strengthening of the audit exercises at facilities, FRHP also supported regional MNCH and clinical conferences for managers, clinicians, midwives, other health staff, community stakeholders, and partners to analyze performance indicator gaps, identify contributory factors, propose solutions and share best practices. One of the best practices was the PROMISE (promoting maternal and infant survival excellence), an initiative of GHS Western Region Directorate that used trainee health cadres from pre-service institutions for community education and behavior change activities to improve access to and use of maternal and child health services.

Anemia in Pregnancy

A major area of focus in antenatal care is diagnosing anemia and proving treatment to reduce the danger of poor outcomes in delivery even with moderate blood loss. FRHP recognized that despite in-service training for strengthening providers' skills for effective antenatal care, the proportion of anemia among parturient mothers continues to be unacceptably high. FRHP supported the GHS to design an anemia training program that emphasized anemia testing, classification, counseling, and treatment skills to manage pregnant women. This training program, begun in the last year of the project, has been attended by 300 midwives, laboratory and pharmacy staff, who are now using the new management approach. It is expected that the practice will reduce the prevalence of anemia in pregnant women in the coming years.

A3. NUTRITION

Nutrition received the smallest proportion of total project funding but included activities essential to improving health of children under the age of five. FRHP's support to the GHS nutrition program was aimed at improving child survival through improved breastfeeding initiation and management, appropriate introduction of complementary feeding and management of predisposing conditions for malnourishment, and early identification and management of severe acute malnutrition. The prevalence of stunting in children less than 5 years declined in both Western (from 27% to 23%) and Central regions (from 34% to 23%) between 2008 and 2011 as recorded by DHS and MICS respectively. Greater Accra Region remained at 14% within the period, but that is still far below the national average of 23%. FRHP's contribution to nutrition program efforts, as well as support from other partners such as FANTA and UNICEF, should sustain decreasing trends in nutrition indicators.

Infant and Young Child Feeding (IYCF)

By the beginning of 2010, the GHS nutrition program had introduced the infant and young child feeding module as the reference guide for comprehensive nutritional counseling by health providers to mothers and caregivers to prevent malnutrition in children. Due to the immediate need to rapidly introduce health care providers to IYCF, FRHP pooled trainers from the national level and from outside the focus regions to conduct training activities. In subsequent years, FRHP developed 82 IYCF trainers for the focus regions. Overall IYCF training was conducted for more than 600 health staff (including nutrition officers, CHNs, and midwives) in the focus regions.

Community Management of Acute Malnutrition (CMAM)

CMAM, which was piloted in a few districts in the Central Region by the FANTA project demonstrated the benefit of involving community volunteers in active case searches of malnourished children and linkage with treatment on inpatient or outpatient basis depending on severity. FRHP collaborated with FANTA to continue roll out of this approach to some districts, mostly in the Greater Accra and Western regions. Support was directed to training facility-based service providers to manage severe acute malnutrition and underlying disease conditions that predispose children under age five to malnutrition, and to make referrals for treatment of possible concurrent chronic diseases.

Zinc Treatment for Diarrhea

In 2012 the Ghana MOH adopted the latest World Health Organization (WHO) guidelines on use of zinc in the management of diarrheal diseases, especially among children. The USAID/SHOPS project supported updating of national protocols and the private sector in the procurement and distribution of the zinc treatment tablets. Since then, FRHP complemented national-level managed training of regional resource teams, who expanded training to service providers. In all, 520 service providers (CHNs, MA, and CHOs) from the three regions were trained in the use of zinc for managing diarrheal cases among children. Routine use of zinc as part of diarrheal treatment is now conducted at several facilities in the focus regions.

HIV and Nutrition

Nutrition is a major component in HIV treatment, care, and support. People who are living with HIV experience chronic diarrhea, which deprives the body of required nourishment and decreases treatment effectiveness. National policy to guide and prioritize nutrition programs in HIV was finally completed and adopted in 2010.FRHP contributed to the dissemination of the policy and guidelines for counseling on nutrition for PLHIVs, and trained ART, PMTCT, and CT providing health staff, reaching 150 by the end of the project. If the policy is to achieve its objectives, many more health staff must be reached.

Breastfeeding Promotion

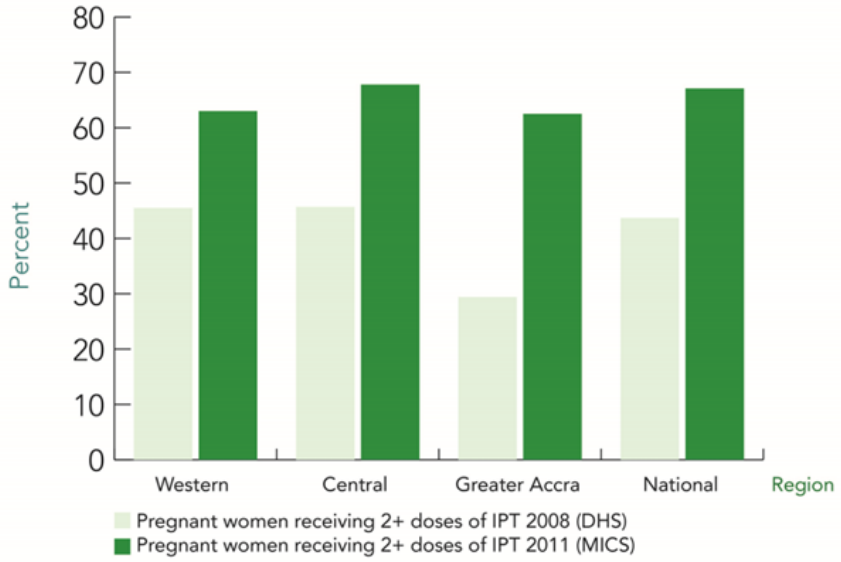
For several years, the Baby-Friendly Hospital Initiative has been the key strategy in Ghana for promoting exclusive breastfeeding for primary prevention of malnutrition in infants. However, the program had experienced diminished input and interest by the time that FRHP began. The GHS directorates

in the focus regions re-prioritized the strategy with FRHP support. Program staff members were retrained and steps for successful breastfeeding were increased from 10 to 13 and adopted by health facilities in order to attain 'baby-friendly' status. In all, FRHP supported the training of nearly 200 health staff in lactation management and implementation of the initiative, including 15 national and regional level assessors. Also, approximately 70 mother-to-mother support group members were trained to provide baby-friendly services at some facilities. Several facilities achieved new or recertified baby-friendly status over the project. Conferment of status was based on the availability of written and displayed policies on the promotion and practice of exclusive breastfeeding for all newborns, staff awareness of the policy and counseling on breastfeeding, the discouragement of artificial feeding, and availability of mother-to-mother support groups.

A4. MALARIA

Malaria is the leading cause of morbidity in the Ghana, accounting for about 38 % of all outpatient illnesses, 36% of all admissions, and 33% of all deaths in children under five years old. FRHP's malaria work was developed to complement other national efforts aimed at reducing mortality from this disease in Ghana by 50% by achieving 85% coverage of children under five years of age, pregnant women, and the most vulnerable groups of the population with proven preventive and therapeutic interventions including ACTs, ITNs, intermittent preventive treatment of malaria in pregnancy (IPTp), etc. Malaria related morbidity and mortality have declined as indicated by the 2012 World Malaria Report (WHO) and the 2011 Multiple Indicator Cluster Survey (MICS. IPTp coverage for 2+ doses increased in the focus regions from an average of 43.7% (DHS 2008) to 67.1% (MICS 2011) as seen in Figure 4.

FIGURE 4: INCREASED IPT2 COVERAGE AMONG PREGNANT WOMEN



Malaria in Pregnancy and Case Management

At the core of FRHP's malaria intervention strategy was ensuring that the health worker should receive full re-orientation and contribute to breaking the cycle of malaria remaining the leading cause of outpatient department attendance, inpatient admissions, morbidity, and mortality among children. FRHP brought to scale further dissemination of the national malaria drug policy and the malaria in pregnancy prevention and case management guidelines. More than 2,300 health staff, especially 'prescribers' (comprising physicians, physician assistants, midwives, nurses, and community health nurses who diagnose and treat malaria cases at all levels of the health care delivery system), were trained on the policy and in use of these guidelines. Essential practices emanating from these trainings were that providers used standard clinical evaluation for suspecting malaria and more reference to laboratory confirmation of diagnosis by microscopy or RDT. Compared to the situation at FRHP baseline where

annual NMCP reports indicated that presumptive or clinical diagnosis was the overwhelming practice, supervisory and post-training follow-up visits by FRHP and the GHS showed that laboratory diagnosis was the practice in more than 50% of facilities. FRHP adopted the onsite training approach rather than the previously existing offsite method, and was able to cover more of the staff needing training. Training methodology was varied for cadre groupings, taking into consideration their basic professional levels to increase comprehension and applicability of guidelines.

Intermittent Preventive Treatment of Malaria in Pregnancy (IPTp)

In order to address prevailing low IPTp coverage, FRHP developed and rolled out a FANC with IPTp training model. This model, implemented with about 600 midwives, provided an enhanced approach to IPTp counseling, sulphadoxine-pyrimethamine (SP) administration, and malaria in pregnancy management, and reinforced compliance with the other key steps of FANC; including a revised schedule of visits, individualized care for the pregnant woman, treatment of anemia and other complications that threaten the mother or fetus, and birth and complication preparedness planning. FRHP complemented the training with a targeted assessment of 20 major district and regional hospitals in two of the focus regions against expected standards of FANC and IPTp performance, and subsequently addressed combinations of training, equipment, and facility renovations needs to achieve the desired standards at the various hospitals. Job-aids related to FANC, IPTp and anemia in pregnancy and its management were developed in collaboration with the GHS Family Health Division (FHD), were distributed at all facilities. The FANC and IPT model was also extended to the Korle-Bu Teaching Hospital (KBTH), which for unclear reasons did not provide IPTp as part of its routine ANC services until FRHP introduced the model in 2012. With ANC registrants at the facility numbering in the region of 20,000 annually, the lack of IPTp put women at a huge risk. The partnership with FRHP changed this undesirable situation. That breakthrough led to the introduction of other components of the National Malaria Control Program at the hospital, including proper case management and rapid diagnostic test (RDT) to complement microscopy for malaria diagnosis.

Rapid Diagnostic Test (RDT)

Since 2009, the NMCP/GHS had intensified advocacy for laboratory diagnosis of malaria as part of appropriate case management as there is growing evidence that the presumptive diagnosis is not reliable for confirming presence of the disease. In relation to this, RDT has been introduced to complement microscopy to facilitate the practice of laboratory confirmation of diagnosis at all levels of health facilities including at CHPS zones. FRHP-supported trainings for health workers in malaria case management incorporated a component on RDT skills. More than 2,300 health staff (prescribers) were trained in case management and received some orientation in RDT use. Stand-alone and RDT-specific trainings were conducted for 1,418 health workers (including laboratory and auxiliary staff) at district and sub-district facilities, and another 88 workers at the Korle-Bu Teaching Hospital. This led to increased numbers of suspected case confirmation before treatment at a number of facilities.

Drugs and Therapeutic Committee (DTC)

Drugs and therapeutic committees are facility-based multi-disciplinary committees that GHS instituted to ensure that health facility staff comply with hospital formularies and prescribing, dispensing, and procurement practices. FRHP-supported DTCs include adherence to the new antimalarial drug policy as part of their role. FRHP supported reviews of existing action plans of DTCs in the focus regions and assisted implementation of facility-level malaria quality improvement activities. FRHP continued capacity-building to improve technical skills of DTC members and expand their availability and functioning in hospital facilities, which improved malaria management and case outcomes at these facilities.

Long-Lasting Insecticide-Treated Nets (LLINs)

For more than a decade, Ghana had been distributing insecticide-treated bed nets to pregnant women and children under age five through a variety of channels, including a subsidized voucher scheme and other public-private mechanisms. This achieved some appreciable degree of net ownership (33% of households), but use was still quite minimal (28% for children under 5, 20% for pregnant women) as reported by DHS 2008. From 2009, Ghana adopted the universal coverage policy of LLIN distribution where every two persons in a household were entitled to one LLIN delivered in a door-to-door hang-up campaign. FRHP played a major role in capacity building and technical support to the NMCP as this nationwide effort cascaded across the various regions. FRHP contribution was part of the effort that achieved the more than 3 million LLINs distributed in the three focus regions between 2012-13. Specifically, FRHP supported training of about 1,700 health workers and volunteers who conducted the hang-up exercises, some of whom remained involved in the post-campaign continuous distribution system. FRHP provided support to national, regional, and district officers to monitor the distribution of the LLINS across the three focus regions.

Application of mHealth for Malaria Supervision

To ameliorate the cumbersome processes of gathering malaria program monitoring and supervision data for analysis and use, the FRHP malaria program modified the NMCP's standard checklist by introducing GHS staff to the use of mobile phones to collect field data with Magpi.4. Using electronic devices to collect data during monitoring visits enables prompt data availability and analysis. The system enabled the correction of gaps identified during field visits immediately as data is sent directly from the field to a server. The lead supervisor accesses this data and directs immediate action to the rest of the supervisory team while they are still in the field. FRHP was successful in applying this technology for malaria monitoring visits to facilities in all three of the focus regions. More than 150 GHS officers from both the regional and district levels were introduced to the technology and routine monitoring visits conducted since July 2011 contributed to improved malaria case management, focused antenatal care facility assessment, and use RDTs.

Malaria Conferences

Prescribers' conferences on malaria were organized in the focus regions, especially Greater Accra where they involved the various levels of facilities in both the public and private sector, and were used as forums for reviewing and overcoming challenges to malaria case management. The conferences offered an opportunity for the practitioners to meet the policy makers to define processes for implementation of recommended malaria guidelines and protocols, paving the way for FRHP support to intensify ongoing program activities. FRHP applied the public health triangulation approach (designed by Rutherford et al, UCSF) for a Ghana Urban Malaria Study that helped define the epidemiological contrasts within urban and between urban and rural distribution of the disease in Ghana. The results, disseminated in 2013 at the national level to a large assembly of stakeholders including the MOH/GHS, local government/ metropolitan assemblies, research units, universities, traditional rulers, and several partners, include recommendations for adapting control programs in response the evident differences identified.

A5. HIV

The HIV/AIDS technical area was added to FRHP's scope through the CA modification at the start of program-year two (PY2) directing implementation to cover the existing three focus regions and add two more, Ashanti and Eastern. Among these five focal regions at baseline in 2010, Eastern and Ashanti had highest HIV prevalence rates in the country, at 4.7% and 3.9% respectively. The national level was 2.9%. By the end of 2009, there were an estimated 240,000 people living with HIV (PLHIV) nationwide, with a large proportion in discordant relationship and/or status unknown to their partners. Several opportunities for comprehensive treatment, care, and support had been developed through massive investment from the Global Fund and other partners in rapid expansion of service infrastructure and staff, yet indicators showed that testing, treatment, care, and support, coverage were far from optimal. Several operational challenges to service delivery were reasons for poor coverage of PMTCT, including the low percentage of HIV-positive pregnant women receiving treatment (i.e. 60% or fewer of such eligible women in the five regions), low percentage of exposed babies receiving ARVs and follow-up, low facility-based and outreach CT uptake, poor links to care for persons testing HIV positive, low uptake of TB screening for HIV-positive clients, and not least, poor data systems. In addition, stigma, lack of resources for travel and lack of family support constrain the number of persons seeking treatment. Insufficient human resource capacity at clinical sites, poor leadership, low staff motivation, and demand for extra remuneration contributed to system failure in the delivery of high-quality services and access.

Prevention of Mother-to-Child Transmission (PMTCT) of HIV

At the beginning of FRHP's HIV program implementation, the National AIDS Control Program's (NACP's) capacity for training health cadres for CT, PMTCT, and ART was constrained by its failure to win the GF Round 10 application, which led to increased need for complementary support from other partners. Additionally, the quality improvement in HIV service delivery using the COPE strategy and whole-site stigma reduction initiative that began under the previous QHP cooperative agreement of USAID continued under FRHP. Other interventions that facilitated provision of holistic care to cover PLHIV needs, such as facility-community linkages, networking, and referral systems, 'models of hope' PLHIV volunteer support for clinical services, TB-HIV co-infection management, integration of FP/RH and HIV services, were also conducted over the project lifespan. Some aspects of health systems' improvement support, including supervisory tool refinement and

actual application, guidelines and job-aids printing and dissemination, and some minor health facility refurbishments and equipment provision were also provided.

The global goal of attaining virtual elimination of mother-to-child transmission of HIV by 2015 called for accelerated efforts at linking HIV-positive pregnant women and their children to HIV treatment and care, which led to development of revised guidelines for these procedures. FRHP supported refresher trainings for nearly 1,000 previously trained PMTCT service providers, and approximately 500 other health workers completed fresh training to augment capacity of existing services or introduce them in places that did not have the PMTCT services across the five project regions.

Integrated Management of Adult and Adolescent Illnesses (IMAAI)

In Ghana, the WHO-developed IMAAI modules adopted by the NACP cover ART and management of HIV-related opportunistic infections. The modules are user-friendly for staff at the lower level facilities who manage the least complicated HIV cases. In four of the project regions (Ashanti, Eastern, Greater Accra and Central), trainings were conducted for more than 200 lower-level facility cadres, including 86 physician interns and house officers from various clinical departments of the KATH in the Ashanti Region, to prepare them for service provision as they are posted to other district and sub-district facilities. As a result of these trainings, the LEKMA, Manna Mission, Pentecost, and Achimota hospitals in the Greater Accra, and Konongo, Ankaase, Nkenkaasu, and St. Peters hospitals (at Jacobu) in the Ashanti Region initiated ART services.

TB-HIV

HIV and TB co-infection management has been emphasized by Ghanaian policy since 2005, but implementation at the facility level has not been fully attained. FRHP directed some of its technical support to help bridge the gap between HIV and TB case finding and management by providing HIV testing and counseling (HTC) trainings to staff at the TB units of some ART sites and to sub-district disease control officers. A total of 372 staff were trained in Ashanti, Eastern, Western, and Central regions so that they could offer immediate counseling and testing to TB patients and avoid or reduce chances of default or loss of clients referred to this service from the HIV unit.

Couples' Voluntary Counseling and Testing (CVCT)

Following sponsorship of a team of four Ghanaian senior health professionals from the GHS/NACP and FRHP on a study tour to Rwanda and Zambia in early 2011, FRHP facilitated a pilot of couples voluntary HIV testing and counseling (CVCT) approach at four ART sites in the Western Region. These 'pioneer' sites received training for 25 PMTCT counselors from the Rwanda Zambia HIV Research Group/Zambia Emory HIV Research Project (ZEHRP). The trained counselors organized 'pregnancy schools' to complement regular ANC services and involved male partners in attending pregnant women. Special tools, including CVCT flip charts, CVCT registers adapted to suit the Ghana context, and follow-up registers were used to counsel and inform partners attending the schools and in recording and tracking couple testing and disclosure. A follow-up of these pregnancy school records showed that more than 60% of male partners of the couples who attended agreed to testing. The success of the pilot led to the expansion of the approach in the Western and Greater Accra regions. However, efforts to make the pregnancy school approach to CVCT part of national policy were curtailed by stock-outs of test kits in 2012-13.

FP/RH and HIV Integration

The fact that people living with HIV (PLHIV) have reproductive health needs is often overlooked by health staff, who focus more on the counseling, testing and treatment components of service delivery. However, demonstrable results from integrating reproductive health, family planning, and HIV and AIDS services in Ghana under previous USAID implementing mechanisms—the Quality Health Partners (QHP) and the Strengthening HIV/AIDS Response Partnerships (SHARP)—indicated that integration was a cost-effective approach to preventing new HIV infection and mother-to-child transmission, and increasing access to voluntary HIV counseling and testing, ART, and family planning services. FRHP supported facilities providing ART and FP services to help manage services to cover more fully the RH needs of PLHIV. More than1,200 health staff at the district hospital, health center, and CHPS levels received orientation to integrated services. ART clinic staff were taught to inquire about the RH needs of PLHIV, counsel them on methods, and refer them to service of their choice providers. FP service providers were trained in HTC, and some were able to source and use testing kits to serve clients who wanted to learn their HIV status.

""Since I began work at this hospital no client on ARVs has died. The patients are adhering to drugs and taking them always. Because I visit them and call them to remind them of their drugs and appointments, they don't default ….My self-esteem and dignity that I lost have been regained as a model of hope. I now can confidently face any group or audience (without intimidation) to educate them on HIV/AIDS and also share my testimony with them. I am warmly welcome wherever I go …I do not have any challenges with my work. I do not face any form of stigma or discrimination from health staff and clients. Rather, When I disclose my HIV positive status to people they don't believe it because I look just like them…the way you see me with HIV and look just like you is the same way people with HIV look for ten years or more with the virus before they become AIDS patients so, be careful with your sexual lives."

—Model of Hope Volunteer, Donkorkrom Presby Hospital

PLHIV Volunteers ('Models of Hope')

Motivated by the volunteers' success in expanding TB case finding and treatment completion coverage, the NACP focused on boosting the contribution of volunteers in the HIV program as well. NACP helped partners standardize support packages for PLHIV volunteers and revise their training curriculum to achieve quality performance. FRHP tested the revised PLHIV volunteer training manual and 70 PLHIV volunteers, known as 'models of hope,' were trained and deployed at 43 ART sites to complement HIV and AIDS services in four of the five focus regions, (one region opted not to participate in this program). The models of hope were attached to ART clinics and provided or complemented service delivery through peer education, HIV counseling and testing, adherence counseling, filing ART folders on clinic days and, conducting defaulter tracing in the communities. The models of hopes' contribution to service delivery and

coverage was significant and highly appreciated by clinical staff, who were thus able to focus on more technical areas of treatment, care, and support, especially at high-volume services facilities in major urban areas and cities.

Stigma and Discrimination Reduction

According to a UNAIDS press release in 2013, AIDS and stigma are concurrently spreading epidemics. The health care setting, which is to be a place of solace for people living with HIV (PLHIV) has become a hostile place because of stigma and discrimination. Data from 15 surveyed countries in Asia show that many PLHIV avoid clinics and hospitals for fear of being discriminated against. In health care settings, confidentiality and involuntary testing for HIV were also cited as issues of concern. The fear of occupational exposure to HIV by service providers leads to violation of clients' right to quality care. Based on these premises, FRHP in collaboration with GHS and NACP implemented a program across the five regions of whole-site orientation for reduction of stigma and discrimination against PLHIV. The program reinforced the practice of universal precautions for infection prevention and control to drastically reduce possibilities of workplace accidental injuries and exposure to HIV and other infections. Over the project lifespan, capacity was built at 85 major health facilities by training facilitators who went on to conduct stigma and discrimination reduction, post-exposure prophylaxis for HIV, and infection prevention trainings for both clinical and non-clinical facility staff, reaching more than 4,600 health care workers. Among the direct results observed at these sites were increased health worker awareness and implementation of post-exposure prophylaxis (PEP) protocols; increased respect for client's rights; reduced stigmatizing behaviors such as isolation of PLHIV; 'double gloving' during clinical procedures on PLHIV; increased number of clients and staff providing HIV services; and generally more supportive facilities for treatment and care of PLHIV.

HIV Service Quality Improvement

Apart from stigma as a barrier to service access, integration of HIV with other health facility services was constrained by inadequate trained personnel and equipment. HIV service staff felt 'alienated' in their work because they were poorly linked to services in other units due to stigma and inadequate knowledge of HIV and national program objectives among general staff. In order to break down these perceived and real constraints, the COPE (client oriented, provider efficient) quality improvement methodology that had been implemented at several major health facilities under the QHP was recommended for expansion by the GHS/NACP. Hence FRHP supported the GHS over the lifespan of the project to extend use of the approach for HIV service quality improvement to 48 major ART sites across the five regions. Onsite QI facilitators numbering more than 100 overall were trained and led their respective facilities in cycles of COPE exercises with participation by all categories of health staff (nearly 1,200 in number, including physicians, nurses, administrators, paramedic, and auxiliary personnel). Using COPE tools for quality based on universally defined clients' right and staff's needs, the exercises were used to identify problems affecting quality of care, their root causes, and remedial actions or solutions proposed in documented action plans. By spreading responsibilities for leading or mobilizing staff and resources to address identified problems, several staff were more informed and became involved in supporting or providing HIV services. Reduced stigma facilitated linkages with community sources and groups for care and support for PLHIV. In evaluating the result of implementation of the COPE QI strategy, health staff and managers at health facilities noted the following general outcomes:

- Improved client confidentiality
- Improved infection-prevention management and practices
- Reduced client waiting time
- Improved service availability (e.g., more clinic days, increased number of providers)
- More visible signage enabling more clients to locate and use services
- Establishment of complaint system to address clients' service-quality concerns

Several of the COPE action plans developed by facility staff conducting the exercises were implemented within the facilities' own resources, but FRHP contributed support in some infrastructural refurbishments and equipment provision, including the following; provision of patient waiting room benches, chairs, executive swivel chairs, desks, and filing cabinets for the Effia Nkwanta Regional Hospital in Takoradi; air conditioners, LCD television, and metallic client waiting chairs at the newly constructed ART center at the Nkenkaasu Government Hospital; and expansion and refurbishing of ART clinic and outpatient service areas at Konongo-Odumase, Suntreso, Kuntenase, and other hospitals. FRHP also procured IT equipment (desktop computers, external hard drives, and flash drives) and clinical equipment including scales and X-ray viewing boxes to enhance HIV services at health facilities across the five regions.

Improving HIV Data Reporting

The GHS invested in an electronic district-based health information management system (DHIMS) that has been operating since 2007. However, Global Fund-supported programs for HIV, TB, and malaria, which previously maintained parallel reporting systems due to the large number of indicators they report, and a lack of confidence in timeliness of reporting have slowly begun integrating into the DHIMS. FRHP under its general health systems strengthening program has complemented roll out and support of the DHIMS operations in districts of the focus regions. Additionally, FRHP also supported the focus regions to organize semi-annual HIV data validation meetings for regional, district, and sub-district HIV data managers and officers, HIV focal persons, and health information officers to review and assess HIV services and validate data for presentation at the National HIV and AIDS semi-annual and annual review meetings. It also helped reconcile HIV data, particularly in the DHIMS, and share information and ideas for improving HIV services. Gaps and other anomalies identified in the data collected were addressed.

Monitoring and Supervision

To enable comprehensive monitoring and support for HIV service improvement at health facilities, FRHP introduced an integrated approach to supervision. Existing checklists, SOPs, and guidelines for clinical service provision were used to update monitoring tools and checklists for HIV service and data reporting. FRHP supported the NACP to organize orientation and training sessions for supervisors including HIV regional co-coordinators, data mangers/officers (regional health information officers), district focal persons, and clinical trainers in the use of the reviewed/newly developed tools, checklists, and SOPs. In all five regions, these reorganized supervisory teams were supported to conduct visits at least semi-annually to health facilities in districts, monitor HTC, PMTCT, and ART services, and help providers improve service performance according to checklists and SOP standards.

B. HEALTH SYSTEMS STRENGTHENING

Health systems strengthening was a major focus of the project and had several goals, including: to build leadership capacity at regional, district, and facility levels; strengthen relationships with key governmental and nongovernmental actors who influence health; secure additional non-Ministry of Health/GHS funds for health services; strengthen health information systems and use of health data in decision-making; improve quality of care; and expand access to care in rural and underserved urban areas by increasing the number of functional CHPS zones.

B1. FUNDING TRANSFERS AND FINANCIAL MANAGEMENT

Consistent with the USAID Forward strategy that seeks to foster local ownership and accountability, FRHP provided a significant amount of funding to the regional and district health directorates of the GHS in the three focus regions. During the project period 2009-2013, USAID FRHP awarded twelve sub-grants to the three RHDs in the focus regions (GAR, Central, Western) with a total value of more than U.S. $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 U.S. $1,137,677. FRHP undertook extensive technical assistance and training in financial management for GHS regional and district staff to foster better understanding of USAID Rules and Regulations to ensure that sub-grant funds were well managed.

Training included basic accounting/cost principals, allowable/non-allowable costs, procurement, CD/VAT (custom duty/value added tax), cost-sharing principles, and reporting. Other workshops were held to cover the accounting, treasury, and finance (ATF) and financial monitoring guidelines followed by the GHS. In all, 1,168 GHS finance and program staff participated in the FRHP-supported trainings, including staff from RHDs, DHMTs, sub-districts, hospitals, community-based health planning and service (CHPS) zones, and private sector hospitals. 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.

FRHP completed a yearly appraisal of regional performance against weighted indictors during implementation of programs. Depending on the total performance score, a region received a performance award, which ranged in value from $10,000 to $40,000 (or nothing when performance targets were not met). The district-level performance-based sub-grants, referred to as “PBFs,” were implemented by DHMTs and district and municipal hospitals, which were eligible for a performance award 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.

The concept of direct funding through sub-grants was appreciated at regional and district levels, but complying with the USAID requirements was a new development and posed some challenges. Despite the complexities of USAID rules and regulations, however, less than 1% of RDH sub-grant expenditures were disallowed following independent audits, suggesting that the GHS managers and accountants worked diligently to use the funds properly and submit accurate, complete reports.

B2. INSTITUTIONAL CARE

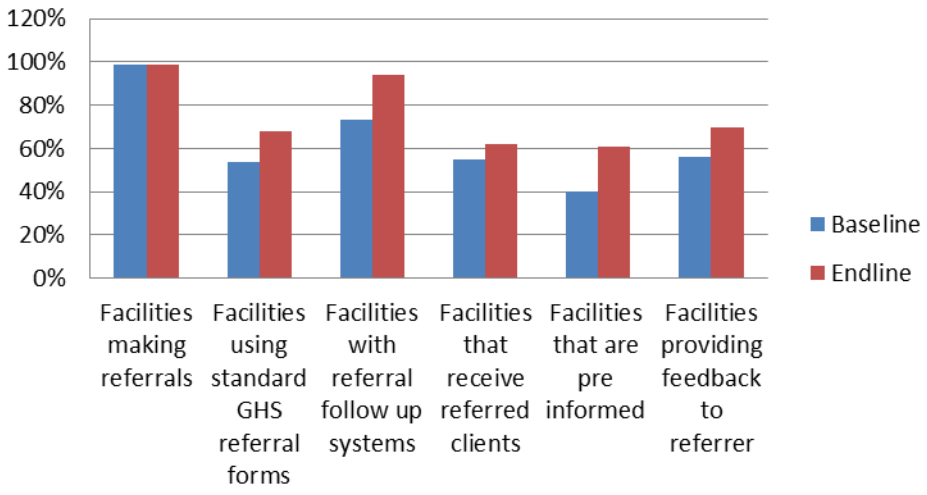
Institutional care is an integral aspect of both the health systems strengthening and health services improvement components of FRHP programs. The key objectives of GHS Institutional Care Division are the development and implementation of comprehensive clinical care policies, including strategies for impact on service access, quality and efficiency to consumers, information management and effective decision making, monitoring, and support for operational effectiveness of care delivery at health facilities.

Quality Assurance

For most of the past decade, instituting quality assurance as a continuous service quality improvement mechanism at health facilities has been of priority focus of the Institutional Care Division of the GHS. The availability of functioning QA teams is a major indicator for the GHS, which in the focus regions improved from 29% at baseline to nearly 50% at the end of FRHP. This achievement was reached through FRHP's support for the QA methodology training of more than 700 health staff. Of these, about 100 were trained as facilitators who enabled the respective regions meet their plans for training and establishing their QA teams. FRHP also helped two of the focus regions to refine guidelines and checklists and implement a 'peer review' approach involving all district and regional hospitals that evaluated selected QA indicators (environment, infection prevention and control, emergency services and systems, quality improvement activities, clinical practice, customer care, occupational health and safety, and management practices) and ranked by merit on an annual basis. The QA peer review exercises and disseminating meetings that engaged the generality of staff helped spread the methodology and the communication and implementation of service delivery standards at these facilities. Competition for a high rank in these reviews motivated improvement in performance among participating facilities, and GHS wants to refine and expand the approach to more facilities. FRHP contributed to the revision of the QA manual to reflect emerging dimensions of performance, including improving health insurance coverage, client awareness of rights, demand for quality service, work place safety, and minimize adverse

A CHO checks client records along with commodity stocks.

FIGURE 5: COMPARISON OF REFERRAL PRACTICES AT BASELINE AND ENDLINE



clinical care events and legal contests. The document was still in development but at a highly advanced stage by the end of the project, however.

Infection Prevention and Control (IPC)

Infection prevention and control remains a major area of focus by the GHS ICD, which aims to mitigate factors related to the spread of infections within the health care setting and prevent the spread of microorganisms that could cause disease in an individual or the surrounding communities. Development and dissemination of a national policy on IPC and related procedures and guideline document on practice at health facilities has been going on for the past decade. FRHP's assessment of IPC practices in the focus regions at baseline showed wide variation, with most facilities lacking the IPC committees and programs required by the policy. FRHP supported the GHS ICD to revamp strengthening of IPC practices at health facilities, providing 30 major district hospitals including the Korle-Bu Teaching Hospital with TOTs and whole-site comprehensive trainings for nearly 2,600 clinical and non-clinical staff; highlighting standard precautions implementation, aseptic techniques with selected clinical procedures, and equipment, infrastructure, and environmental issues. In three districts, the IPC roll out covered all facilities (hospital- to the CHPS-level). Some of the facilities received support to construct or refurbish incinerators and waste-dumping concrete pits.

Referral and Emergencies Policy/Guidelines

The GHS ICD has continued to make efforts to strengthen the referral component of health care management to ensure continuity of safe and effective care for clients. This is particularly critical for managing emergencies during pregnancy and childbirth and for sick children. FRHP supported the revision of the referral policy and related instruments such as the standardized referral and feedback/outcomes forms, informed consent form for clinical procedures, client complaints, and management guidelines, and printed several quantities for distribution at all health facility levels. Baseline and endline comparison of referral practices in the focus regions showed improvement in some indicators, including increases in proportion of facilities using the standardized forms, conducting follow up, and providing feedback to the referring facilities, as illustrated in Figure 5.

FRHP also supported the ICD to design a policy and guidelines for standardizing accidents and emergencies management at all health facilities of the GHS. The guidelines established standards for setting up emergency units at the facilities, training assigned staff triaging, resuscitation, life support skills, and equipment needs. The document was printed and continues to be disseminated at health facilities by the ICD, which is also conducting trainings in collaboration with a national ambulance service.

Left to right: A facility waste dump; a newly constructed incinerator; and a secure placenta disposal pit.

B3. COMMUNITY-BASED HEALTH PLANNING AND SERVICES (CHPS)

Some CHPS Successes

- **In Dangme West District, CHPS contribution to OPV3 coverage increased from 25 % in 2011 to 41% in 2012.**
- **In the AAK District in the Central Region, CHPS contribution to TT2+ coverage increased from 49.9% in 2010 to 66.5% in 2011.**
- **In the Ga South District, CHPS contribution to FP increased from 0.5% in 2011 to 46.2% in 2012.**

Since being adopted as a national strategy in 2000, the Ministry of Health (MOH) and the GHS have worked to strengthen CHPS as a 'close-to-client' service delivery mechanism for people living in rural, hard-to-reach areas. More recently, attention has focused on the need for CHPS in underserved urban areas as well. Since 2009, the MOH has issued guidance to reduce emphasis on the construction of CHPS compounds for service delivery, shifting attention to 'functional zones,' defined as zones with all other elements operating, even as outreach in the absence of a permanent compound.

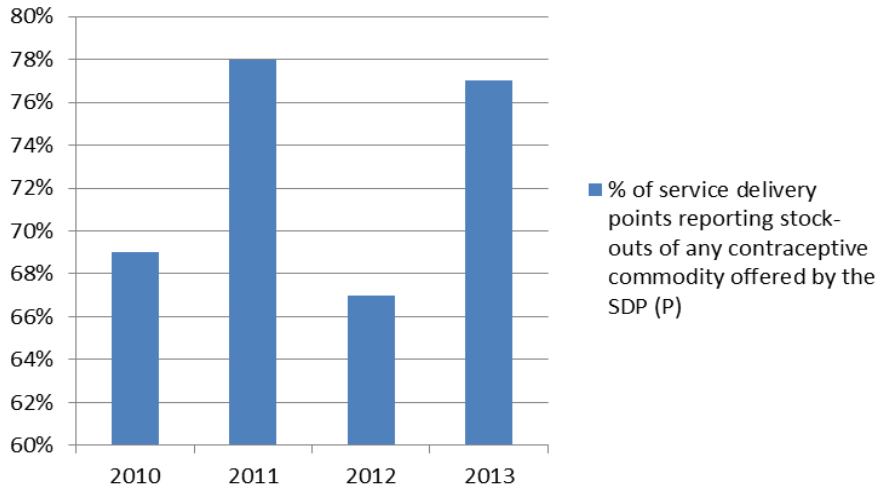
Implementation of the CHPS strategy to deliver primary health care services received a major expansion in the focus regions. The number of functional CHPS zones rose from 221 at baseline in 2010, to 509 by the final year of the project. About 600 CHOs completed training in the full complement of the CHPS modules, and more than 1,100 community health committee (CHC) members, who support CHOs, were trained and deployed. Several CHPS compounds received basic service equipment, and CHOs were also trained or refreshed in several of the primary health care service delivery areas, including FP counseling, CTU, implants insertions/removal, focused anti-natal care (FANC), malaria case management, health information management, and logistics management.

The community support functions carried out by CHCs was boosted through training of several volunteer members as noted above. FRHP worked with GHS PPME to revise and print several copies of a simplified version of the CHC training that was more user-friendly and effective for building volunteer skills in community mobilization and utilization of health programs. Policy orientations were conducted for 60 district directors of health services in the three regions, which enabled them to provide the necessary leadership for CHPS implementation in their respective districts.

A newly refurbished and equipped 'skills laboratory' of a pre-service institution.

B4. PRE-SERVICE INSTITUTIONS

FIGURE 6: FP ANNUAL STOCKOUT INDICATOR LEVELS



FRHP undertook a situational assessment of pre-service institutions in the three regions in early 2010 and identified the following gaps that needed immediate filling: inadequate teaching and learning materials; poorly resourced skills/demonstrations laboratories; inadequate preparation of preceptors who conduct practical training of students; and lack of teaching and demonstration materials, especially at clinical attachment sites where students undergo practicum. The findings informed specific interventions for strengthening the pre-service training with FRHP support. A series of technical stakeholder meetings involving the MOH, GHS, nurses, midwives council, and other partners resulted in the revision of the Reproductive Health (RH) Classroom Activity Guide, student handbook, and trainers' guides. This was followed by training of 148 midwifery preceptors and tutors from the three regions in the revised standards and improved facilitation, and clinical practice skills to enable them to train midwifery students. In addition, the midwifery tutors from the training institutions received RH and MNCH data management updates to enhance their teaching, as this area is one of the major challenges in the health systems.

FRHP also provided infrastructure refurbishments to the skills and demonstration laboratories at pre-service institutions (Tarkwa, Sekondi, and Cape Coast midwifery schools) and one community health nurses' training. Additionally, all four institutions and a fifth, the Korle-Bu Midwifery Training School were given clinical equipment and anatomical models for practical training. The assortment of equipment, including a breast examination model, child birth simulator, newborn postpartum simulator, prenatal exam simulator, and FP educator, were also provided to 34 midwifery training attachment sites at various health facilities in the three focus regions.

B5. SUPPLY CHAIN MANAGEMENT

Despite a great deal of work by the GHS and partners, supply chain management continues to be a major challenge in Ghana. Stock outs of contraceptive supplies, essential medicines, and other health commodities at the service delivery-level undermine efforts to provide quality health care to clients. FRHP understood that an effective supply chain requires workers who are trained in the use of necessary logistics management information tools (inventory control cards, report requisition issue receipt voucher (RRIRV), worksheets, etc.), infrastructure (warehousing and improved conditions of storage), and provided with timely technical support for comprehensive stock status monitoring and reporting. The overall achievement of FRHP technical assistance

to the GHS in this area was moderate, as illustrated in Figure 6. The percentage of service delivery points that stocked out on any of contraceptive commodities remained at a rather high average level of 70% throughout the project. It is arguable that the latter indicator was difficult to change as several factors had an effect on it, including the result of the replacement of some categories of hormonal contraceptives (including implants), and gaps with procurement deliveries.

A well-managed commodities store with inventory control tools in full use.

Logistics Management Information Systems (LMIS)

Despite these outcome indicators, FRHP achieved tremendous improvements in supply-chain operations management in accordance with steps provided in LMIS protocols and SOPs. Using FP commodity stock management practices as sample, regular use of RRIRVs across the focus region improved to more than 50% at endline, compared to almost zero at baseline, and physical availability of this tool as observed during monitoring at health facilities reached approximately 40%, and use of bin or inventory control cards with FP commodities reached roughly 70%. These achievements were a result of the varied list of FRHP-supported interventions to help GHS strengthen supply-chain management.

One of the key activities conducted in this area was training health staff in the LMIS and SOPs for commodity management. An approach that targeted supply chain managers by category, broadly defined as 'traditional' (pharmacists, dispensary, and store managers), and 'non-traditional' (other health cadres, physicians, nurses, midwives), was used to build capacity to operate a more efficient supply-chain systems at GHS service delivery levels. The trainings covered nearly 950 commodity managers over the period, especially targeting CHOs at the CHPS compounds, who had the least background in logistics management but who regularly manage a range of commodities required for primary health care delivery at their facility level.

FRHP also complemented the support of USAID | DELIVER project's nationwide capacity-building by developing training and supervisory personnel in logistics management by covering this effort for the three focus regions. FRHP introduced a mix of district-to-district and region-to-region peer monitoring approaches that enabled an assembly of logistics managers from one location to apply standardized checklists and tools to evaluate performance, lessons, and results to close supply chain management gaps. These semi-annual activities complemented the regular supervisory visits to ensure compliance with logistics management SOPs at health facilities.

Disposal of Expired Drug and Non-Drug Commodities

An often overlooked issue in the supply chain system is standards for disposal of expired medicines and other health commodities. As a result, several health facilities and medical stores had storage space occupied by expired commodities, posing a health hazard and possible illicit or fraudulent use. FRHP helped GHS revise and complete guidelines on disposal of expired medicines and non-drug expendables. Subsequently, more

than 320 logistics' managers from roughly 90 GHS facility-level stores and the three regional medical stores received the orientation and began implementing the guidelines. Regular monitoring and supervisory visits to facilities also included reviews of the state of the storage environment for health logistics. FRHP contributed to major refurbishments to make room for lockers and shelves to hold commodities at the regional medical stores in the three focus regions, and (on a smaller scale) at about 20 health facilities.

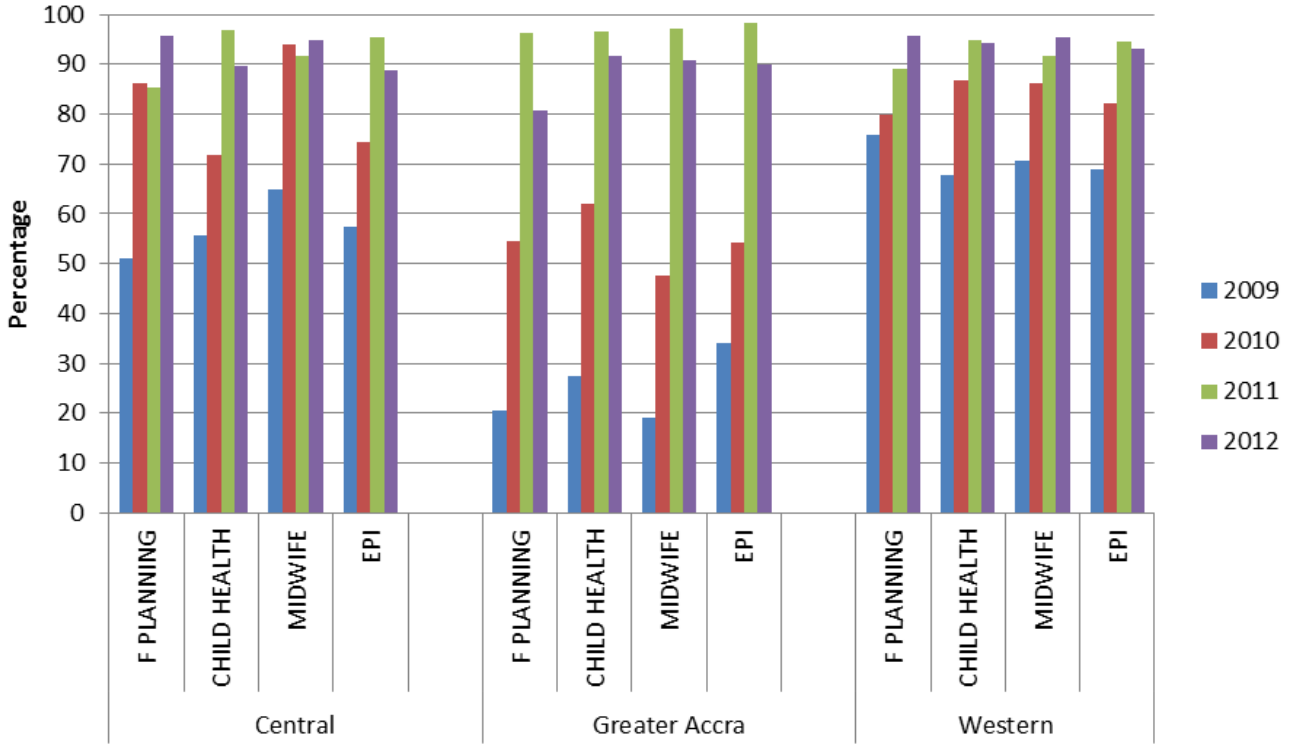
Early Warning System (EWS)

The EWS was developed and implemented in partnership with the USAID | DELIVER project. The system involved use of personal mobile phones by frontline staff for weekly online reporting on stock levels of a selected number of essential program commodities (for FP, malaria, and HIV) at health facilities. The system has been in operation since 2011 and covers 204 health facilities and three regional medical stores in 25 districts of the three focus regions as well as 225 other hospitals that provide ART and PMTCT of HIV (PMTCT) services nationwide. The weekly reporting rate averages between 70– 80%, which enables the real-time visibility of stock status of these commodities. However, GHS managers' regular monitoring of the system to respond in a timely fashion to adverse stocking of commodities has been rather low. However, there is high national-level interest in the EWS and there are plans to adapt the platform to a national e-LMIS.

B6. HEALTH INFORMATION SYSTEMS

In 2008, the GHS developed and successfully deployed the DHIMS electronic software system, opening a new way to improve the collation and analysis of health services data for speedy decision-making. Subsequently, all districts in the 10 regions of the country were provided with the necessary hardware to operate within the system, which was located in the Centre for Health Information Management at the headquarters of Ghana Health Service. But several challenges, categorized in broad areas including personnel, training, equipment/logistics, software, reporting forms, and registers (by quantities and design formats), management, confounded full and optimal operations of the system. These challenges defined the necessary intervention areas for FRHP technical assistance in the focus regions and also partly at the national level. Using reporting rates of a sample of service areas such as family planning, child health, midwife returns, and EPI as an index for the performance of the health information management system, the evidence showed a consistent increase for all three focus regions, from baseline in 2009 when rates ranged from a low of 20% in the Greater Accra Region, to 90–100% by 2012 (Figure 7).

FIGURE 7: REPORTING RATES FOR SELECTED FORMS, 2009-2012

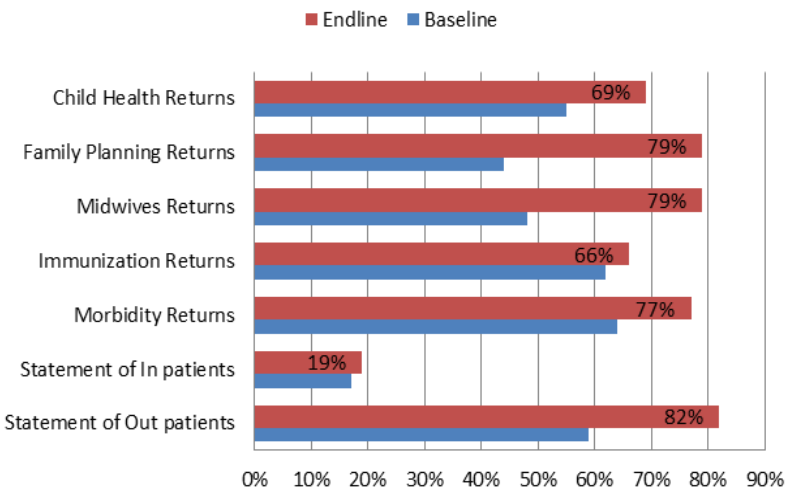


FRHP interventions for strengthening the health information system began at the primary data collection source. With support from partners including FRHP, GHS revised all data collection registers used in the service to bring all programs on board and to ensure inclusion of variables for reporting all indicators used for program reporting. FRHP printed large quantities of the revised reporting registers and forms and also rolled out orientation for nearly 3,500 health staff, virtually all of whom were part of the data collection process at health facilities in the focus regions. The effect of this exercise is evident in the availability of forms, and registers at a sample of facilities increasing over baseline by an average of 20% at endline.

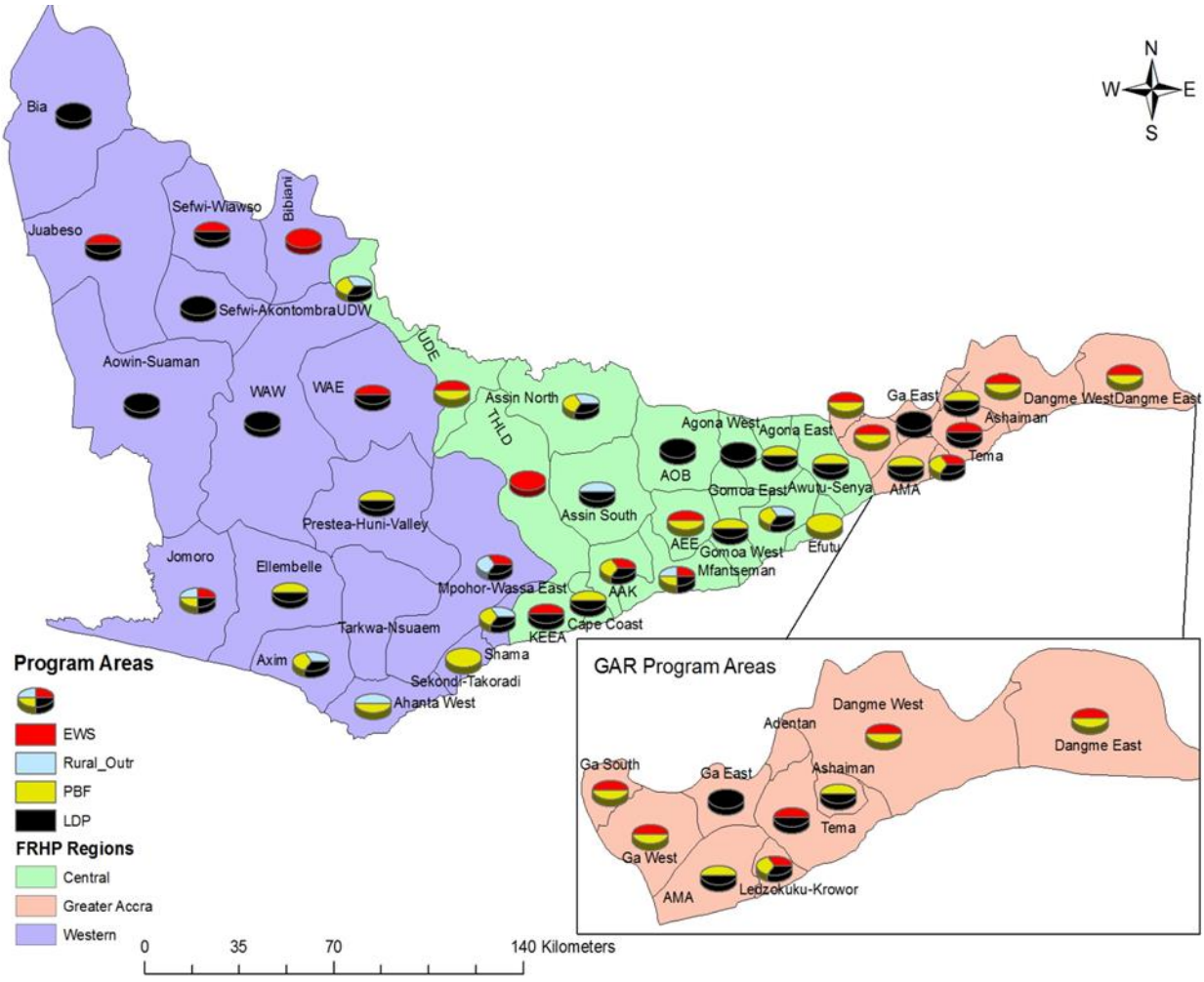
Operating the DHIMS involves inputting, analyzing and developing reports, and that personnel and managers have a thorough understanding of these processes and expected outcomes. The GHS conducted trainings and orientations over the years but the pace of coverage was not adequate to reach expected targets. FRHP provided a boost for this intervention, making it possible to reach more than 650 staff, including managers at the regional, district, and sub-district levels. FRHP also supported the development, printing, and distribution of DHIMS manuals, including the Standard Operating Procedure on Health Management Information System and the District Information Utilization Manual, and facilitated their introduction to service providers. Some districts and facilities identified with urgent need received computers and accessories (desktop and laptop computers, modems, flash drives, hard drives) procured by FRHP to enable them continue operating the DHIMS. FRHP also ensured that all district directorates and some hospitals received or had arc files for filing and storing hard-copies of data reporting forms from facilities as back up for reference after content was keyed into DHIMS.

FRHP technical assistance enabled supportive supervision and monitoring of DHIMS operation by the national, regional, and district levels to subunits. Supervisors conducted visits at least twice a year to ensure that procedures for recording and reporting data were maintained according to protocol. FRHP also enabled half-yearly data validation meetings at the district and regional level, and vetting of reported data used at performance reviews by the districts and the regions. FRHP conducted data quality assessments for project indicators that used the GHS service data reported in the DHIMS to confirm accuracy and validity before use in reports for USAID.

FIGURE 8: AVAILABILITY OF GHS REPORTING FORMS AT HEALTH FACILITIES



Geographic information system (GIS) application, gaining use in other sectors in Ghana, was part of the redesign of the DHIMS new version, known as DHIMS-2. GIS displays data on geographical maps for quick reference to contrasts in data by location and targeted response. FRHP conducted GIS skills training for health information officers in all three focus regions. However, ongoing geographical coordinate mapping of the locations of health facilities in the respective regions must be completed before the regions have comprehensive GIS coverage.



FRHP program areas in the focus regions.

B7. LEADERSHIP DEVELOPMENT PROGRAM (LDP)

In 2008, the GHS initiated the Leadership Development Program (LDP) to strengthen leadership and management capabilities at all levels of the health care system. Unlike traditional approaches to leadership development that teach theory in a classroom setting, LDP is an experiential learning program conducted over a four-to-six month period. Over a two-year period, LDP was conducted for 34 regional and district health management teams in the three focus regions. A third of the group fully achieved or exceeded their objectives; the other teams only partially achieved their objectives within the designated period. Key achievements made by the LDP implementers in their respective districts or regions included improved data reporting and information management; rehabilitation and infrastructure upgrades; improved provider competency; better service organization and client flow; improved supply and commodity management; increased use of health services; quality improvement; and public-private collaboration for expanded service coverage. The GHS is continuing to improve the capacity of regions to facilitate expansion of this program in more districts.

B8. REFURBISHMENTS AND RENOVATIONS

Health facility infrastructural refurbishments were conducted at 86 sites (hospitals, health centers, CHPS, etc.) to improve the service delivery environment with requisite amenities for the comfort of providers and clients, ensuring privacy and confidentiality for client provider interactions, facilitating health education and behavior change communication, and generally improving workplace safety. Nearly U.S. $2 million was spent on these upgrades, which included refurbishments for skills labs and other subunits of pre-service training institutions and health facilities in the three focus regions.

A refurbished health facility.

B9. EQUIPMENT

FRHP procured and delivered clinical and complementary equipment (including furnishings) to GHS service and administrative units across all project regions for a total value of almost U.S. 4.2 million. Among the consignment were theatre equipment for the Ridge, Achimota, and Ga South hospitals in Greater Accra, and the Effia Nkwanta Regional Hospital in Western Region. Other clinical equipment included caesarean section and hysterectomy sets, autoclaves, blood bank fridges, examination lights, delivery beds, delivery sets, suction machines, neonatal resuscitation kits, and LAPM kits. Also among the procurements were training/anatomical models (such as mannequins, pelvic dummies, childbirth simulators, implant and IUD training models) delivered to midwifery, nursing, and community nursing training schools, as well as in-service training sites and pre-service field practice sites.

A large consignment of clinical equipment ready for handing-over to the GHS.

B10. OTHER/NATIONAL LEVEL SUPPORT

FRHP's technical assistance to the GHS boosted several strategies already outlined under national policies and guidelines, and covered to scale as per yearly work plans developed in respective regions and districts. It was also provided at several direct national level activities, some of which have been described under respective technical and health systems program results sections of this report. Examples of support include interagency coordination of nutrition programs, development of a national nutrition policy and development of job aids for IYCF; redesign of GHS data registers and forms by the CHIM; the ICD's mock NHIS accreditation

exercises with health facilities; and revision of the national maternal mortality audit tool by the FHD and subsequent roll out training of trainers for the tool. FRHP also supported the organization of conferences for various health care professional groups, including medical directors, public health nurses, and midwives that were essential forums for sharing policy directions and lessons. Participation in international conferences by GHS program and administrative directors, in particular the global conferences in FP and newborn health, were also sponsored by FRHP in response to USAID/Ghana's vision of facilitating program strengthening with current evidence and practices.

CHALLENGES AND LESSONS LEARNED

While the FRHP was overall a great success, there were a number of challenges overcome and lessons learned over the life of the project. Future efforts at health system strengthening in Ghana could benefit from special attention to the following issues.

Joint annual program planning with the RHDs fostered collaboration and ensured a sense of local ownership of the project's activities. However, this involved a series of consultations and negotiations that turned out to be quite prolonged at times and often left a short period for implementation. This resulted in reduced program activity scale. In the future, aligning program timelines between the donor-funded project and the GHS would allow more coordination and collaboration of planning and activity implementation. Similarly, we found that not all health managers at the regional, district, and sub-district levels had knowledge of national policies or strategies and hence lacked enthusiasm for adopting and facilitating implementation of some programs. Improved dissemination of national policies and strategies to all levels of the health system would rectify this as well. Joint planning forums would harmonize programs where multiple sources of funding and support from different partner organizations exist in the regions.

Because the project relied upon existing data sources for many of its monitoring indicators, it did not create a parallel M&E system. We discovered that few districts have the capacity to analyze their own service data, which made it challenging to utilize data to measure progress on health outcomes through the PBF grants. Health managers are making little use of electronic-based management tools such as the DHIMS-2 and EWS for reasons not clearly established. To some extent, the pace of adaptation of technology by the service has probably been hampered by the low interest of managers. Future efforts should concentrate on strengthening the capacity of district- and regional-level managers to collect and use data for program decision-making.

A number of external factors hindered the project's ability to show sustained progress in some of its program areas. Nationwide stock outs of some drugs or commodities (e.g. HIV test kits, ARVs, RDT, SP) negatively affected program implementation and achievement. Trained staff turnover and attrition reduced capacity to provide services and negatively impacted programs in some locations. Private sector linkages with the GHS directorates are largely weak and this affected scale of the sector's involvement in programs and systems' strengthening efforts conducted through the GHS. GHS would benefit from guidance to overcome challenges to LMIS, human resources for health, and private sector involvement.

The comprehensive nature of the FRHP project design was critical to its success and should be replicated. RHDs expressed appreciation for the inclusion of all districts in their regions and resulted in a stronger partnership between regional and district health teams. Improving the knowledge and skill of health personnel in service delivery is important but not sufficient to transform quality standards. Complementary investments in equipment and facility refurbishment ensured that trained providers had the tools to offer quality services and drew clients into care.

The advantages of applying technology to facilitate data reporting, analysis, and use of data for decision-making is well understood and appreciated as it gradually gets adopted in health systems operations. The pace of adoption and implementation of these technology-based systems in the health services can be accelerated if key managers increase interest and facilitate application.

CHPS remains a major viable strategy for extending community access to the package of essential primary health care in the country. The comprehensive approach of training CHOs in the CHPS modules and other technical and health systems program components, as well as making available necessary service delivery equipment facilitated the rapid expansion in the numbers of functional CHPS zones. This approach should be sustained into the future, and advocacy, mobilization, supervisory support, and other roles of the district and sub-district management should be refined to achieve better quality standards for CHPS operations.

In-service training remains the key mechanism for integrating service delivery capacity to optimize client access to care and quality standards that improve the health status of individuals and communities. Success achieved by FRHP and other partners in maintaining or re-creating capacity for the regions and districts to continue applying in-service training assures sustenance of service integration into the future. However, in-service training implementation can be made more efficient by adopting electronic data bases to monitor selection, achievements, and distribution of trained providers. The pre-service levels that were targeted with capacity-building efforts to enable trainee health workers to attain care delivery skills for task-shifting and conducting integrated services need larger scale support in the future to achieve more from these objectives.

The expectation of health care delivery and management systems to function or perform efficiently to attain desired results is neither a recent development nor concept. Performance-based financing for program implementation is an emerging paradigm in the Ghana. FRHP's practical application of the PBF granting and positive outcomes laid the foundation for further refinement and scale up. Performance-based financing fosters viable bottom-up contribution of innovative ideas and local solutions for addressing health service performance gaps, and in some cases, delivers an exponential scale of achievement of results over a relatively short period. PBF is an effective mechanism for addressing a combination of critical factors necessary for achieving program targets at different levels and should be improved and mainstreamed.

Quality improvement is a core factor for ensuring effective outcomes of health system operations. The GHS QA program is in line with achieving this objective, and development and maintenance of functioning QA teams has been ongoing for several years. Under FRHP, a whole-site QA peer review dimension previously piloted in two regions was expanded to other focus regions and proved effective, especially in larger health facilities such as district and regional hospitals. The peer approach exposed more facility staff to the service QA standards and requirements, and fostered sharing of quality innovations that originate in various facilities for adoption by others. The approach has added value to QA and promises more achievements if sustained in the future.

CONCLUDING A PROJECT, PROMOTING A VISION

When JSI began the Focus Region Health Project in 2009, we were building on the vital foundation created by the GHS, the MOH in Ghana, and other USAID projects and programs. The vision of a comprehensive, well-managed health service delivery system that improves the health of families, women, men, and children was shared by all.

Partnerships, especially with the GHS and the MOH, were critical to project implementation and its strong results. From regional health directors and their staff to community health nurses in remote CHPS zones and the district health management teams that support them, partnerships created an environment for improvement. Capacity development was a key approach shared by regions, districts, and JSI's team, covering areas from leadership development and supply chain to long-acting methods of family planning and malaria diagnosis.

JSI also enjoyed particularly strong support from USAID/Ghana, including the Population, Health, Nutrition team and Contracts Office staff. This project's large portfolio of performance-based grants would not have been possible without their consistent programmatic and contracting support.

FRHP was a learning project involving studies, pilots, and scale-up of successful models. These include the Ghana Urban Malaria Study, the Early Warning System for stock outs, the introduction of the standard days method, a private sector study, continuous quality improvement, and a variety of practical trials of innovative practices in GHS districts.

Attention to cost containment and use of cost-effective approaches led to savings and increased value for government expenditures. JSI invested in identifying and using local expert consultants, from researchers to trainers and leadership facilitators. As often as possible, the project leveraged resources with partners to improve results and increase impact, and used a variety of procurement options to reduce cost while ensuring quality. The project's documented cost-share is well beyond the minimum required by the cooperative agreement. Overall, JSI provided excellent stewardship of U.S. Government funds and investment in sustainable improved service delivery.

At the end of the USAID Focus Region Health Project more than four years later, JSI is proud of the work that led to the measurable improvements in myriad areas discussed in this report. Systems improved, hospitals and health centers provided higher-quality care, and the correct drugs and equipment were available more often. But most importantly, the overall health of individuals and families in three regions of Ghana improved.

ANNEXES

I. FRHP PMP TABLE

II. COMPLETE TRAINING DATA 2010 -2013

III. PBF SUMMARY TABLE

IV. EQUIPMENT

V. RENOVATIONS & REFURBISHMENTS

VI. END OF PROJECT SUMMARY REPORT

VII. FRHP TECHNICAL BRIEFS:

- *EWS*
- *SUPPLY CHAIN*
- *PBF*
- *MALARIA*
- *LDP*
- *FP - LAPM*
- *FIN. MGT*
- *MNCH*

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