GHAIN SUPPORT TO ANTIRETROVIRAL THERAPY IN NIGERIA

END OF PROJECT MONOGRAPH

GHAIN
Global HIV/AIDS Initiative Nigeria

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INTRODUCTION

Antiretroviral therapy (ART) for the treatment of human immunodeficiency virus (HIV) infection has been shown to profoundly alter HIV disease progression, including the incidence of opportunistic infections in both adults and children (Melors JW et al 1997, O'Brien WA et al 1996, Palella FJJ et al 1998). Since 2002 FHI has pioneered the expansion of ART in resource-limited countries, initially in Ghana, Kenya, Rwanda and later Nigeria. Resources through global efforts as the WHO 3 by 5 Initiative and the US President's Emergency Plan for AIDS Relief (PEPFAR) have supported treatment scale-up in these countries and many others.

Nigeria, Africa's most populous nation with a population of over 150 million people(NPC, 2006) ranks third globally amongst countries with the highest HIV burden with an estimated 2.95 million people living with HIV(NACA, 2009a) It is estimated that 2.99 million deaths in Nigeria are attributable to HIV(NACA, 2009b). Prior to 2004, HIV care and treatment services were only available in 25 tertiary treatment centers across Nigeria. Only a total of 13,500 people living with HIV/AIDS (PLHIV) were on ART (NACA 2009c) a small fraction of the estimated 550,000 people requiring ART at that time (FMOH, 2009).

A child is examined by Dr. Regina Odeh at St.Mary's Hospital, Gwagwalada.

The Government of Nigeria (GoN) with the support of several partners took a policy decision to scale up ART programs to many more health facilities. At the end of 2010, Nigeria had a large ART program with over 300,000 patients on treatment care and support. The Global HIV/AIDS Initiative Nigeria (GHAIN) played a significant role in this rapid expansion of HIV/AIDS prevention, care and treatment services. Launched in December 2004 and funded by the President's Emergency Plan for AIDS Relief (PEPFAR) through the United States Agency for International Development (USAID).

This monograph describes how ART was implemented, what results were achieved and discuss lessons learnt as GHAIN supported ART between 2004 and 2011.

GHAIN'S ART PROGRAM STRATEGY

Site selection and start up process

Selection of sites to be supported by the GHAIN project was based on a combination of factors including; catchment area of health facilities, local government area (LGA), HIV prevalence, population density, national/state strategic plans, findings from baseline assessments and projects objectives. Establishing the ART sites started with in-depth participatory assessments of the health facility followed by development of a site specific plan for implementing comprehensive ART services. Hospital management team (HMT) which comprises of facility staff was established at the onset to oversee and manage the program in the facility. Subsequently a series of capacity building activities were carried out for the various thematic areas supported by the project while infrastructure upgrade was undertaken with the provision of basic equipments.

At the completion of this start up process, a comprehensive start up orientation and standard operating procedure (SOP) workshop was conducted to ensure that everyone had a clear understanding of the whole process while various facility – based focal persons were trained in the areas of clinical ART, pharmacy, laboratory and M&E. Service at this stage was provided with very close monitoring and mentoring until the trained staffs were able to provide services with only routine supportive supervision. SOPs and other job aides were made handy for easy reference at every service delivery point. All stages of the site selection, activation and startup process were facilitated by GHAIN. In addition GHAIN provided required basic clinical and laboratory equipments including automated CD4 count machines and others for hematology and chemistry.

Capacity building for health workers

Throughout the life of the project, significant resources were utilized to improve service delivery through the training of health care workers providing ART services. GHAIN training programs offer facility-based and centralized (resident) training for health workers providing ART. The centralized didactic trainings offered an opportunity of conducting trainings for several facility clinicians in one workshop while the facility based trainings offered the advantage of providing practical hands-on skills development for health workers. There were also monthly or quarterly continuing medical education (CME) sessions in all the sites supported as an avenue for experience sharing and updates on current trends in HIV care and treatment. With continuous quality improvement as a guiding principle, external

consultants with several years of experience in rendering HIV services were engaged at intervals to provide a structured mentorship program at these GHAIN supported health facilities. Additionally health care workers were trained on universal safety precautions and antiretroviral drugs for post exposure prophylaxis were provided for cases of sexual assault and occupational exposures. All trainings were done according to national standards and using national training curricular where available.

Approach to ART clients' recruitment, management and monitoring

Identification of the HIV positive client in an ART site involved the use of a combination of voluntary and provider initiated testing and counseling (PITC); these are described in greater details in the GHAIN HIV testing and counseling (HTC) monograph. HTC points across health facilities varied from site to site with testing occurring in places like the antenatal clinic (ANC), in-patient, laboratory, TB unit etc. Clients identified as HIV positive receive post-test counseling and are enrolled in care through the Patients' Management and Monitoring (PMM) unit in the records department of the ART site. HIV positive clients identified from other stand-alone counseling and testing sites and referred to the ART site were enrolled through the same process. Staging of patients and ART eligibility was determined according to national guidelines. All clients were monitored periodically based on appointments or during symptom based presentations. On each visit patients were examined for new OIs and other clinical symptoms managed as appropriate by trained health care workers. Patients' management and monitoring were based on national and international guidelines. Laboratory investigations were routinely done during clinical visits and appropriate actions taken based on findings. Patients also received required prophylaxis and ART as outlined in the national ART guidelines, and were also counseled on reproductive health needs.

One of the GHAIN supported sites (Maitama District Hospital) piloted screening for cervical cancer amongst women registered in the ART program using the visual inspection with acetic acid (VIA), while in another site in Kano cardiovascular disease (CVD) screening was also piloted.

Approach to patients' retention in care

Initiating an individual on ART requires lifelong commitment. Failure to adhere to therapy decreases the likelihood of successful treatment outcomes. Retention in care is defined as patients being alive and receiving antiretroviral therapy after a specifically defined follow up period (Rosen S et al, 2007). Patient retention is a function of attrition which includes mortality and loss to follow up. The GHAIN project developed specific strategies

to increase patient retention. These include establishment of an adherence counseling and patient tracking team in all supported ART sites; development of a standard operating procedure for patient tracking that outlines a stepwise process what to do when patient default on treatment; ensuring that all clients enrolled in care go through at least three adherence counseling sessions before initiation on ART and receive on-going adherence counseling with every contact with the ART site. A list of defaulting clients is generated 24 hours after failing to honor clinic appointment. The list is given to the facility tracking team which then tracks the patients through phone calls or home visits. Furthermore, GHAIN supported the establishment of a PLHIV support group in each ART site. Support group members were trained to provide adherence counseling, psychosocial support and funded to visit defaulting clients who could not be reached by phone.

Approach to improving uptake of pediatric ART

Using a family centered model of care, the GHAIN pediatrics' program encouraged HIV positive adults to bring their children for HIV counseling and testing (HCT). This strategy was further enhanced by the active sensitization and engagement through partnership with support groups and community based organizations. Other approaches to increasing identification of HIV positive children within the health facilities included support for multi-point HCT; offered at various service delivery points where children are seen, such as pediatrics outpatient department, in-patient wards, immunization and child health clinics. The use of provider initiated testing and counseling for sick infants and children, targeted counseling and testing in malnourished children using ready to use therapeutic food (RUTF) and community HIV screening by mobile CT teams. Additionally, GHAIN promoted early diagnosis of HIV exposed infant by linking supported PMTCT sites to the national early infant diagnosis (EID) network. GHAIN also constructed and equipped a PCR laboratory in Jalingo, Taraba state in north eastern Nigeria to support the National EID network and provide EID services to the vast majority of PMTCT sites in that region.

Approach to ART decentralization

The levels of care in the public sector in Nigeria are primary (facilities that are typically staffed by nurses, community health officers (CHOs), community health extension workers (CHEWs), junior CHEWs and environmental health officers), secondary (typically staffed by medical officers, nurses, midwives, laboratory scientists, pharmacists and community

health officers) and tertiary (typically staffed by medical experts and have special expertise and technological capacity that enable them to serve as resource centers (FMOH, 2004). Initiation of PLHIV on ART in the country was initially restricted to tertiary level hospitals due to weak systems, lack of required equipment and trained staff at other levels of care. GHAIN pioneered comprehensive HIV services at the secondary health facilities in the country by scaling up ART services to 112 sites between 2004 and 2011 by strengthening systems at that level through capacity building, provision of requisite equipment and infrastructure upgrade. As the secondary facilities became overburdened by patients it was necessary to decentralize services further to primary health centers which also served to take HIV services closer to the community. In 2010 working with the Ministry of Health, National Primary Health Care Development Agency (NPHCDA) and local government authorities, GHAIN began decentralizing ART services to primary health facilities, by promoting task shifting and use of community pharmacists.

Approach to maintaining quality of care

Approaches to maintaining quality of care included: ensuring that staff were trained on aspects of their work followed by on-site mentoring and supervision before service initiation. Additionally, standard operating procedure, national guidelines, flow charts and job aids were provided to health workers to guide their operations. Monthly or quarterly CMEs were also conducted on-site to provide updates. Each ART site also had quality improvement team that comprised representatives of the various service delivery points and a support group member to monitor program performance at site and identify topics for quality improvement. GHAIN zonal offices conducted quarterly program review meetings where representatives of Ministry of Health, state agencies and health facilities attend. These meetings provide opportunities for stakeholders to jointly review program performance and proffer ideas for improvement.

Cross-cutting approaches

A software package developed by GHAIN served as an electronic database for patients' records, making the use of electronic medical records (EMR) possible in 11 ART clinics. Lafiya Management Information System (LAMIS) is an electronic patient management and monitoring and inventory control system which captures client level data of clinic visits, laboratory testing and drug dispensing. It is able to generate list of defaulters for appointment with their contact details to ease tracking. Clients' status updates are also captured following tracking efforts.

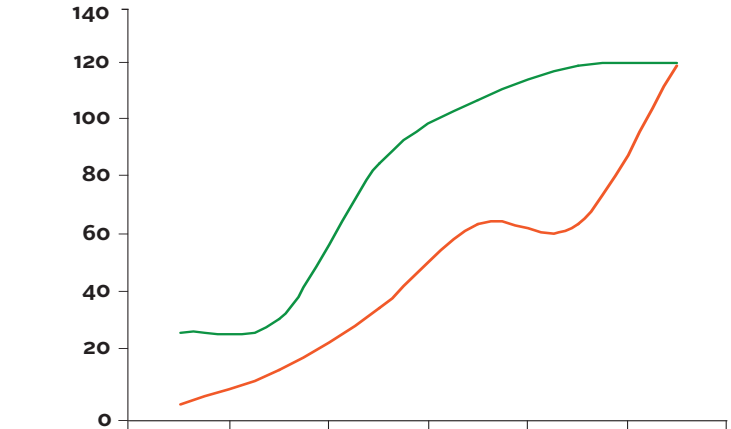
PROGRAM ACHIEVEMENTS

The GHAIN project contributed significantly to the Government of Nigeria's effort to increase access to HIV care and treatment services in Nigeria. By setting up HIV care and treatment sites every state of the country with over 172,000 patients initiated on ART, the project accounts for over a third of clients initiated on ART in Nigeria as of June 2011. Additionally the project had a substantial number of sites implementing integration of HIV and other services in the country. These include RH/HIV integration, TB/HIV collaboration and malaria in pregnancy (MIP). The GHAIN project was also one of the first few projects to pilot decentralization of ART services to the primary health care facilities in Nigeria. The project also contributed significantly to health system strengthening efforts through capacity building for health care workers, infrastructure upgrades, establishment of effective health management information systems and provision of basic clinical and laboratory equipment. To ensure high quality service delivery, effective commodity management and tracking systems were established in all the sites

Between January 2005 and June 2011, a total of 125 ART sites were set up comprising 122 secondary and 13 tertiary sites. One hundred and twenty four sites provided ART services to both adults and pediatrics while one provided services only to adults. Between the same period, 172,967 PLHIV ever received ART while 133,188 were currently on ART in the GHAIN project. The pediatric age group accounted for 5% of the total enrolment and currently on ART population. Analysis of a cohort of patients followed up on ART in sites with electronic medical records had a retention rate of 77.8% after 12,611 person-years of follow up (Odafe et al, 2011). The survival rates in this cohort were 86.7% at 12 months, 82.1% at 24 month and 77.8% at 36 months on ART (Coetzee D et al, 2004). Additionally, exploration of CD4 count test results for cohort population showed increases by +160 cells, +190 cells, and +221 cells above a median baseline CD4 of 152cells/mm^3, at second, third and fourth follow up investigations respectively (Odafe S et al, 2011).

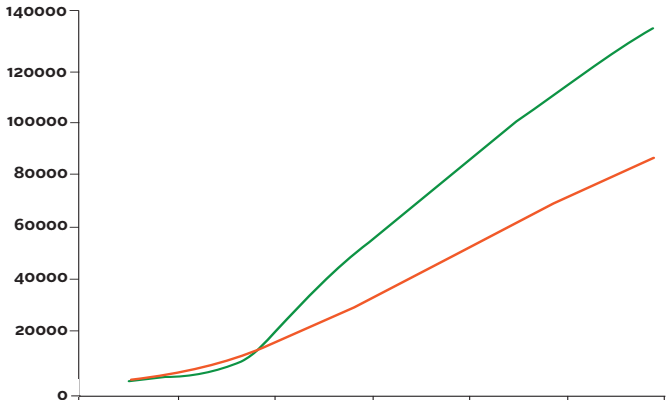
PERFORMANCE INDICATORS CHARTS

Figure 1.0 Number of service outlets



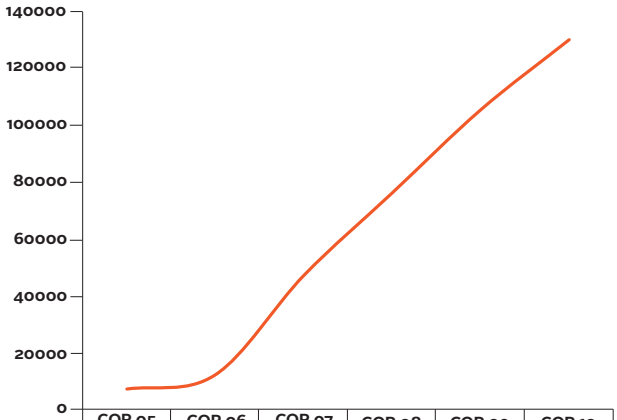
	COP 05	COP 06	COP 07	COP 08	COP 09	COP 10
Target	6	18	40	69	69	124
Actual	31	36	90	112	124	125

Figure 2.0 Number of individuals currently receiving ART



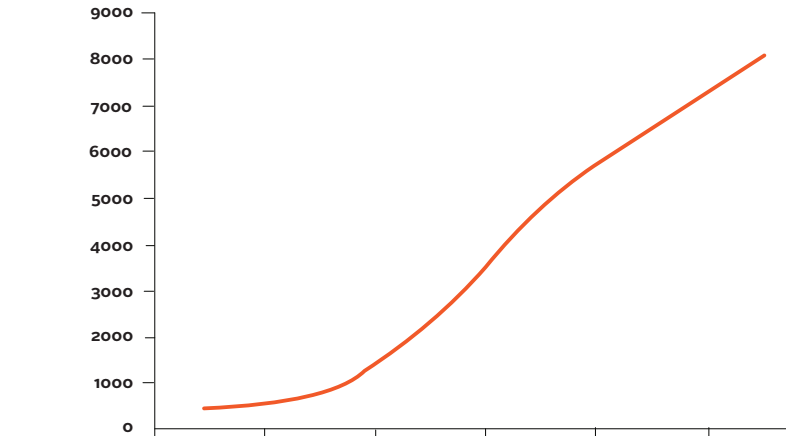
	COP 05	COP 06	COP 07	COP 08	COP 09	COP 10
Target	6640	14240	31906	49681	69635	86500
Actual	6722	12241	47535	77929	107854	133188

Figure 2.1 Number of Adults receiving ART



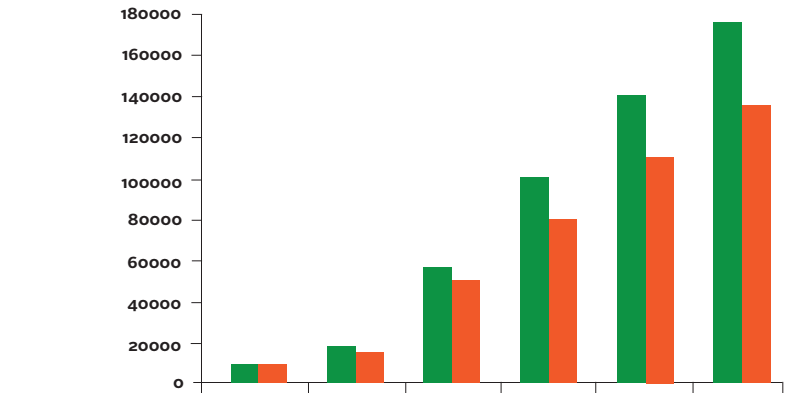
	COP 05	COP 06	COP 07	COP 08	COP 09	COP 10
Adult	6233	11435	45135	73,151	101328	125115

Figure 2.2 Number of children (<15) receiving ART



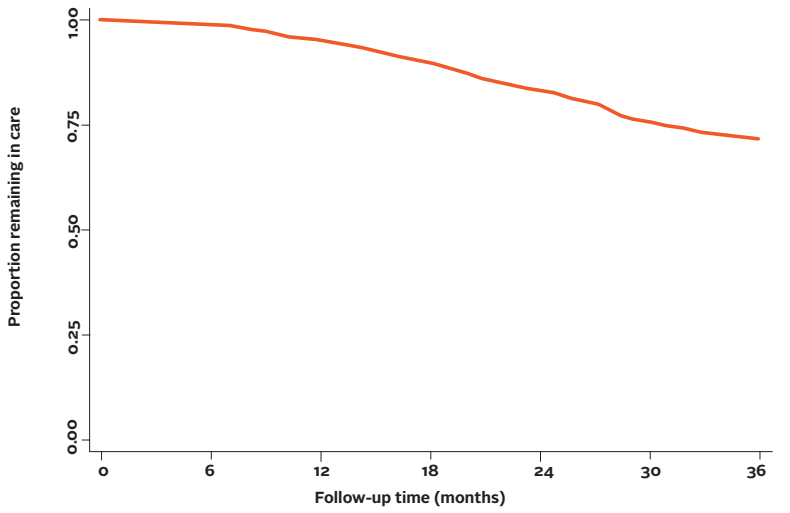
	COP 05	COP 06	COP 07	COP 08	COP 09	COP 10
Pediatric	489	806	2400	4778	6526	8073

Figure 3.0 Number of individuals who ever received vs. currently receiving ART.



	COP 05	COP 06	COP 07	COP 08	COP 09	COP 10
Ever Received	6722	15332	53676	97365	137666	172967
Currently Receiving	6722	12241	47535	77929	107854	133188

Figure 4.0 Kaplan Meier estimates of survival



Results for the CVD pilot in Kano showed that of the one thousand and thirty nine clients (1,039) screened, 769 (74%) were females while 270 (26%) were males aged between 18 and 70 years and 16% were ART naïve. The commonest risk factors identified were age and male sex [26%], increased BMI [23%] and hypertension (16%).

Frequency distribution of CVD risk factors by ART status

Risk Factors		ART Naive	On ART	Total	N%	X2	P - Value
Sex	F	127	643	770	74	0.447	0.564
	M	40	231	271	26		
Age in years	<40	129	642	771	74	0.96	0.327
	40+	38	230	268	26		
Body Mass Index	<25.00	125	634	759	73	0.55	0.46
	25.00+	35	207	242	23		
Blood pressure mmHg	Hypertension	25	139	164	16	3.91	0.271
History of Smoking	NO	151	793	944	91	0.001	1
	YES	13	69	82	8		

Results from the cervical cancer screening in Abuja showed that of the 834 HIV+ women offered VIA screening between April 2010 and April 2011, 805(96.5%) accepted the screening. Complete data was available for 802 (96.2%). The mean age at screening and first sexual contact were 32.0 (SD 6.6) and 18.8 (SD 3.5) years respectively. Baseline CD4 counts was <200 in 287 (35.8%), and >350 in 22 (2.7%). Majority (47.4%) had secondary education and 29.5%had tertiary education. Married women accounted for 56.1% and 29.4% were single. VIA was positive in 52 (6.5%) women while 199 (24.8%) had a STI syndrome. Of the 199 who had STI syndrome, 8 (4.0%) had genital ulcer syndrome, 30 (15.1%) had lower abdominal pain syndrome and 161 (80.9%) had vaginal discharge syndrome. Secondary education (p=0.019) and having lower abdominal pain syndrome (p=0.001) were significant predictors of a positive VIA result. Women with secondary education were 5 times more likely (OR 5, 95%CI: 1.30-19.25, p=0.019) to have a positive VIA result while women with lower abdominal pain syndrome were 47 times more likely (OR 47.9, 95%CI: 4.8 - 480.4, p=0.001) to have a positive VIA result.

DISCUSSION

The challenges of delivering ART in low resource settings have been documented, most notably: shortages of health care staff; inadequate drug procurement and laboratory capacity; weak health facility infrastructure; and inefficient health data management systems (Coetzee D et al 2004, Lawn SD et al 2010, Van DW et al 2006). The GHAIN ART program faced significant challenges during its implementation. The principal challenge was the weak health systems and substantial shortages of skilled staff at participating facilities. Low staff morale was tackled by providing non-monetary incentives like awards for outstanding staff and high performing sites. Pre-implementation infrastructure was often poor and dilapidated. GHAIN addressed these by rehabilitating the infrastructure at various service delivery points and procured new and replaced broken down equipments for the laboratory. Generators were provided to ensure uninterrupted power supply. Boreholes were sunk in some sites to ensure facilities have access to potable water. The health information and supply chain management systems were weak. The project strengthened these systems through capacity building for existing staff and developing tailor-made tools including electronic medical record systems such as LAMIS and a logistics management information system (LMIS) to enhance monitoring.

Evidence of positive clinical outcomes of ART patients managed at primary clinics has been reported by several studies (Coetzee D et al 2004, Shumbusho et al 2009, Stringer et al 2006, Zachariah et al 2009). The GHAIN project piloted decentralization of ART services from secondary level facilities to primary health centers in Nigeria. This was done primarily to address the challenge of congestion at the secondary sites and to take services closer to the communities were patients live. Two sites; General Hospital Calabar, Calabar South LGA of Cross River State and Infectious Disease Hospital Kano, Nasarawa LGA, Kano State were involved in decentralization of ART services to five primary health centers in the same local government areas of each state.

CONCLUSION

Despite significant challenges, the GHAIN project was able to achieve its objectives and targets. Assisting the government of Nigeria to increasing access to HIV care and treatment services, by providing care and treatment services to over 170,000 people living with HIV, 5% of whom were children. The integration of screening for CVD and cervical cancers into HIV comprehensive care services is feasible and acceptable. The project's success can be attributed to strong focus on health systems strengthening, service integration and collaboration with governments' ministries and agencies at all levels. Future projects to be implemented in Nigeria should include a strong component of health system strengthening and should focus on service integration and decentralizing services to the primary levels of care.

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