

HEALTH REFORM FOUNDATION OF NIGERIA

IMPACT, CHALLENGES AND LONG-TERM
IMPLICATIONS OF
ANTIRETROVIRAL THERAPY PROGRAMME
IN NIGERIA

HEALTH REFORM FOUNDATION OF NIGERIA (HERFON)
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PROGRAMME IN NIGERIA

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ACRONYMS

ACRONYM	NAME
3TC	Lamivudine
ART	Antiretroviral Therapy
ARV	Antiretroviral drugs
APIN	AIDS Prevention Initiative Nigeria
AZT	Azidothymidine
CD4	Cell Differential
D4T	Stavudine
CBO	Community Based Organization
CHEW	Community Health Extension Worker
CHO	Community Health Officer
CRS	Catholic Relief Services
FMOH	Federal Ministry of Health
GDP	Gross Domestic Product
HAART	Highly Active Antiretroviral Therapy
HCT	HIV Counseling and Testing
HEAP	HIV/AIDS Emergency Action Plan
HIV	Human Immunodeficiency Virus
AIDS	Acquired Immunodeficiency Syndrome
JUTH	Jos University Teaching Hospital
LACA	Local Action Committee on HIV/AIDS
LUTH	Lagos University Teaching Hospital
DOTS	Direct Treatment Short Course
FBC	Full Blood Count
FCDA	Federal Capital Developmental Agency
FCT	Federal Capital Territory
GFATM	The Global Fund for AIDS, Tuberculosis and Malaria
GH	General Hospital

GHAIN	Global HIV/ AIDS Initiative in Nigeria
LFT	Liver Function Test
NACA	National Action Committee on AIDS
NASCAP	National AIDS and STI Control Programme
NGO	Non Governmental Organization
NSF	National Strategic Framework
OIs	Opportunistic Infections
PEPFAR	President Emergency Programme for AIDS (The US President's Emergency Plan for IDS Relief)
MIS	Management Information System
MTP	Medium-term Plan
NIMR	National Institute of Medical Research
NSF	National Strategic Framework
NVP	Nevirapine
PABA	Persons Affected by Aids
PCR	Polymerized Chain Reaction
PCP	Pneumocystis carinii Pneumonia
PHR <i>plus</i>	Partners for Health Reform <i>plus</i> Project
PLHA	People Living with HIV and AIDS
PHC	Primary Health Care
PMTCT	Prevention of Mother to Child Transmission
SACA	State Action Committee on AIDS
SOP	Standard Operating Procedure
STIs	Sexually transmitted Infections
TB	Tuberculosis
SACA	State Action Committee on HIV/ AIDS
STD	Sexually Transmitted Disease
PHC	Primary Health Care
UNAIDS	Joint United Nations Action on HIV/ AIDS
UNFPA	United Nations Fund for Population activities
UNICEF	United Nations Children's Emergency Fund
WHO	World Health Organization

DFID	UK's Department for International Development
(JICA	Japanese International Cooperative Agency
HCT	HIV Counseling and Testing
CIDA	Canadian International Development Agency

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Executive Summary

AIDS, the most dreaded scourge, amid its causative agent; the Human Immunodeficiency Virus (HIV) is one of the greatest challenges to all aspects of our contemporary life. The epidemic is exceptional because of its complexity, enormous demand on sexual behaviours, poverty and power relations between women and men. Furthermore, the most awful is its huge demand on the poor social and health infrastructure of resource constrained economies such as Nigeria. Currently, the provision of HIV treatment, prevention, care and support to all who need them though an ambitious goal, is the most pragmatic approach to slowing AIDS spread. This implies that access to antiretroviral drugs (ARVs) requires that information and services reaching all people who need these drugs must be comprehensive, affordable and sustainable.

We studied the impact, challenges and long-term implication of the antiretroviral treatment response to AIDS in Nigeria. Our assessment covers fourteen ART sites and 5 selected HCT centres across the 6 geopolitical zones of Nigeria and the FCT. The study utilized a combination of qualitative and quantitative methods and information from secondary sources to examine the Nigerian ART Program. Specifically, it looked at i) the structures, processes, numbers of treatment centres and persons on treatment, ii) identify gaps in commodity management, iii) quality of services, and v) the long term financial implications of the program.

The report presents a number of key findings which when addressed will significantly facilitate the massive ART roll out being envisioned. These findings include:

- Currently 124,572 PLHA are accessing antiretroviral drugs in various centres across the country. This means that the number of people on ART has multiplied ten folds since 2002 with the support of Government of Nigeria and development partners. But this represents only about one in five of the number who actually need the drugs.
- Presently ART response is still donor driven. Most of the funds for the ART program are coming from development partners. This is a major challenge, especially as the present financing from GON, account for less than 5% of PLHA on ART. State and local governments are hardly making any contributions even though most of the activities take place at these levels.
- Guidelines and SOPs for ART, PMTCT and HCT are supposed to guide healthcare providers to deliver quality care to individuals in need of these services. The survey observed that these very important documents were not

- available to providers in many of the ART sites. In addition, algorithms for HCT varied from one site to the other with no nationally accepted standards.
- Generally, the infrastructure for delivery of ART and related services was weak. Many sites lacked adequate space for counseling and pharmacy. Personnel were inadequate and many staff on the program had not been trained.
 - Differential standards of care existed for GON fully funded sites and sites supported by development partners. At most GON sites, the only free service was the cost of antiretroviral drugs. Patients had to pay for costs of laboratory monitoring, OI drugs and other indirect costs while at sites supported by implementing partners' patients only bear indirect costs.
 - The indirect costs borne by patients which include transportation to/from clinics, accommodation while waiting to attend clinics and user fees are enormous and invariably is higher than the average income of patients. The monthly income of 4 in every 5 (76%) of this working population was about ₦30,000 (\$250) with a burden of average monthly expenses of ₦55,000 (\$433). This was found to be a major obstacle to patient attendance at follow up clinics and adherence to their drug combinations.
 - More than 80% of the patients are receiving Stavudine (d4T) containing combinations. This combination is associated with severe long term complications and WHO recently recommended other options to avoid these complications.
 - In addition, the study observed that GON sites did not stock second line drugs for patients failing the first line drug combinations.
 - Laboratory monitoring tools existed for basic HCT and ART related services. However, an important component like viral load was limited to only 42.9% of the sites, while genotyping for assessment of drug resistance was lacking in all the sites. Screening for hepatitis B and C, tuberculosis and STIs were also inadequate in the HCT and ART centres studied. The turn around time for receiving laboratory results was as long as one month or more for important tests which were required for making decisions on patient's management.
 - The study observed that the MIS was poorly developed at some sites. This has important implications for monitoring and evaluation, quality assurance and quality improvement components of the program and overall coordination of the whole ART program.
 - Our results revealed that about 80% of PLHA started ART 'after adequate counselling' and understand the issues surrounding HIV disease and ART including prevention of the virus to sexual partners.

- Yet half of them (53%) continued to practice unsafe sex. Of this number, only 27(35%) used condom all the time. In the same vein, stigma is still a major community issue with only 27(36%) disclosing their status to their partners.
- The successful implementation of ART roll out throughout the nation requires more than adequate funding. The development of guidelines and SOPs and their dissemination to health care providers, ensuring the mobilization of adequate human resources and their training and a robust commodity management are critical. The National ART Program has made significant strides at achieving universal access but a lot needs to be done. As a way of moving forward to achieving the goals set by the country in the NSF and the national scale up plan, this report recommends the following strategies:
 - ✚ Leadership and commitment at all levels of the national response. For sustainability of the national ART scale up programme a high level of commitment from public and private stakeholders is absolutely necessary. GON, state governments and development partners and private organizations within the country must make commitment to support significantly the scaling-up program financially.
 - ✚ Funding and financial sustainability: NACA and SACAs need to develop a plan for financial sustainability for effective and long term multi-sectoral response. GON and State Governments should provide enough funds to compliment funds granted by Development Partners. A long-term effort to reverse the trend and halt AIDS depends on an increase in public expenditure by GON. State MOH should be empowered to take the lead in the State response to HIV/AIDS including provision of ART.
 - ✚ Coordination: Coordination of the Three Ones by NACA needs to be improved through capacity building and harmonization of the program components of the national response by various Implementing Agencies. An efficient way for NACA to coordinate the national response will be to maintain strategic focus; providing policy, leadership and direction through regular NSF reviews and updates and provision of strategic information and capacity.
 - ✚ Partnership: Partnership and collaboration between GON and all local and international Development partners including the private sector should be strengthened. In addition, collaboration between the private and public sector such as exists now between GHAIN and SHELL should be encouraged.
 - ✚ Guidelines and SOPs: National guidelines for ARV drug use and SOPs should be regularly reviewed, widely distributed and adhered to by care providers. This will facilitate proper use of antiretroviral drugs, improve the quality of care and the reduce risk of developing resistance. ART treatment and PMTCT guidelines, HCT protocols and policies should be

made available and widely disseminated to relevant stakeholders including care providers.

- ✚ Weak Health Systems Programs: Building the capacity of the health system in terms of infrastructure and personnel to deliver comprehensive ART is a key requirement for the massive scale up that is being envisioned. Up-scaling integrated TB-DOTS/HCT/ART services and even RH services (where indicated) for more impact and service uptake will not only improve access to ART services but also the quality of such services. Increased availability, affordability and accessibility of ART/OI/TB drugs for the management of opportunistic infection by making all ART services free at all levels of the national response is a mandatory requirement for the success of the scheme.
- ✚ Capacity Building: The shortage of trained health care providers is severe in Nigeria, not only in HIV/AIDS but across the health sector. HIV/AIDS itself is taking its toll on health care workers in Nigeria. A sustained effort is needed to improve clinical training and to provide incentives for health care workers to overcome this human resources shortfall. Training of more health workers and caregivers from the national, states and community levels in the management of HIV/AIDS and related conditions including TB will remain a major need for success. This should include training in Universal Precautions and Post Exposure Prophylaxis, which is presently not available in many health facilities.
- ✚ Community Care and Involvement: Community care policy and guidelines including Home Based Care, palliative care, HCT, STI should be put in place to increase availability of community based care initiatives for PLHA, PABA and community based organizations. The program should promote community preventive and treatment literacy to educate people on the benefits and limitations of ART and the need for prevention. The general consensus now is that “the most effective strategies for combating the pandemic are community based and multi-sectoral”. It is important to point out that consistent and better collaborative interactions between the health sector and the communities would help in addressing the challenges encountered in scaling up HIV/AIDS Care, Treatment and Support services at community level.
- ✚ Stigma and Discrimination: Mobilize the community to combat Stigma and discrimination through education and information. Prevention and treatment education and literacy should be promoted in local languages to provide community literacy in AIDS prevention and treatment, promote AIDS-related rights and reduce HIV-associated stigma and discrimination. In addition, programs should involve PLHA in all its components and ensure that they provide leadership and are meaningfully engaged. Increased drug literacy amongst PLHA through

- ongoing community and adherence support education, will reduce development of resistance for both TB and ARV drugs.
- ✚ Opportunistic Infections: GON and Development Partners should ensure nationwide access and availability of cost effective drugs for the treatment of the most common OI; all health care providers should be trained in management of OIs. Free opportunistic infection drugs should be made available and administered at all service delivery centres as part of comprehensive ART Programme. Programs should integrate the TB-DOTS/ART/HCT interventions for more impact and effective services.
 - ✚ Anti-retroviral therapy (ART) roll out: Rapid scale-up of ART and decentralization to state owned, FBO, private and community based facilities is the only means to achieve the Presidential directive of N250,000.00 (Two Hundred and Fifty Thousand naira only) and in line with the ongoing universal access to ART. Treatment sites should be established in the local governments/districts and rural areas where most of the people reside and should embrace other comprehensive programs like VCT and PMTCT.
 - ✚ The capacities of laboratories for monitoring of persons on ART needs to be built. NASCP needs to harmonize the HCT testing algorithm and ensure adequate quality control and assurance. Laboratories in tertiary and district facilities providing ART should deliver free CD4 tests. NACP should establish a tiered laboratory system from the PHC to the referral centres and put in place QA/QC. Zonal laboratories should be empowered to carry out viral load tests and at least three laboratories in the country should have the capability for resistance testing.
 - ✚ Monitoring and Evaluation: The results from this survey observed that monitoring and evaluation (M&E) of national activities and progress remain major challenges at secondary and primary levels. NACA needs to ensure that the Nigerian National Response Information Management System (NNRIMS) which is the M & E component of the 'Three One' is implemented at all levels. Establishment of efficient data collection mechanisms and capacity for monitoring and evaluation at all levels of care and support interventions are vital tools to achieve this goal.
 - ✚ Research: In order to obtain the much needed evidence based information required for intervention; research activities must be put in place at all levels of programme. This should include operational and basic research. Institution of a research plans will enhance research designs in the context of programme implementation and in resource mobilization to conduct research. Ensuring an efficient operational research will improve data

collection, monitoring and evaluation, quality assurance and quality improvement.

1. INTRODUCTION

1.1. Epidemiology

Nigeria with a population of 140 million people and about 300 different ethnic groups is the most populous country in Africa and accounts for 20% of the African continent (1 in every 5 African being a Nigerian). The 36 States of Nigeria and Federal Capital Territory are divided into 6 geo-political zones – North West, North East, North Central, South East, South South and South West. HIV prevalence in Nigeria has risen rapidly from the first case of AIDS in 1986 to 1.8% in 1991 4.5% in 1995; 5.8% in 2001, to 5.0% in 2003 and 4.4% in 2005. Although HIV prevalence is much lower in Nigeria compared to many African countries such as South Africa and Zambia but because of the large population of Nigeria the prevalence of 4.4% is a considerable burden. Thus, Nigeria is the third largest country in the world after India and South Africa, in terms of AIDS burden. AIDS is now a leading cause of death in Nigeria. In spite of this, inadequate awareness, limited counselling/testing facilities and the high level of stigma associated with HIV; have resulted in only about 10% of HIV positive individuals being aware of their status, thus limiting the number accessing treatment and care. People living with HIV/AIDS (PLHA) need good quality treatment and care that are not only available, accessible and affordable, but also sustainable. The increasing political momentum arising from the WHO-UNAIDS '3 by 5' framework and its target of treating 3 million people by 2005 has led to increased local and international resources to deliver ART in Nigeria. It is also hoped that Nigeria's benefits from the G8 2007 Berlin US\$70 billion declaration for HIV/AIDS, Tuberculosis and related diseases in Africa will improve the access of the present HIV/AIDS treatment and care. This will go a long way in meeting the Millennium Development Goals (MDGs) by reversing the spread of HIV by 2015.

1.2. Background

1.2.1 The Nigerian response to HIV/AIDS

Antiretroviral drugs have been available in Nigeria since the early 1990s. Pharmaceutical companies like Roche Nigeria Limited (now Swipha Nigeria Limited), and GlaxoWellcome have conducted limited compassionate clinical trials of some of their drugs (Idoko *et al.* 2002). However, the cost of ARV drugs then was too high for the average citizen. Anecdotal evidence indicates that those who could afford to pay for drugs received either double or triple therapy. At the

moment, most public facilities provide free or subsidized services, but the private sector is providing treatment to those who can afford to pay

The Nigerian public sector response to the AIDS pandemic was established in 1987 in the health sector with the establishment of the National AIDS Advisory Committee. This was followed by the establishment of NASCP a year later with the first Medium term Plan (MTP 1), followed by the second MTP which ended in 1997. In 2000, the country formally endorsed the multi-sectoral approach to HIV/AIDS with a three- tiered multi-sectoral structure under the presidential committee on AIDS (PCA). The PCA and NACA developed a proactive strategic plan to the epidemic called the "HIV/AIDS Emergency Action Plan" (HEAP) in 2001. The life span of this Programme ended last year and the next 5 year period is guided by the newly developed National Strategic Framework.

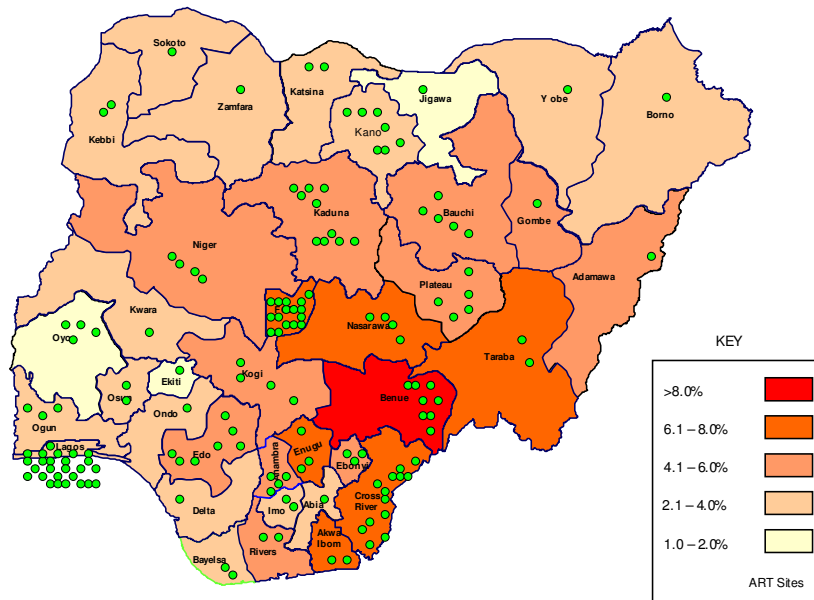
AIDS deaths by mid 2001, were put at 310, 000 and new AIDS cases estimated at 172,775. Following this worrisome situation the Nigerian government in 2002 started an ambitious antiretroviral (ARV) treatment programme to get 10,000 adults and 5,000 children living with HIV/AIDS (PLHA) on ARVs within one year. An initial \$3.5 million worth of generic ARVs were procured from India and delivered at a subsidized monthly cost of \$7 per person. Under this Programme, three generic drugs - Lamivudine (also known as 3TC), Nevirapine (NVP) and Stavudine (D4T) - were used. At the initial quota of 250 patients at each of the 25 designated treatment centers there was an official payment of one thousand ₦1,000 (now free) for patients to receive treatment on a monthly basis in addition to their bearing the costs of routine laboratory tests. As the benefits of the treatment trickled down, more HIV positive persons sought to be recruited into the treatment programme, resulting in over recruitment, long waiting list and stock out syndrome. This situation called for intensified efforts to expand the treatment programme. In 2003 the programme suffered a major setback when it was hit by a shortage of drugs. This meant that some people didn't receive treatment for up to three months. Eventually, another \$3.8 million worth of drugs were procured and the programme resumed. In order to achieve the national ART goal of reaching infected persons, the GON announced a Presidential initiative of a massive scale up of putting 250,000 PLHAs on ARV by June 2006. Currently, about **124,567 adults and 5,279 children** out of the over 550,000 who actually require ART receive antiretroviral drugs as at March, 2007. Poor health systems, coupled with lack of adequate funding have been major obstacles to meeting the presidential targets.

1.2.2 Efforts of Donors and Partners

Bilateral and multilateral partners have also committed significant resources to the scale of ART and comprehensive HIV care in Nigeria. They include the USG PEPFAR programme which plans to provide treatment for 350,000 patients in five years and in addition prevent 1.7 million infections in Nigeria. This

programme is being implemented in Nigeria by five main partners; AIDS Prevention Initiative (APIN), GHAIN, Action Project (University of Maryland) ICAP (Columbia University) and CRS (AIDS Relief). The Global Fund for AIDS, Tuberculosis (GFTAM) is also supporting the delivery of ART in the initial GON ARV 199 sites (Figure 1) with plans for expansion to more sites for ARV and PMTCT services. In addition, the Bill and Melinda Gates Foundation fund the APIN programme to support PMTCT services and provide the much needed operational research required for evidence-based intervention. DFID is already supporting the health sector situational analysis and reform and has expressed interest in the support of HIV diagnosis. Other important partners involved in PMTCT, HCT and Reproductive Health include USAID, UNICEF, UNFPA, WHO and various foundations including the Macarthur and Packard Foundations.

Figure 1: ART Centres Across Nigeria / Burden of HIV in the States



Source: NASCAP November, 2006

1.3 Rationale

The rationale for this assessment is to identify major impact and the need to achieve the scale up of ARV treatment services in Nigeria as proposed in the massive roll out plan of the Federal Government of Nigeria. This is to ensure national coverage, reduce the overall cost of ART to PLHAs and ultimately improve adherence and quality of life of beneficiaries. This demands for the decentralization and equitable geographical spread of the various ART services at all levels of care. The assessment focuses on comprehensive ART (including HCT, PMTCT, OIs and adherence) and community participation and identifying the impact on PLHA through quality of life assessment as well as the necessary capacity to ensure the safe and effective use of the drugs by patients. The findings and recommendations from this assessment will be used to further advise the ART roll out plan.

1.4 Objectives

The overall objective of this study is to provide relevant data and information that can be used in strengthening the national ART response.

Specific objectives are:

- ✚ To examine the Nigerian ARV program structures and processes
- ✚ To assess the number of persons on ART and the range of services rendered to them.
- ✚ To identify gaps specific to the planning, procurement, distribution and usage of ARVs across the country.
- ✚ To assess the effectiveness, efficiency and quality of service rendered to patients.
- ✚ To study the long term financing implications of the Nigerian ARV scale up and identify strategies for sustainability of the National ART programme

2. Methodology

2.1 Study Design

In order to achieve the above objectives, combinations of qualitative and quantitative tools were utilized in order to:

1. examine the Nigerian ARV program structures, processes and establish the number of persons on ART
2. identify gaps specific to the planning, procurement, distribution and usage of ARVs across the country.

To achieve both objectives primary and secondary data were sourced from:

- a) *policy documents, guidelines, protocols, SOPs, published and unpublished research, programme reports from NACA/FMOH (NASCP), donors and implementing partners.*
 - b) *in-depth interview (IDI) with key officers involved in policy formulation, programme financing, management, drug supplies/distribution, logistics, monitoring and evaluation.*
3. assess the quality of services rendered to patients at treatment facilities and the challenges to ART programme delivery.
 4. assess the effectiveness, efficiency of services rendered to patients.
These were achieved through a cross-sectional assessment of selected facilities and their communities in the six geopolitical zones of Nigeria, using a combination of structured questionnaires, checklist and qualitative assessment for:
 - a) *in-depth interviews (IDI) with key officers involved in programme management were conducted to assess the range of services and challenges.*
 - b) *on-site assessment of state of facilities and services (clinical, laboratory, pharmacy, records, counselling); human resource capacity, community involvement, programme management and logistics.*
 - c) *The quality of life of PLHAs and satisfaction with care at the facilities*
 - d) *Patients/community perceptions and level of participation (among PLHAs Support groups and community leaders).*
 5. determine the long term financing implications of the Nigerian ARV scale up and identify strategies for sustainability of the National ART programme.
These were deduced from FGDs with PLHAs and IDI with, stakeholders.

2.2. The Assessment Team

A five member multidisciplinary group of consultants conducted this assessment and analysis over a five month period from February to June 2007 in all the six geopolitical zones of the country including the Federal Capital Territory. The team included one Principal Investigator who provided over-all leadership, coordination and facilitation to ensure that all objectives for the assessment were achieved. The consultants consist of clinicians, research scientists and logistician. Each team was supported by one HERFON state coordinator and two research assistants.

2.3 Sampling Frame

A convenience sampling approach was used to select the states from the six geographical zones. Study sites were selected from the states to be assessed based on the presence of ART and HCT programmes at tertiary, secondary and primary healthcare levels. The sites included those supported by GON or funded by development partners. With this method, one state was selected from each zone and in every selected state a tertiary and secondary health facility providing ART services were assessed. In addition, a primary facility that provided HCT services and also served as a feeder to a surveyed secondary ART facility (Appendix 1) assessed. The sites selected were a mix of public and private sector facilities. The states visited are Anambra, Borno, Cross Rivers, and Kaduna Also included were Lagos, Plateau and the Federal Capital Territory, Abuja; thus representing the six geopolitical zones and the FCT.

2.4. Data Collation and Analysis

Data from the various sites were collated by the data manager at the coordinating centre. All quantitative data were entered and analyzed on Epi Info version 3.3.2 (CDC Atlanta, USA) and SPSS 12.0 for Windows. Reports from all qualitative data and other sources of data were summarized and appropriate deductions and recommendations made.

3. Major Findings

This section presents the outcome of the assessment after field visits were made to the six geographical zones of Nigeria and the Federal Capital Territory.

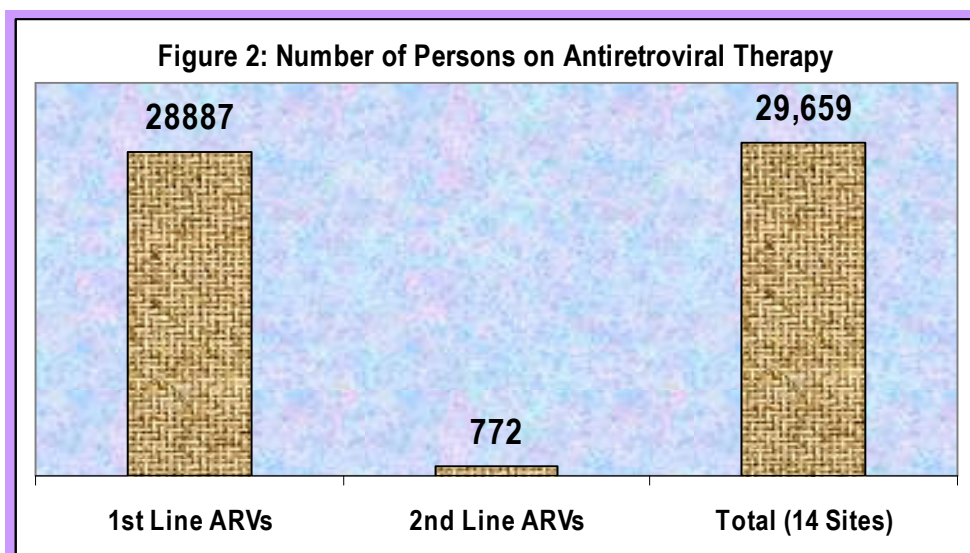
A total of 14 antiretroviral treatment (ART) sites and 5 HIV Counselling and Testing centres (HCT) were assessed using a comprehensive checklist. They were a combination of public and private facilities (privately owned NGO and or faith-based organization) at primary, secondary, and tertiary levels of care.. A hundred and forty-four (144) questionnaires were administered to PLHA at these facilities to assess perceived benefits measured in terms of quality of life of individuals on antiretroviral drugs and satisfaction with service. Twelve focus

group discussions (FGDs) were conducted; six each for PLHA and community leaders including other stakeholders. In-depth interview were also conducted with representatives of government institutions (NACA, NASCP, SACA and LACA), donor agencies/implementing partners (USAID, FHI), and NEPWAN.

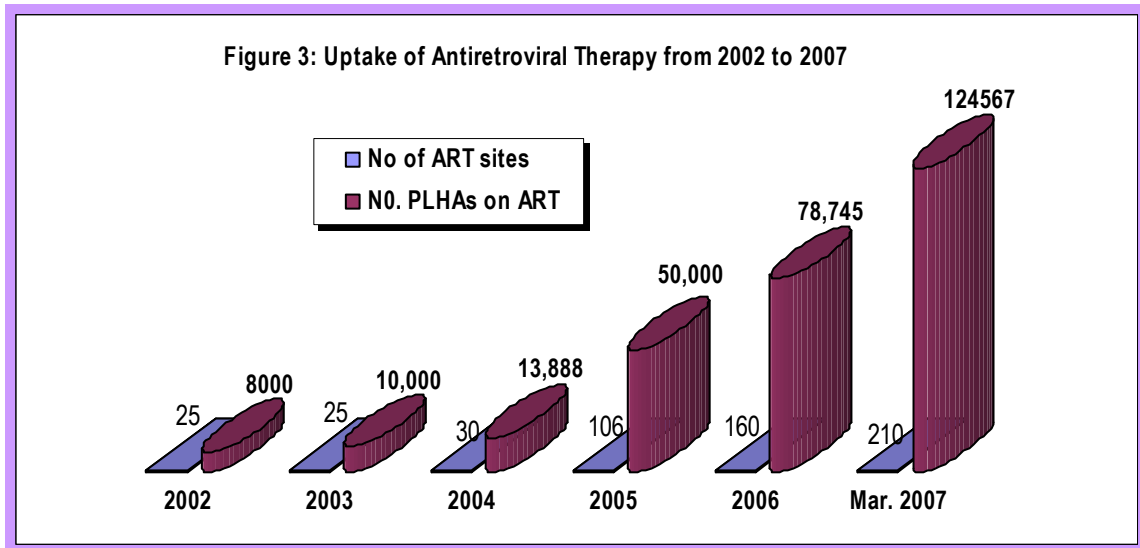
3.1. Number of persons on antiretroviral therapy and range of services available

3.1.1. Number of persons on Antiretroviral Drugs

Complete data obtained from 11 out of the 14 sites surveyed showed that a total of 29,659 adults were on ART; 28, 887 (97.4%) on 1st line regimen and 772 (2.6%) on 2nd line ARVs (Figure 2).



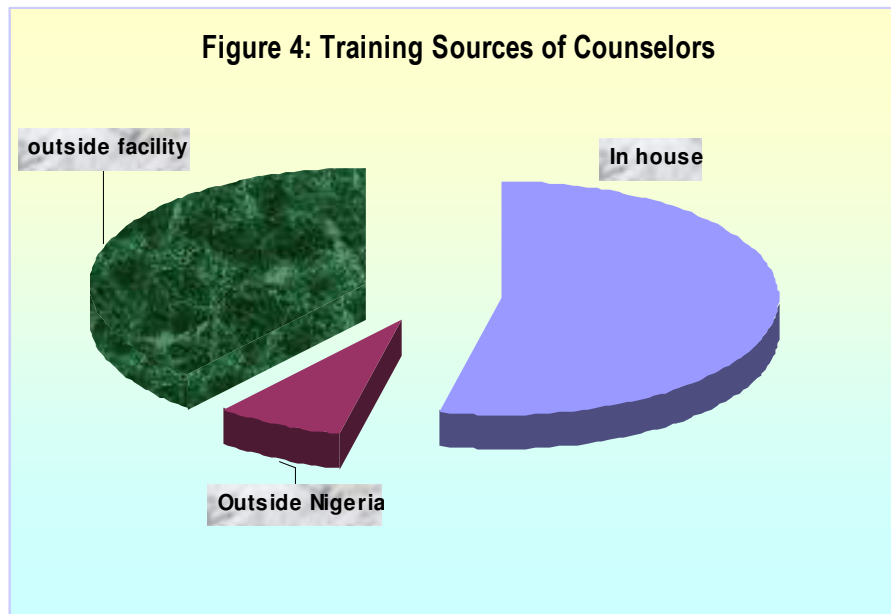
Data from NASCP suggest a steady rise in the number of registered sites and the number of people on treatment from 2002 to 2007 with significant increases from 2005. As at March 2007, a total of 210 ART sites were providing ART and 124, 567 PLHAs have been started on ART (Figure 3).



Source: NASCP April 2007

3.1.2. HIV Counseling and Testing (HCT)

HIV counselling and testing services exist at all the facilities visited. Counselling is administered in group sessions and individually. Group counselling is given mainly to expectant mothers during antenatal visits. Counselling is mostly provided by part-time counsellors (nurses and social workers) as a secondary responsibility (46.1%), followed by full time counsellors (38.5%) and PLHA support groups providing counselling on volunteer basis (15.4%). Each counselling session takes 10 – 90 minutes. Training of counsellors is mainly provided by GON and implementing partners viz: FMOH/NACA, APIN, FHI/GHAIN, IHVN, CRS, AIDS ALLIANCE, UNICEF, WHO and UNFPA. Duration of training ranged from 2 days to three months. Most of these trainings were conducted in house (53.7%); while only about 7% were trained outside the country (Figure 4).



Individuals sought counselling and testing more for symptoms and signs suggestive of HIV disease, premarital status determination and referrals for confirmation of clinical diagnosis of HIV than for immigration and pre-surgical screening.

3.1.3. Prevention of Mother to Child Transmission

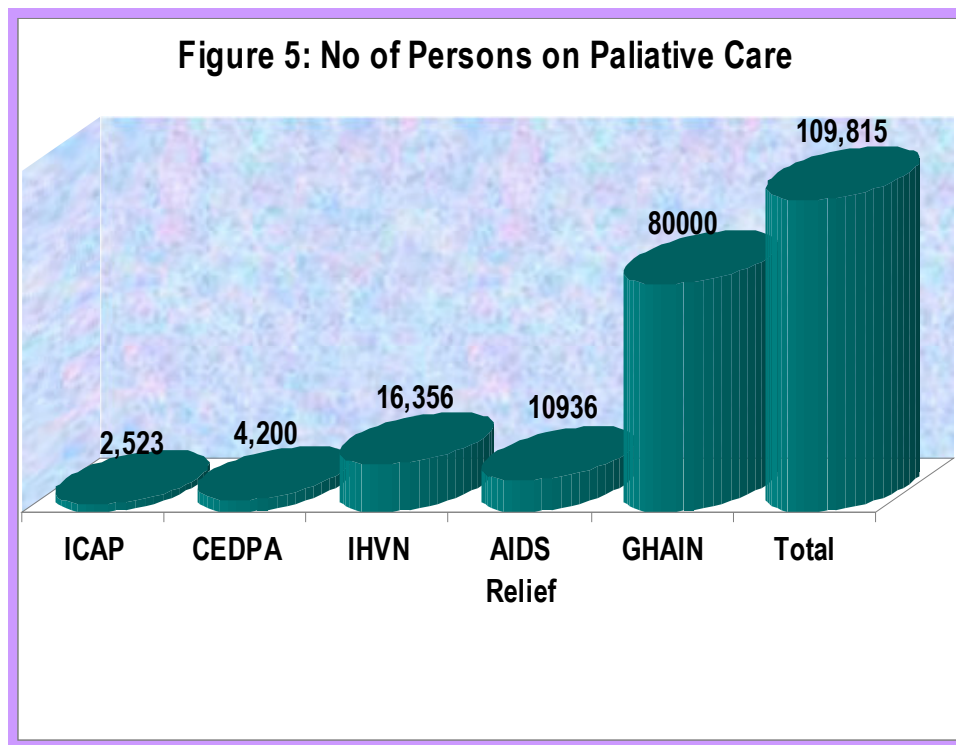
PMTCT services exist at all the ART sites visited. Information from NASCP indicates that PMTCT is now provided in 230 facilities throughout the country. Three quarters of the ART sites visited use either HAART or two drug combination for PMTCT. In addition 83.3% of these sites also use single dose Nevirapine. It is noteworthy that out of the 5 of the HCT centres assessed provided PMTCT using single dose Nevirapine. Apart from hospitals the rest of the facilities assessed provide the PMTCT drugs free to clients; however, other related services were charged for as shown below (Table 1).

Table 1: Cost of Antenatal and Delivery Services

ANC/PMTCT related services	Amount in Naira (₦)
Booking cost for ANC	200 - 350
Routine antenatal investigations	
General hospitals	1000 - 2500
Faith-based organization	550 - 1200
Private hospital	1500
Teaching hospital	250 - 500
Fee on routine clinic visit	
FBO/Teaching/Gen. Hosp.	100- 200
Private	400
Cost of Normal delivery:	
Private	40000 - 50000
Teaching hospital	1000 - 4000
General hospital (GH)	0 - 4500
GH with complications	4500 - 20000
Faith based	2000 - 3500
Postnatal Cost:	
FB/teaching hospital	70
GH	free
Private	400
Cost of Special Investigation:	
FBO	600 - 1000
Private hospitals	1000
Teaching hospital	1000 - 4000
Caesarean Section (CS) delivery	
FBOs	4000 - 6000
Private	40000 -120000
Teaching hospitals	20000 - 30000

3.1.4. Other ART Related Services

Sites providing ART generally had this range of services including: HCT, PMTCT, ART (adult), adherence education, diagnosis and treatment of OIs/STIs, palliative care, TB and some form of prevention for positives. Availability of data management, family planning and reproductive health, insecticide treated bed nets and support Group for PLHA varied in facilities from 52.6% to 86.7%. Food support for adult PLHAs is provided by only 26.7% of the sites, while Breast Milk Substitutes (BMS) for babies was offered by 53.3% of the sites. From figure 5 below, palliative care was mostly provided by implementing and development partners among others.



Source: Adapted with modifications from NASCP 2006

Tuberculosis related services existed in 17 of the 19 facilities assessed. However, most TB services were found in the secondary and tertiary sites including access to X-ray (84.8%) HCT/TB/ART drugs 15(79.55), medication for 1st line TB toxicity (65.6%). TB prophylaxis is not common (37%) and patient weighing which is an objective index for monitoring treatment is performed in (47. & %) of the facilities (Table 2).

Table 2: Overview of Tuberculosis Related Services

ART and TB services	Available in facilities	Score (%)
TB Adherence	17	89.5
Access to X-Ray	16	84.8
TB doses missed	6	31.8
Hand hygiene	16	84.8
TB HCT/ART serve	15	79.5
TB health history taken	14	74.2
Latent TB Prophylaxis	7	37.1
Medication to 1 st line TB toxicity	12	65.6
Post treatment smear positive	15	79.5
TB privacy/confidentiality	15	79.5
TB patient weighed	9	47.7
TB referrals	14	74.2
TB side effect management	14	74.2
TB smear available	15	79.5
TB SOPs	13	68.9
TB staff courteous	15	79.5
TB treatment medication	15	79.5
Treatment of active TB	16	84.8

3.2 The Effectiveness and Quality of Services

3.2.1 Appraisal of Clinical Services

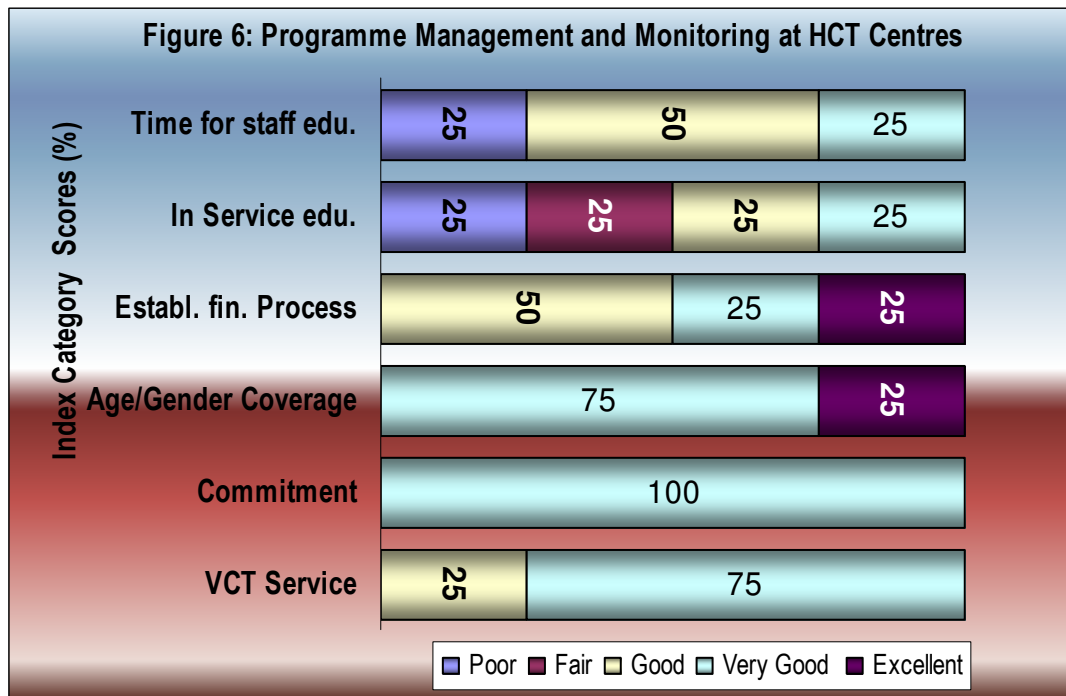
Table 3 shows a breakdown of first and second line antiretroviral drugs in use in the Nigerian ART programme. However, there are challenges at the moment at some sites regarding accessibility to 2nd line ARVs. In addition records showed that about 95% of patients receiving antiretroviral drugs from GON are on D4T based regimen; which is associated with high level of dystrophy with long term use of 3 years or more.

Table 3: Antiretroviral Drugs and Regimens in use in the Nigerian ART Programme

Adult First Line Regimen Breakdown	
AZT/3TC+NVP	Zidovudine/Lamivudine/Nevirapine
AZT/3TC+EFV	Zidovudine /Lamivudine /Efavirenz
d4T(30)+3TC+NVP	Stavudine/Lamivudine /Nevirapine
d4T(40)+3TC+NVP	
d4T(30)+3TC+EFV	Stavudine/Lamivudine /Efavirenz
d4T(40)+3TC+EFV	
Lamivudine +efavirenz	Lamivudine +efavirenz
TDF + FTC + NVP	Truvada/Nevirapine
TDF + FTC + EFV	Truvada/ Efavirenz
List of ARVs Used as Second line:	
Combivir/Viracept	Combivir/Viracept
LOP/TNF/AZT	Lopiavir/Tenofovir/Zidovudine
d4T(30)+3TC+NVP	Stavudine/Nevirapine/Lamivudine
AZT/3TC/Efv	Zidovudine/Lamivudine / Efavirenz
Efv/Crix	Efavirenz/Crixivan
Kaletra/Truvada	

Many sites could not show copies of protocol and guidelines (33.3%). Only 68.9% of the sites have PEP protocol available. There was still a lot to be desired in the knowledge and practices of universal precautions, particularly among physicians and nurses. Facility monitoring and supervision were provided in 12(80%), while patient satisfaction survey was conducted in only 33.3% of the facilities.

The level of commitment to the ART programme, observed amongst staff at the facilities was high (assessed to be very good in 100%). In addition, there were well established financial systems and processes and provision for staff development (Figure 6).



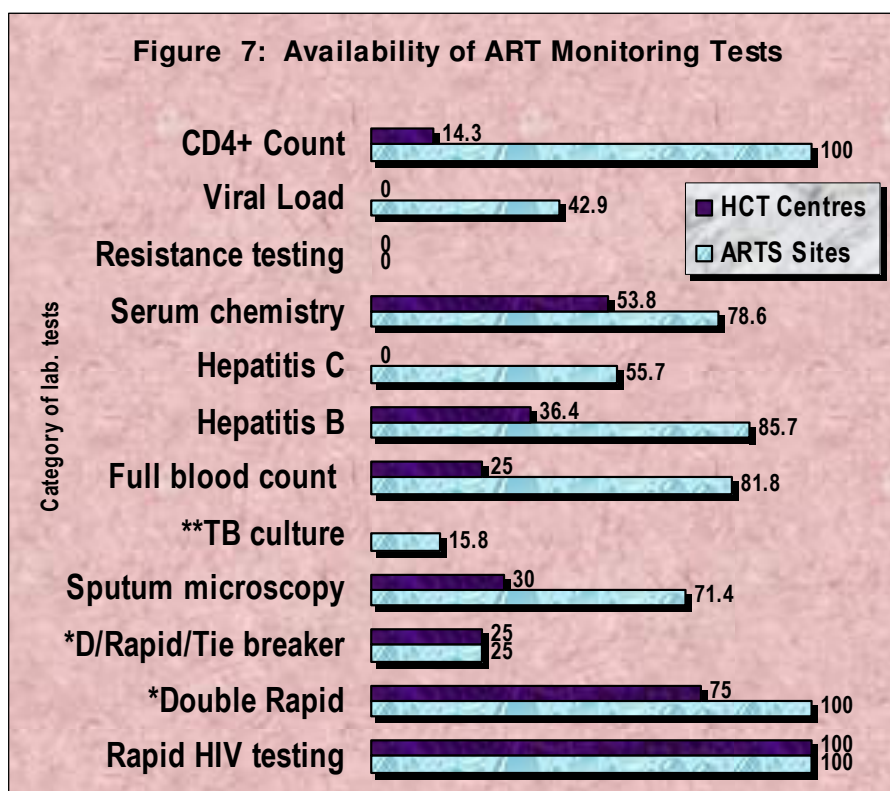
An informal referral system existed in all facilities but there are no designated trained staff, standardized referral forms and referral feedback mechanism. Internal linkages within programmes however were available at all the sites. It was noted that PEPFAR and FHI/GHAIN sites had a defined network models.

3.2.2 Laboratory Services

Facilities for ELISA and Western blot systems exist in 8(42.1%) of the facilities visited, while viral load and PCR exist only in 6(42.9%) of the ART centres (Figure 7). Many sites (64.3%) claimed that they screen for substance abuse in

their facilities. At the moment resistance testing is carried out under collaboration, using laboratories outside Nigeria by APIN sites only.

In addition, SOPs including that for PEP were available in 71.4% of the laboratories, while HIV testing guidelines and record of inspection were sighted in about 85% of the facilities.



The test reagents in use for diagnosis were mainly Capillus, Determine, ChemBio, Start Pack and Genie II. They were largely supplied by different HIV treatment programmes including: PEPFAR, FMOH, FHI/GHAIN, APIN Plus, ICAP, CRS and IHVN. However, during stock out, sites engaged the services of vendors (mainly manufacturers' representatives). The algorithm used by the sites varied. Capillus, Determine and Genie II are used for second test or tie breaker (77.7%). The turn around time for HIV rapid screening is 45 minutes to one day.

While 11 (78.6%) sites provided hepatitis B testing as a routine, only (55.7%) provided hepatitis C screening. As long as 2 - 12 weeks to obtain viral load results (Table 4). Of the sites we visited, 64.7% dispose their wastes properly by burning in the incinerator.

Table 4: Availability and Turn-around Time for Results of Laboratory Tests

	Available in Facilities	ART Sites	HCT Centres	
		TAT (hrs./wks)	Avail. (%)	TAT (hrs.)
Rapid HIV test	19	0.45	100	0.45
Western Blot	12	6	NA	NA
*Double Rapid	18	1	75	24
*Double Rapid+ Tie breaker	17	24	25	24
Full blood count	16	24	25	72
Hepatitis B	16	24	44.4	24
Hepatitis C	10	48	0	24
Pregnancy Test	15	1		-
Assessed for ART Sites only (n=14)				
Sputum microscopy	11	72	30	24
Serum chemistry	11	72	53.8	84
CD4+ Count	13	24-48	NA	NA
TB culture	4	2 wks	NA	NA
Viral load	6	2 - 12 wks	NA	NA
Diagnostic PCR	5	2 - 4 wks	NA	NA
Resistance Testing	0	NA	NA	NA

Legend: * Used as confirmatory tests;
TAT: Turn-around Time

3.2.3 Pharmacy

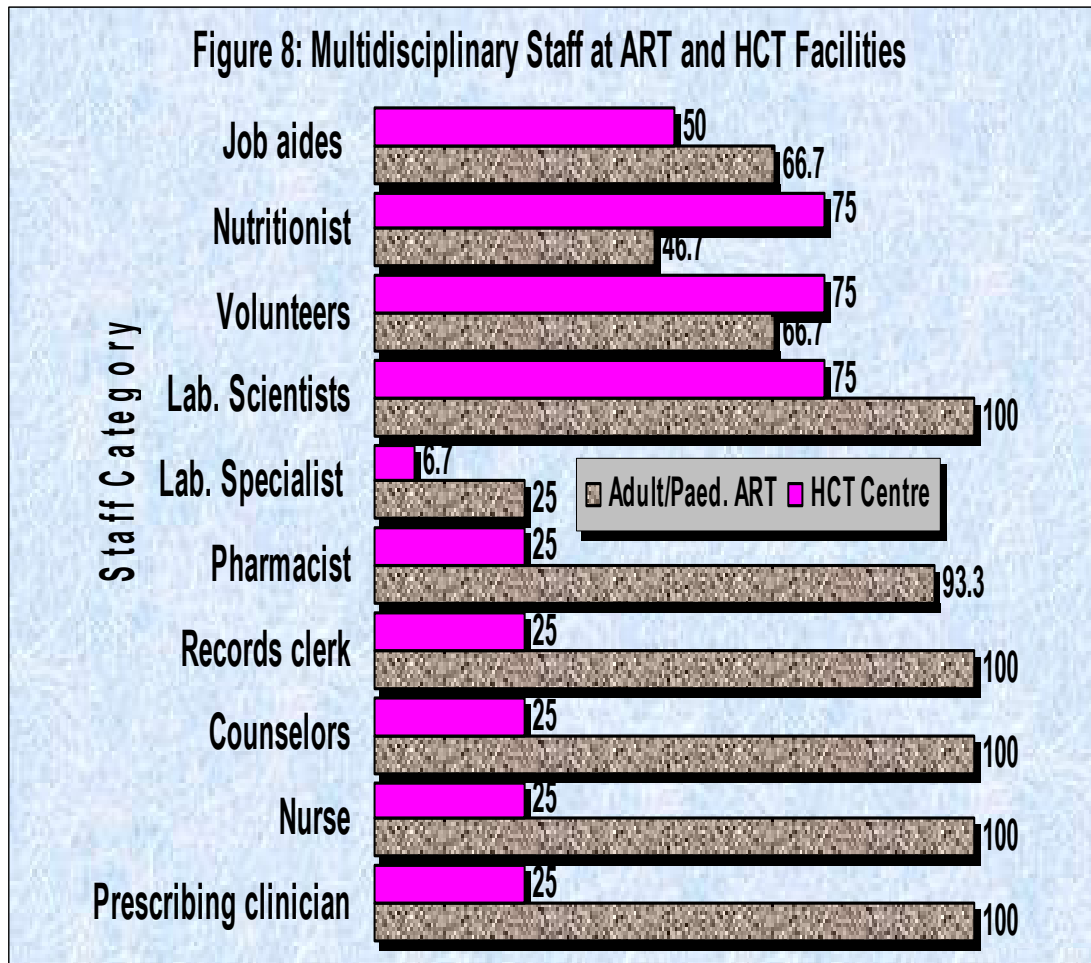
Almost three quarters (71.45%) had three months stock of ARVs in stock at the time of assessment. One site (7.7%) had experienced stock out and 53.8% had expired drugs that expired in the previous 6 months. Only 64.3% had fridge/freezer for storage and 47.3 % were able to maintain a temperature control chart (Table 5). About 70% of the sites had SOPs and provide drug adherence counselling by pharmacy staff; although counselling room was available to only 62.5% of the pharmacies (Appendix 3).

Table 5: Overview Pharmacy Services

Indicators	Score (%)
ARVs (adult/Paediatric)	92.9
Three months stock in the store	71.4
ARVs expired in the last 6 months	53.8
ARV stock out in the last 6 months	7.7
Pharmacy orderly	60.0
Clean Pharmacy	33.3
Pharmacy counselling room available	62.5
Drug withdrawal management	80.1
Space for Pharmacy dispensing area	87.5
Pharmacy stores	86.7
Security maintained	92.9
OI drugs available	87.5
Palliative drugs available	81.5
Antibiotics, Antiseptics, Antifungal --3 months stock	85.7
Drugs procured from recognized and trusted suppliers	93.8
HIV, ART-related publications	75.0
Functional AC/fans	100
Temperature Control report maintained	47.3
Fridge/Freezer	64.3
Equipment maintained regularly	92.9
Comply with government regulations	92.9
Pharmacy forms available	100.0
Drug adherence counselling	71.4
SOPs, Wall charts	71.4
Staff adhere to SOPs	71.4

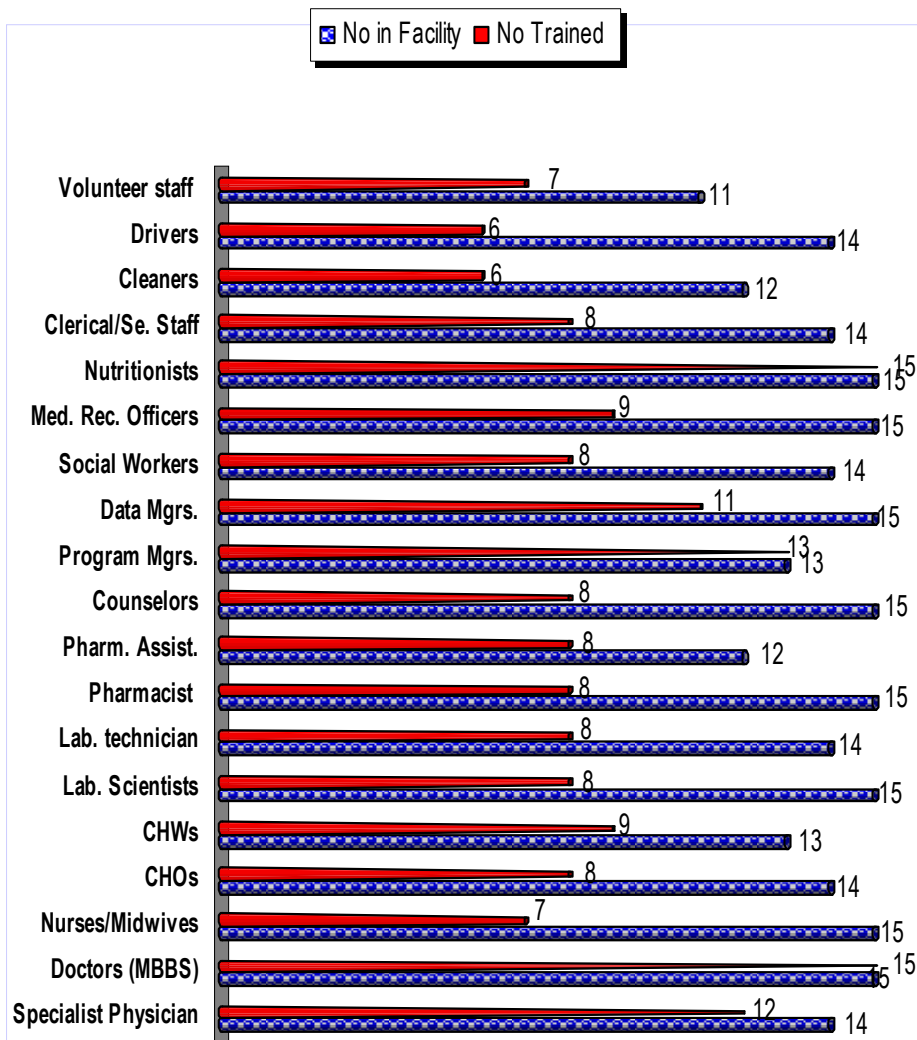
3.2.4 Human Resources

Most of the sites visited had multidisciplinary team comprising of Physicians, pharmacist, nurses, counsellors and laboratory scientists and record Clerk. However, only 25% had lab specialists while 46.7% percent had nutritionists. Generally, most HCT centres had full complement of multidisciplinary team (Figure 8, Appendix 2).



Most facilities complained of the inadequacy of staff for the ART programme. In addition, the time and clinic days allotted were not adequate for the staff to attend to the number of patients. Forty seven percent of the ART sites complained of the high patient load. Patients also complained of long waiting time confirming the high patient load. This is worsened by inadequacy of sitting space, counselling and consulting rooms for the volume of patients. Added to these are the glaring training-needs of many ART staff (Figure 9).

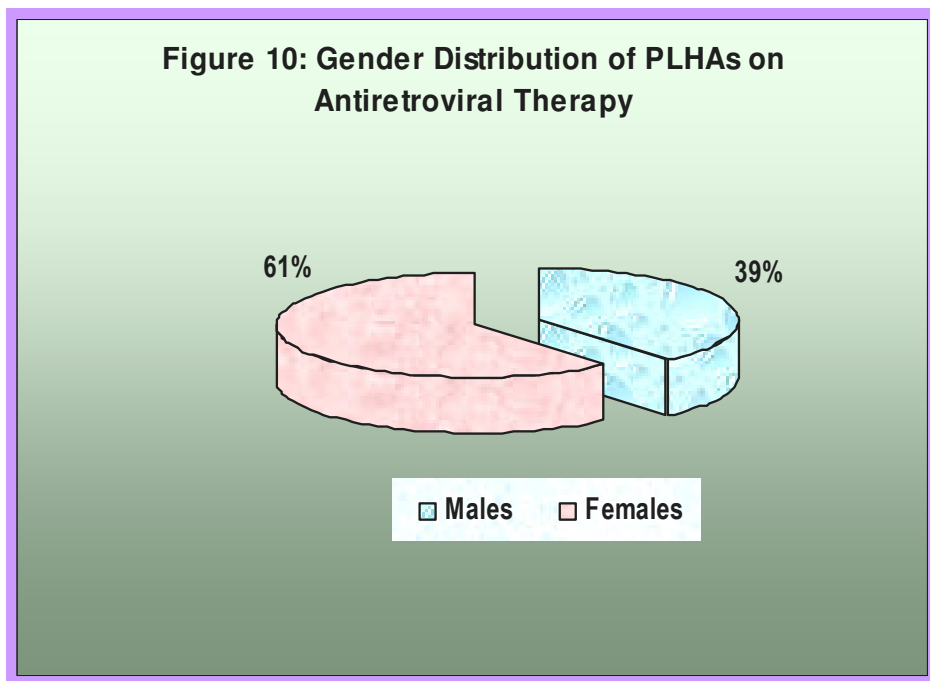
Figure 9: Staff capacity and Training in ART

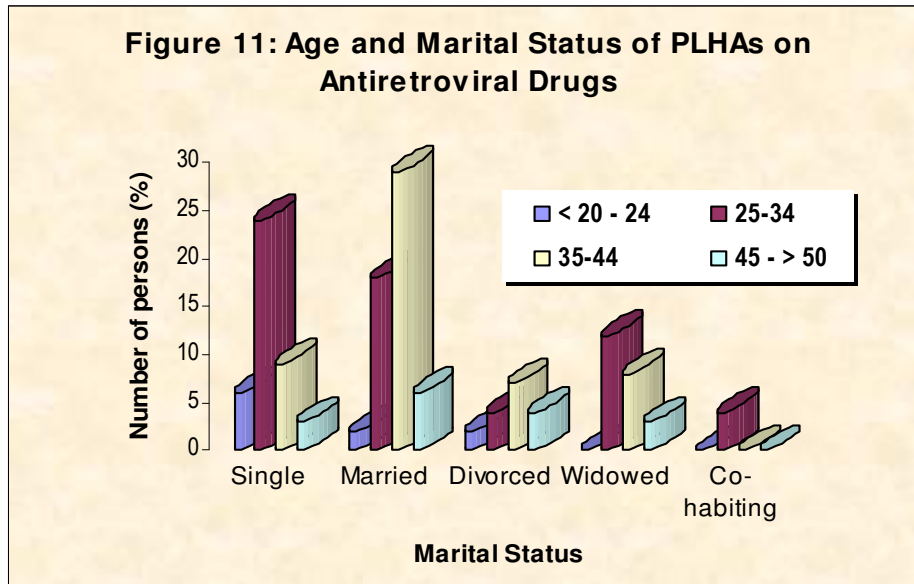


Complete and appropriate forms for patient management and monitoring records were available and used in 11(73.3%) of the facilities. Of this number, PMM forms were available in only 4(35.7%) and only 7(52.6%) have functional computerized data capture information systems. Twelve (85%) of the facilities assessed, have dedicated staff for monitoring.

3.2.5 Assessment of Impact of Antiretroviral Therapy on Quality of life of PLHAs

Quality of life assessment of PLHAs on ARVs from the 6 geopolitical zones and the FCT revealed that, of the 144 PLHAs, 89(61%) were females (Figure 10), mostly young (20 - 34 year olds). Seventy two percent (51.1%) and about thirty (29.8%) were single, while 39%39% were married (Figure 11, and Table 6). Most of them had formal (92%). Majority (56.3%) were public servants or traders earning less than N30,000 (\$250) per month, while unemployed individuals accounted for 9.8% (figure 12).





About half of the PLHAs have problems having enough money to eat, a place to live in, or for transportation to the clinic. They spend a mean of ₦13,257.00 (\$100), and about ₦5,000.00 (\$40) each on drugs other than ARVs, accommodation and transport (Figure 11, Table 6). However, it is encouraging to note that most spend minimally on tests since they are mostly provided free at the ART sites studied. Though, user fees (hospital registration, booking, admission fees etc.) remain a huge burden even in these centres.

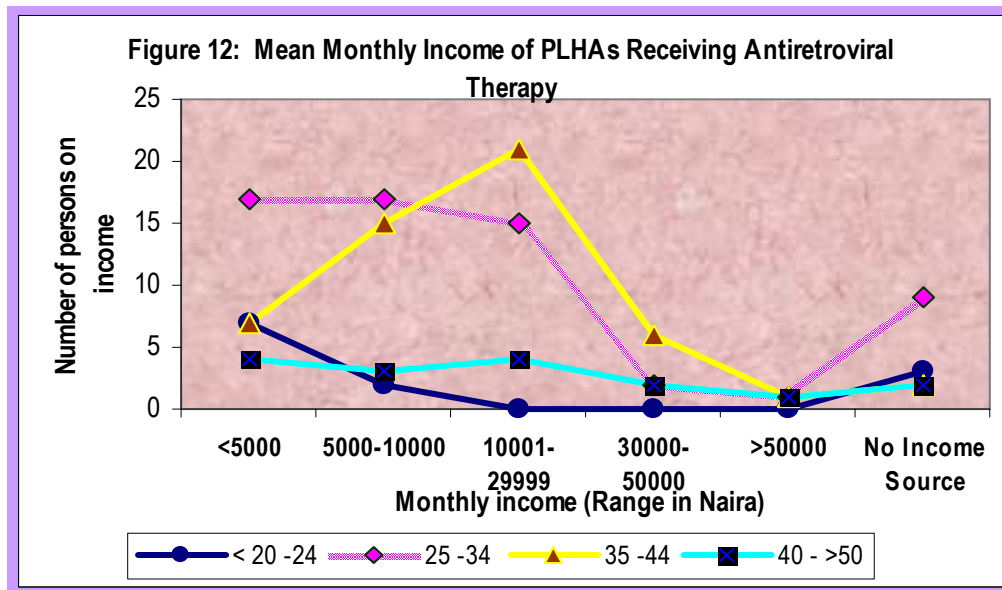
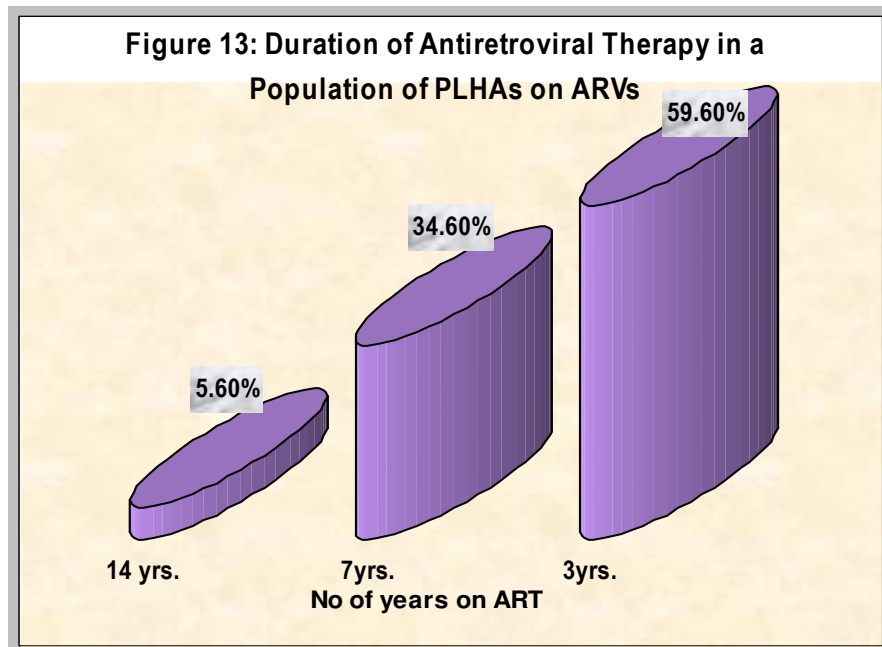


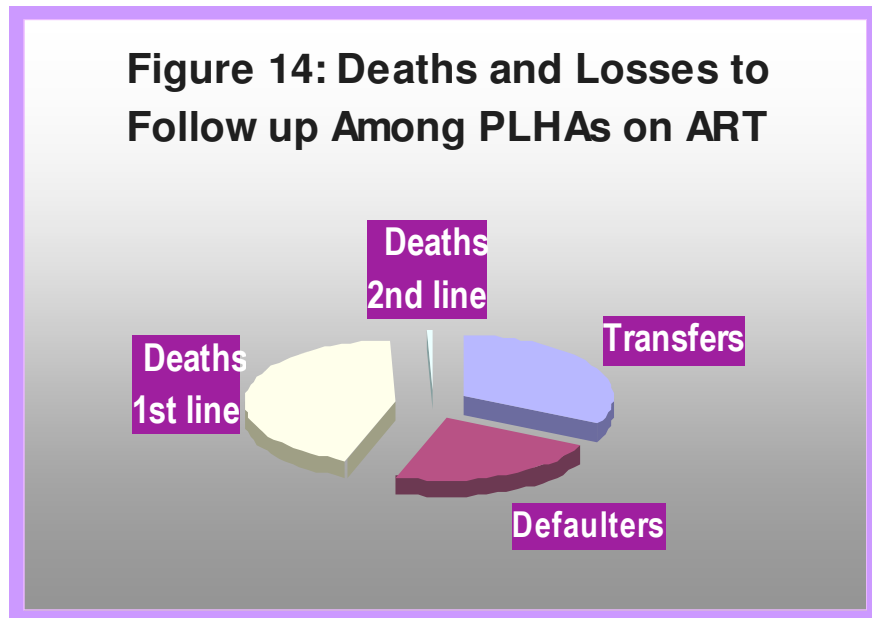
Table 6: Indirect Costs of PLHAs on Antiretroviral Therapy.

Spending	Amount in Naira/US\$			Analysis
	Mean	Minimum	Maximum	F. Ration Sig.
Food	13,256.73	1,540.00	40,000.00	0.03
Laboratory	4153	2,048.00	16,000.00	0.738
Transportation	4,994.33	1,000.00	24,000.00	0.822
Drugs (not ARV)	5,486.22	100.00	24,000.00	0.932
Accommodation	5,322.21	100.00	40,000.00	0.932
Other spending	21,863.33	1,680.00	118,000.00	0.03
Summary	55,075.83	6,468.00	262,000.00	
	\$432.65	\$50.81	\$2,058.13	

Eighty-seven percent (87%) of this population of PLHA have been living with the virus in the last 6 years, a significant number (59.6%) of whom started accessing ARVs in the last three years (Figure 13).



Over all, 45.2% deaths and 22.7% defaults to ART adherence were recorded from all ART facilities visited (Figure 14).



About 80% of PLHA started ART ‘after adequate counselling’ to understand ARVs and HIV disease. Yet, 76(53%) do not practice safe sex and only 27(35%) of them use condoms consistently. In addition, 27(36%) still have problems disclosing their status to their partners. Seventy-five percent (75%) were reported with good adherence with their drugs, although 35% reported recent problems(s). Thirty-two (22%) experienced side effects and 23% have had their ARV combinations switched. 90% agreed that they felt much better “now than one year ago”, and were experiencing no limitations as a result of physical or emotional problems. Thirteen percent (13%) either did not know what CD4 count meant or thought they had never done one, while 54% could not tell what their last CD4 count was.

3.2.6 Support Groups and Community Participation

The formation of the earliest support groups of PLHAs in Nigeria started in 1997. By 1998, the idea of a National Network of People Living with HIV/AIDS that will bring together all existing support groups became a reality with the establishment of NEPWAN at a meeting held in Kaduna. NEPWAN was established to:

- ✎ Mobilize PLHAs in to support groups and empower them to contribute to the national response with the aim of reducing and eventually eliminating further spread of the virus.

- ✎ Mitigate the impact of HIV and AIDS on the life of PLHAs, PABAs, orphans and vulnerable children.

So far, NEPWAN has registered about 50,000 PLHAs and 120 support groups from all six geopolitical zones of the country and currently sources funds from Global fund, Christian AIDS UK, Bill and Melinda Gates Foundation.

3.3 The Nigerian ARV Program Structures and Processes

3.3.1 The National Response

Nigeria's public sector response to the AIDS pandemic was established in 1987 in the health sector with the establishment of the National AIDS Advisory Committee. This was followed by the establishment of NASCP a year later with the first medium-term plan (MTP 1), followed by the second medium-term plan (MTP 2); which ended in 1997. In February 2000, the country formally endorsed the multi-sectoral approach to HIV/AIDS with a three-tiered multi-sectoral structure under Presidential Council on AIDS (PCA) to oversee a plan of action at national, (NACA); State, (SACA) and local levels (LACA).

The National Action Committee on AIDS (NACA) was established to coordinate the various activities of HIV/AIDS in the country. NACA's mandate include among others, to:-

- ✎ Coordinate and sustain advocacy by all sectors and at all levels for HIV/AIDS/STDs Expanded Responses in Nigeria ;
- ✎ Develop the framework for collaboration and support from all stakeholders for a multi-sectoral and multi-disciplinary response to HIV/AIDS in Nigeria;
- ✎ Develop and present to the Presidential Council on AIDS, PCA, all plans on HIV/AIDS in Nigeria for policy decisions;
- ✎ Develop and articulate a strategic plan for an Expanded National Response to HIV/AIDS in Nigeria;
- ✎ Coordinate, monitor and evaluate the implementation of the Strategic National Plan for the control of HIV/AIDS/STDs in Nigeria and all other approved policies;
- ✎ Coordinate and facilitate the mobilization of resources for an effective and sustainable response to HIV/AIDS/STDs in Nigeria.

The National response to the HIV/AIDS epidemic at that time was based on a national strategic work plan known as the HIV/AIDS Emergency Action Plan (HEAP), a four-year plan estimated to cost US \$190 million for programme execution. In order to actualize the objectives of HEAP, the government of Nigeria in 2001 took a World Bank facility of US \$90.3 million credit to support a 5-year 'HIV/AIDS Programme Development Project'. Serviced by the National Project Team (NPT), the HIV/AIDS FUND provided support to NGOs and organizations/groups engaged in HIV/AIDS Programmes and activities around the country. A total of 18 states including FCT, Akwa Ibom, Benue, Ebonyi, Kaduna, Lagos, Taraba, Adamawa, Cross River, Imo, Kano, Plateau, Nassarawa, Anambra, Borno, Edo, Oyo, and Niger were involved in this project.

The project development objective is to support a national, comprehensive and multi-sectoral response to HIV and AIDS within the Bank's Multi-Country HIV/AIDS Programme (MAP) for the Africa Region. The project has three components:

- 1) Capacity Development: support for federal and state-level coordination mechanisms;
- 2) Support for expanding the public sector response: - support those activities in the HEAP and later the National Strategic Framework (NSF), to be carried out by the line ministries and departments; and
- 3) Supporting civil society organizations through an HIV/AIDS Action Fund (HAF).

In 2004 NACA developed the 5- year National Strategic Framework on AIDS (NSF), with the participation of many stakeholders and development partners, to guide a comprehensive HIV/AIDS response. This is coordinated by NACA and monitored through one national M&E framework (2003). A National Response Information Management System (NNRIMS) was also drafted and launched in 2004. With the foregoing, the 'Three Ones', considered the basis for a strong national response were put in place in Nigeria. The components of the 'Three Ones' include:

- 🚩 One multisectoral coordinating platform; One multisectoral comprehensive national strategy framework document covering eight thematic areas; and One framework to monitor and evaluate the national response.

Currently, NASCP is coordinating the health sector response to HIV in Nigeria. It has developed guidelines, training manuals, ART MIS, M&E framework for the health sector. It has also commenced early infant diagnosis/treatment, inaugurated HIV/AIDS health sector partnership and established logistics unit

to address forecasting, procurement and distribution of ART commodities. In addition, it has developed capacity building programs, including management training for focal persons, zonal workshops on national situation analysis of the health sector response, basic training in care and support, counseling skills, PMTCT, TB/HIV, laboratory, LMIS and training/support for M&E (Table 7).

Table 7: Human Resource Training in the Nigerian ART Programme

	2003	2005	2006/2007
PMTCT		250 health workers	400 health workers
HCT	110 counselor	250 counselors	569 counselors
ART		428 health workers	849 health workers
Monitoring and Evaluation, M&E		132 health workers on PMM/PME	200 health workers on PMTCT MIS
		56 health workers on PMTCT MIS	84 health workers on ART MIS
TB/HIV			144 health workers
Laboratory		239 Lab scientists	121 lab scientists
LMIS			214 health workers

NASCP, 2007

3.3.3 State and Local Government Response

State Action Committee on AIDS (SACA) and its equivalent at the Federal Capital, FACA currently coordinates all HIV/ AIDS activities at the state level, with funding and support from the World Bank, the state governments and development partners (e.g. UNDP, UNICEF and GHAIN).

The SACAs are involved in:

- ✦ Develop policy guide and Coordinating all HIV/ AIDS activities at states
- ✦ Evaluation and approval of specific action plans of state NGOs
- ✦ Examination of the activities of the State Health ministries to ensure the mainstreaming of HIV/ AIDS in Programmes
- ✦ Carry out monitoring and evaluation of the implementation of the HEAP/NSF indicators.
- ✦ Conduct HIV/ AIDS advocacy to governments and community leaders
- ✦ Building capacity for line ministries, LACAs, NGOs, CBOs and the private sector

Local Government Action Committees on AIDS (LACAs) have also been established and are involved in:

- Training local staff on basic facts about HIV/AIDS
- Carrying out Advocacy on HIV/AIDS to traditional rulers/community leaders
- Establishing District Action Committee on AIDS (DACA) and Community Action Committee on AIDS (CACA).
- Resource mobilization from PLACA, local government, agencies and individuals

3.3.3 Donors and Implementing Partners

Bilateral and multilateral partners have also committed significant resources to the scale of ART in Nigeria. They include the USG -PEPFAR, APIN, GHAINS, Action Project and CRS -. Other implementing partners include the Global Fund, DFID, CDC, USAID, UNICEF, UNFPA, WHO, CEDPA and the World Bank.

United States Agency for International Development (USAID)

USAID is an independent US agency extending assistance to countries through provision of long-term support in economic growth, agriculture/trade, global health, democracy, conflict prevention and humanitarian assistance.

In Nigeria, one of USAID's main areas of focus is HIV/AIDS with funds from the President's Emergency Plan for AIDS Relief (PEPFAR) passed by Congress in 2003 as the United States Leadership Against HIV/AIDS, Tuberculosis, and Malaria Act, which established a five-year, \$15 billion initiative to help countries around the world respond to their AIDS epidemics.

USAID collaborates closely with the GON, other USG Agencies in Nigeria and implementing partners to reach 350,000 people living with HIV/AIDS with anti-retroviral treatment; prevent over one million new infections; and provide care and support to 1,750,000 HIV-affected individuals, including those co-infected with tuberculosis.

The Global HIV/AIDS Initiative Nigeria (GHAIN) Project

The Global HIV/AIDS Initiative Nigeria (GHAIN) funded by PEPFAR through USAID, is a US\$193 million, five-year project (2005-2009) strengthening and expanding a wide range of HIV/AIDS services to support the government of Nigeria's response to the epidemic.

GHAIN project is providing HIV services to the Nigerian people in 11 of the 14 PEPFAR strategic elements: HIV counseling and testing (HCT), Orphans and Vulnerable children (OVC), Prevention of Mother to Child Transmission (PMTCT), antiretroviral therapy (ART), Palliative care, TB/TB-HIV integration, Capacity building, Strategic information, Prevention: Abstinence and Be faithful, Other prevention, monitoring and evaluation up.

GHAIN is also currently working in 101 sites in 17 high prevalence states (FCT, Cross Rivers, Anambra, Kano, Lagos, Edo, Akwa Ibom, Delta, Taraba, Adamawa, Niger, Katsina, Rivers, Nassarawa, Kogi, Enugu and Bauchi) providing HCT/ART and 40 sites for PMTCT services. There are plans to scale up to 22 states by 2009.

3.4. Logistics and Commodity Management

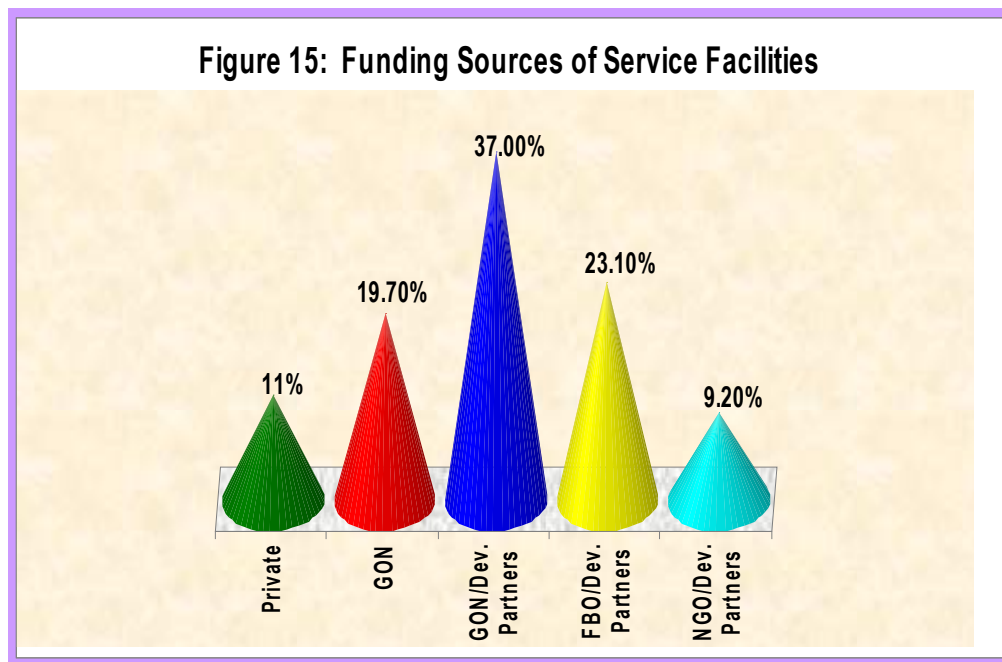
Good storage facilities existed in 89.5% of the laboratories for appropriate storage. While 84% of the facilities maintained stock inventory, only 10.5% recorded stock out of kits in the last 6 months. In facilities visited, 87% had pharmacy stores, 64.3% had fridge/freezer for storage, but only 47.3% maintained a temperature control chart. The major constrain is alternative source of power with standby generator, which were available and functional in 10(52.6%) of the facilities. Thirteen facilities 13(92.3%) operate first- expire first-out (FEFO) option of drug management system.

A National Procurement Plan has also been developed to address problems with procurement and distribution of ARVs and test kits. At the moment, procurement of ART is done by NACA (for GON programmes), while NASCP takes care of distribution. The FMOH started quantification and forecasting for the Nigerian ART programme by mid 2006. The information has continued as the Federal Ministry of Health reflects to a good extent, the ARV drug requirements of the programme. ARVs and related commodities to non-GON sites are at the moment procured and supplied to the sites by the respective funding organizations.

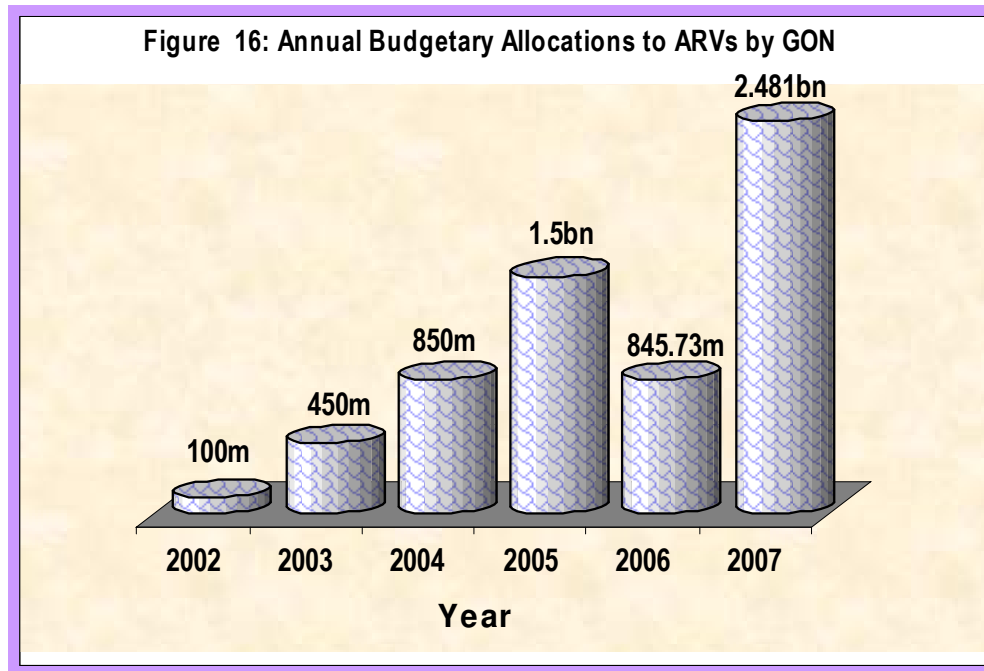
3.5 Funding and Sustainability

3.5.1 Financing

Figure 15 shows that the funding of ART and HCT services is mostly by GON and Development partners. Others include private, FBOs and NGOs. This survey observed that presently while ARVs are provided free in 85.7% of the facilities offering the service, some form of payments still exist in 14.3% of treatment facilities.



Currently, NACA enjoys direct support from GON with an annual budgetary allocation of ₦1.5 billion and an additional N200 million MDGs funds towards the HIV response in line ministries. Figure 16 shows the challenges of funding since 2002.



Additional support from the World Bank (MAP): \$90.3 million (2002-2007) and the Global fund (GFTAM): \$187.0 million (2005-2010) have become a major relief. Notably, Nigeria also lost 90 million initial Global fund for HIV//AIDS (2002 - 2007) due to non-performance of the Principal Receipt NACA. More funds from PEPFAR: \$250 million per annum, Clinton foundation (Pediatric drugs/equipment), DFID, CIDA, JICA, UN as well as the local contributions of Ecobank, Intercontinental bank, Zenith bank, MTN and Celtel have given hope for a more sustainable programme. NACA also enjoys good relationship with USAID and in collaboration with Global fund partners FBOs (AIDS Relief/CRS), Hygeia, FHI/GHAIN and Shell to ensure scale up of HIV activities to state and community health facilities including FBOs and private for profit institutions. . With increased PEPFAR funding and commitment from other donors in the next five-years, funding may not be so much the problem, but coordination and transparent and accountable management may need to improve in order to attain the desired outcomes and ensure sustainability of the programme.

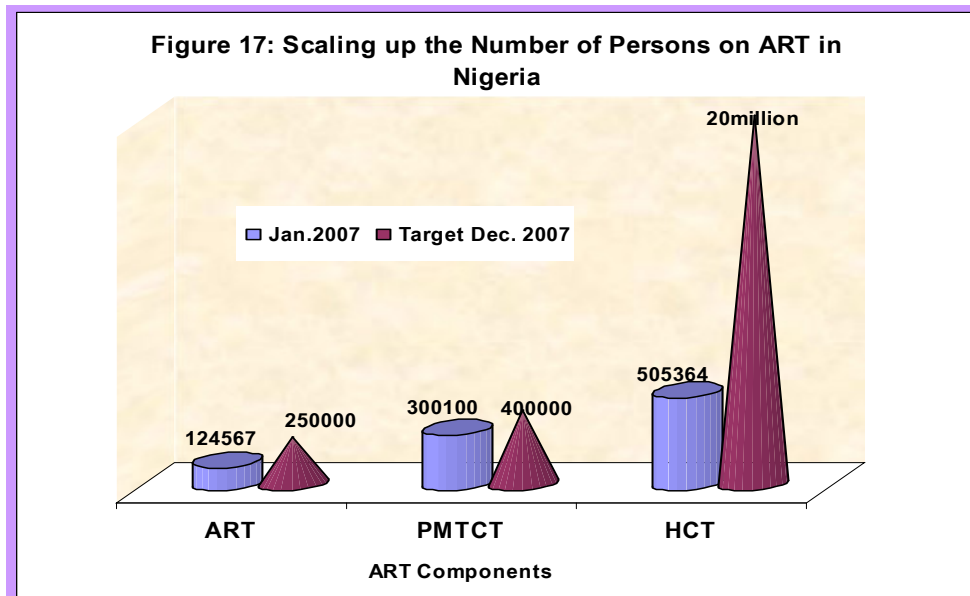
4. Discussion

4.1.1 Expanding Treatment Sites for Scaling up the Number of persons on antiretroviral therapy

The provision of HIV treatment, care and support to all who need them is an extremely challenging task in a country like Nigeria, especially as scaling up implies efforts to reach all people who should have access to information and services. In addition, scaling up towards universal access needs to ensure equity, accessibility, affordability, comprehensiveness and sustainability. We observed from this study a huge political will of the Nigerian government at the federal level, backed by significant increase in budgetary allocation for ARVs in recent years. But such political will is still lacking at the levels of most states and local governments where most of the HIV responses take place. Very significantly, it appears that current progress in ART access is donor driven; which does not augur well for sustainability.

4.1.2 How close are we to 250,000 targets?

The 124,567 PLHAs currently (March, 2007) on ART is an encouraging leap from the 78,745 persons receiving ART by mid 2006. Though it shows that Nigerian ART programme has made reasonable progress, it falls short of the goal of treating 250,000 proposed by the President by the end of 2006. New infections have occurred since 2006 and more PLHAs who were earlier infected now require ART. This means that this target needs to be exceeded to meet the goal of 2005. With paltry 200 HCT sites, testing about 10-13 million individuals to meet the present target of treating 250000 will be a huge task. In all, this presents evidence that given the present momentum, meeting the targets of the scale up according to the national plan will be very difficult (Figure 17).



The scale up of ART access in Nigeria is still limited in equity as the sites are mainly located in urban centers. Most Nigerians (65%) live in the rural areas of the country where the health infrastructure is very challenging and where information about HIV prevention and control is very poor. A potentially important benefit of the national ARV access would be if it encouraged higher uptake rates for HCT services. As this will equip HIV negative individuals with prevention messages and ensure that HIV positive individuals get referred to the nearest treatment centre. Even if people could not access ARV right away, they would know their HIV status and this could help prevent further transmission of the disease. It has been established that to identify one HIV-positive individual who will be clinically eligible to embark on ARV therapy; 32 individuals must be tested. It follows therefore that for Nigeria to meet the ambitious targets set for ART access, it will be necessary to massively expand HCT services all over the country. We observed stronger HCT centres in the tertiary and secondary ART facilities or partner funded programmes. It is encouraging that HCT and PMTCT are now provided from numerous other sites in the private sector. GON and partner are now spreading HCT and related services beyond hospitals into various community facilities and thereby making these services more accessible to more people in semi urban and rural settings.

4.2. Structures and Processes

Nigeria has developed a 5-year ART Scale up Plan designed to treat 1 million people living with HIV and AIDS by 2009. This massive increase in HIV and AIDS care and treatment programmes will require substantial resources and adequate investment and preparedness in Nigeria. This should include upgrading of facilities, equipment, supplies and most importantly the investment in the recruitment and training of staff particularly at the national, state, community and private facilities chosen for the delivery of ART. Concerns persist on the feasibility of providing ARV treatment to large numbers of people in Nigeria. The objections usually raised presently are on the complexity of regimens, the scarcity of trained health care providers, insufficient infrastructure for monitoring PLHA on ART, drug stock outs, adherence challenges and the threat of drug resistance. It is encouraging that the development partners have committed significant resources to fund activities in HIV and AIDS. As a result Nigeria is among the beneficiaries of the more than 1.6 billion dollars and 15 billion dollars committed by The World Bank and PEPFAR respectively to HIV and AIDS prevention, care and support in 15 countries, most of which are in Sub-Saharan Africa. As we rely on these funds; improved accountability mechanisms are crucial to motivate, sustain, measure and publicly report progress, so as to encourage donors.

4.3 Impact of the Antiretroviral Therapy programme

4.3.1 Institutions and Facilities

Most of the sites assessed already had the minimum requirements for ARV delivery including performing HIV counselling and testing (HCT), which is very important for identifying those who need ARVs. Other services available include ART comprehensive services. HCT is also important for medical and nursing care, for managing HIV disease and ARV related problems, PMTCT, Palliative Care, access to OIs prophylaxis; including TB and Malaria, STI Management, Universal precautions in clinical settings, and community involvement of PLHA (GIPA).

The ART programmes now capitalize on existing resources including infrastructure and available human resources of host institutions. This has led to improvements in the health infrastructure and services required for other health problems. The shortage of trained health care providers is severe in Nigeria, particularly at state and community levels and is a huge obstacle to the country meeting its scale up targets.

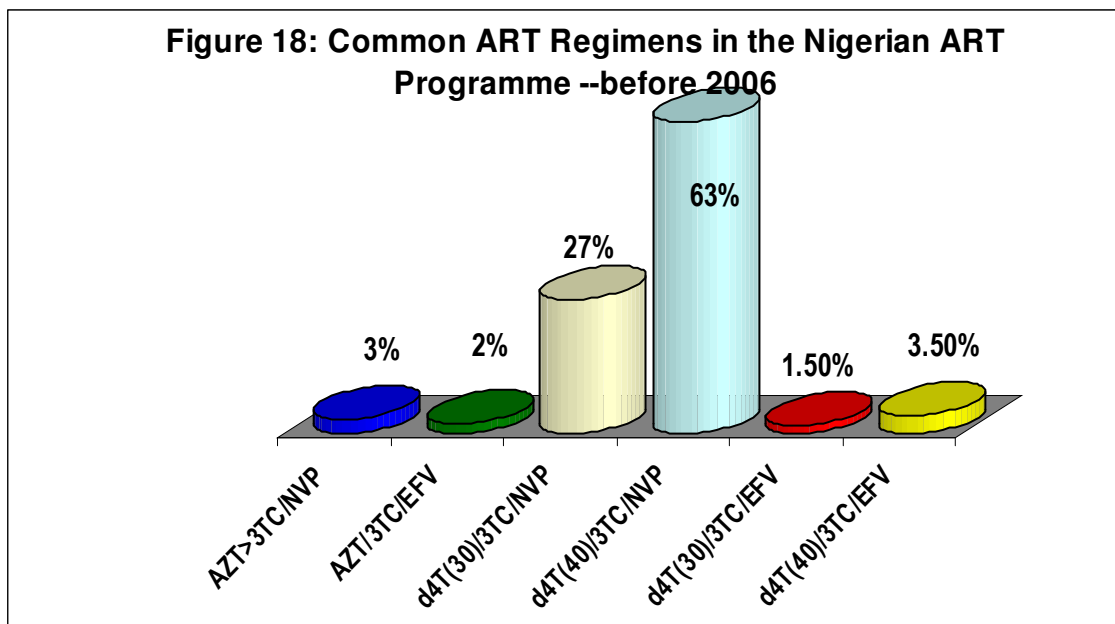
4.3.2 Patient Monitoring and Management

Functional assays include ELISA and western blot. The main issues with some of the centres were the non availability of standard operating manuals, lack of fridges, freezers to store reagents, water and alternate sources of electricity. These are necessary requirements for any functional laboratory. In some of the facilities important tests to monitor adverse effects to ART, which do occur often and some of which can lead to death were not available. These include tests for hepatitis B and C, and serum chemistry. However, they are fulfilled through linkage with other institutions.

The turnaround time for delivering test results for HIV and related services is long and is probably due to the human resource shortage and high patient load. Waiting for a day or more to get HCT results may result in clients abandoning their results while as much as one month waiting for viral load may affect patient management. With good networking or laboratories around the country, available viral load and PCR can serve the present population. Resistance testing should be encouraged, to help the large number of patients who have failed 1st line treatment. Getting laboratories to perform well and deliver good laboratory practice requires tackling the perennial problems of water and electricity that has bedevilled the country.

4.3.3 Quality of Life of Individuals on ART

Our result also revealed that 2 in every 5 individuals receiving ARVs died while on 1st line regimen. This is very high compared to the 10 - 15% seen in other programmes from other parts of Africa. In Malawi and South Africa, for example AIDS- related mortality rates dropped from more than 50 percent to around 10 percent per year. These calls for a review of the standard of care patients are enjoying first line ARVs in Nigeria. The first line drug combinations commonly used in Nigeria (Figure 18). The majority of patients are receiving Stavudine (d4T) based regimens; which is associated with long term complications of peripheral neuropathy and more importantly lipodystrophies. WHO in the recent guidelines for ART developed in 2006 has advised resource limited countries to move from the use of d4T combinations. GON has not readily procured 2nd line drugs for patients failing their initial treatment due to cost. Secondly, the lingering concerns of inherent ARV side effects/toxicities, as well as resistance monitoring and management of AIDS related diseases like hepatitis and tuberculosis has compounded the issue of where the Federal ministry of Health should place it's priority when it comes to procurement of antiretroviral combinations and drugs for OIs and co-morbidities.



While good attention is paid to tuberculosis at the moment, the same cannot be said of hepatitis Band C; which are important co-morbidities in patients with co-infection with HIV. Even though, 2nd line drugs were available in many of the facilities, supported by donors, resistance evaluation, which may determine the correct second line and salvage treatment, was not available in any site. This means the health providers may not have enough information to move a patient from first line to second line or from second line to salvage therapy. It is encouraging to note that most patients currently spend minimally on 1st or 2nd line ARVs and ART monitoring tests – as these are now mostly free at the ART sites.

4.3.4 Social Issues

PLHAs admitted they had ‘adequate counselling’ to understand ARVs and HIV disease. Yet, 3 in every five of them continued to practice unsafe sex. In the same vein, another 36% still had problems disclosing their status to their partners. Disclosure to partners and family members reduce stigma and promotes adherence to one’s treatment.

Majority of PLHAs had inadequate funds to meet their drug and social needs either because they are unemployed or had low paying jobs. This report notes that, while mean monthly expenses of PLHAs was about ₦55,000 (\$433), income was only ₦30,000 (\$250). Expenses were mostly on food transportation to the clinic, accommodation and non-ARV drugs each accounting for ₦5000.00/\$40.00. This does not include user fees charged by various health institutions. This means that ART is still well beyond the resources of most

Nigerians; bearing in mind that this additional monthly cost is more than 40 percent of per capita GDP, (\$1,011.73, 2006). This is a shift from previous observations where laboratory tests and ARVs were the leading cost of ART. An effective ART programme, therefore, should consider the inclusion of support not only for ARVs and monitoring tests but all aspects of patient cost

This study observed a worrisome scenario where some PLHA travel from Owerri to Lagos, Makurdi/Abuja to Jos and Oshogbo to Abuja (NIPRD) for ART, with huge costs on transport and accommodation. While insufficient treatment facility may be responsible; we believe that community perception and stigma may also be a driving force. Even small user fees have been noted to impose a significant financial burden on individuals and families and often undermine adherence to HIV treatment and the use of prevention commodities. There is therefore a need to strengthen the community involvement component of the Nigerian ART programme as this will help reduce the stigma and also improve adherence to drug regimens.

On the issue of gender equity in ART access, 61% females accessing ARVs, agree with the 3:2 ratio of women to men seen in other clinics in Sub-Saharan Africa. *'Where are the men'*? If they are not accessing ART, then they must be dying of somewhere. We need therefore to embark on a 'Male Involvement' programme as part of our national ART programme. Importantly, most of the women attending ART clinics are young, single, or widowed with high level of unemployed and none or very limited income. This calls for an obvious concern:

- ☞ Are more men dying?
- ☞ What factors are preventing men from utilizing ART access?
- ☞ Are some women sharing their drugs with their male partners?

In the light of this ART programme in the country should target HIV positive men.

4.3.4 Community Partnership and Capacity-building

Majority of PLHA and members of the community know of HIV/AIDS disease as human immune deficiency virus (HIV) and acquired immune deficiency syndrome (AIDS). They all agree that AIDS is real, a deadly disease with no cure. About 60 percent of respondents know someone who has died from AIDS and also that the disease is stigmatized. Stigma leads PLHAs to feel rejected and hence indulge in anger, denial and prefer to seek remedy according to their faith and any available hope - especially of 'cure'. The desire to seek for 'cure' is also an obstacle to patients adhering to their drugs.

Many people feel that seeking AIDS-related information and services will brand them as promiscuous individuals, and expose them to stigmatization. The

consultation with major stakeholders and programme managers revealed that continuing AIDS stigma prevents many Nigerians from seeking access to HCT and ART and care services. Meanwhile, increasing the number of people who know their HIV status is critical for reaching more people in need of treatment, preventing MTCT and prevention services.

The critical need of harvesting the merits of community peers and family members' involvement in a large-scale roll-out for increased coverage of programme has been demonstrated in TB through DOT and should be used to engage PLHAs for effective ART outcomes. Involving the communities that are most concerned has also been a decisive factor in many of the most successful responses to HIV/AIDS. PLHAs treatment support specialists, and support groups, encountered in many facilities demonstrated their increasing involvement in generating awareness on treatment and drug adherence. NEPWAN has assisted in establishing support groups of PLHAs and is contributing to discussions on barriers to adherence, and access to ART related services

4.4 Monitoring and Evaluation

Data capture and management for monitoring and evaluation (M&E) under the ART programme is currently done manually in most ART sites. There is improvement, no doubt as some sites are introducing the use of electronic data capture; but most trained staff are still grappling with the new technology. This was obvious from the lack, or insufficient disaggregated data obtained from study sites. Management Information Systems (MIS) standards vary in the study sites both in capacity and function. In some sites, reporting has to be done in parallel to both GON and the funding agencies according to reporting formats.

4.5 Funding and Sustainability

Presently, GON through NACA in collaboration with various development partners and NGOs has made substantial progress in its response to the HIV/AIDS epidemic in the country. Various efforts have been mobilized from all these partners to train health personnel and provide essential drugs, equipment and supplies to combat the growing HIV/AIDS epidemic. The FMOH is already experiencing severe budgetary constraints leading to provision of inadequate services and data collecting mechanisms. State owned and faith based facilities can relieve the FMOH of a lot of the financial and other human resources burden by making available treatment centres to the significant number of PLHAs who can not access them at tertiary centres. Nonetheless, NACA and SACAs need to come up with a plan for financial sustainability for effective response with visible contributions from the states. This is currently lacking as only a few states (Anambra, Cross River, Plateau, Benue, Lagos and the FCT) have some

programme on HIV/AIDS. This is because whereas there is a moral imperative for powerful nations to support weaker ones with development aids; by virtue of belonging to a global community, when such aids becomes the main driving force and not supplementary to locally contrived and driven effort, it forms the basis for poor ownership, sustainability and inevitable collapse. The words of the US President aptly captures the dramatic gains of donor funds but leaves one to ponder whether such generosity will last or come from every heart:

Excerpts: "The statistics and dollar amounts I've cited in the fight against HIV/AIDS are significant. But the scale of this effort is not measured in numbers. This is really a story of the human spirit and the goodness of human hearts. the generosity of the American people..."
- President George W. Bush, May 30, 2007

From consultations, participants widely agreed that greater accountability is required from the leadership of the Nigerian Programme at all levels to stimulate urgent and sustainable progress.

4.6 Challenges

4.6.1 Programme Coordination and Management

The bureaucratic bottlenecks in the FMOH which slow down implementation of programmes should improve as the funding has become more consistent for the health sector response.

Coordinating implementation among IPs, states and private sector is a major challenge. Despite efforts to harmonize ART funding, there are still inequalities: PEPFAR-supported sites provide comprehensive free treatment whilst FMOH sites provide free drugs but without supporting services. This gives the impression that there are parallel programmes within the country.

Data capture/management for M&E purposes under the ART programme is currently done manually in most ART sites. In addition, there's a need to conduct a management audit to certify quality of care at sites. Minimum standard of care should be clearly defined for all levels of care and maintained by all sites.

Treatment literacy is low and there's need for more hands to ensure follow up and drug adherence. Prevention for positives is also a challenge.

- Capacity of Health institutions to provide care, treatment and support is weak , particularly at the secondary and primary levels of the health care intervention need to be improved
- Poor Institutional research including operational research and research into herbal remedies for the management of OIs.

4.7 Achievements and Lessons Learnt.

- ✚ Increase in number of NGOs, CBOs, FBOs involved in HIV and AIDS care and support initiatives
- ✚ Networking of the various care, treatment and support stakeholders
- ✚ Laboratories up graded with facility and capacity for HIV screening in all tertiary and most secondary facilities in the country.
- ✚ Poverty alleviations focused NGOs now in the providing micro-credit scheme for PLHA groups, PABA and OVC trained in income generating activities
- ✚ There is greater and meaningful involvement of PLHA (GIPA) with the formation of Network of People Living with AIDS in Nigeria (NEPWAN). with state and community representation from all over the country; PLHA are now trained to serve as counsellors in different sectors including:
 - Skill acquisition centres to provide skills for PLHA, PABA and OVCs.
 - Health Care providers trained on Community and Home Based care Skills

5 Conclusions and Recommendations

ART has remarkable effects on the lives of people living with HIV/AIDS. When it is provided on a large scale, AIDS-related morbidity and mortality fall dramatically in people living with HIV; hence they live longer, have a better quality of life and return to their families and jobs.

The results of this survey have observed the enormous strides made by the National ART program in the last two to three years. Numbers of people on ART has more than tripled, more HCT centres have been established in various parts of the country and more funds have been injected into the program from many donors. However, numerous gaps still exist and need to be addressed to ensure more people can access ART and related services. For example, indirect costs borne by patients are well above their monthly incomes and this poses greater danger to adherence to these life saving drugs.

In a similar vein, the study observed a differential quality of care between sites fully funded by GON and development partners. In GON fully funded sites, patients are responsible for paying for laboratory tests and OI drugs, while all the services are free at donor funded sites. This creates inequity and is a major barrier to universal access.

The government of Nigeria has made significant progress in its bid to ensure universal access to ART and related services. This progress has the potential of increasing with current generous inflow of funding from various donors. However, the scale up of ART will require more resources, better coordination and need to be managed through a network of transparency and accountability in order for the programmes to achieve their goals and desired objectives. To achieve the national ART scale up goal, the report recommends a number of strategies for GON and development partners to consider:

- ✚ Leadership and commitment at all levels of the national response. For sustainability of the national ART scale up programme a high level of commitment from public and private stakeholders is absolutely necessary. GON, state governments and development partners and private organizations within the country must make commitment to support significantly the scaling-up program financially.
- ✚ Funding and financial sustainability: NACA and SACAs need to develop a plan for financial sustainability for effective and long term multi-sectoral response. GON and State Governments should provide enough funds to compliment funds granted by Development Partners. A long-term effort to

reverse the trend and halt AIDS depends on an increase in public expenditure by GON. State MOH should be empowered to take the lead in the State response to HIV/AIDS including provision of ART.

- ✚ Coordination: Coordination of the Three Ones by NACA needs to be improved through capacity building and harmonization of the program components of the national response by various Implementing Agencies. An efficient way for NACA to coordinate the national response will be to maintain strategic focus; providing policy, leadership and direction through regular NSF reviews and updates and provision of strategic information and capacity.
- ✚ Partnership: Partnership and collaboration between GON and all local and international Development partners including the private sector should be strengthened. In addition, collaboration between the private and public sector such as exists now between GHAIN and SHELL should be encouraged.
- ✚ Guidelines and SOPs: National guidelines for ARV drug use and SOPs should be regularly reviewed, widely distributed and adhered to by care providers. This will facilitate proper use of antiretroviral drugs, improve the quality of care and the reduce risk of developing resistance. ART treatment and PMTCT guidelines, HCT protocols and policies should be made available and widely disseminated to relevant stakeholders including care providers.
- ✚ Weak Health Systems Programs: Building the capacity of the health system in terms of infrastructure and personnel to deliver comprehensive ART is a key requirement for the massive scale up that is being envisioned. Up-scaling integrated TB-DOTS/HCT/ART services and even RH services (were indicated) for more impact and service uptake will not only improve access to ART services but also the quality of such services. Increased availability, affordability and accessibility of ART/OI/TB drugs for the management of opportunistic infection by making all ART services free at all levels of the national response is a mandatory requirement for the success of the scheme.
- ✚ Capacity Building: The shortage of trained health care providers is severe in Nigeria, not only in HIV/AIDS but across the health sector. HIV/AIDS itself is taking its toll on health care workers in Nigeria. A sustained effort is needed to improve clinical training and to provide incentives for health care workers to overcome this human resources shortfall. Training of more health workers and caregivers from the national, states and community levels in the management of HIV/AIDS and related conditions including TB will remain a major need for success. This should include training in Universal Precautions and Post Exposure Prophylaxis, which is presently not available in many health facilities.
- ✚ Community Care and Involvement: Community care policy and guidelines including Home Based Care, palliative care, HCT, STI should be put in place to increase availability of community based care initiatives for PLHA, PABA

and community based organizations. The program should promote community preventive and treatment literacy to educate people on the benefits and limitations of ART and the need for prevention. The general consensus now is that “the most effective strategies for combating the pandemic are community based and multi-sectoral”. It is important to point out that consistent and better collaborative interactions between the health sector and the communities would help in addressing the challenges encountered in scaling up HIV/AIDS Care, Treatment and Support services at community level.

- ✚ Stigma and Discrimination: Mobilize the community to combat Stigma and discrimination through education and information. Prevention and treatment education and literacy should be promoted in local languages to provide community literacy in AIDS prevention and treatment, promote AIDS-related rights and reduce HIV- associated stigma and discrimination. In addition, programs should involve PLHA in all its components and ensure that they provide leadership and are meaningfully engaged. Increased drug literacy amongst PLHA through ongoing community and adherence support education, will reduce development of resistance for both TB and ARV drugs.
- ✚ Opportunistic Infections: GON and Development Partners should ensure nationwide access and availability of cost effective drugs for the treatment of the most common OI; all health care providers should be trained in management of OIs. Free drugs for management of opportunistic infections should be made available and administered at all service delivery centres as part of comprehensive ART Programme. Programmes should integrate the TB-DOTS/ART/HCT interventions for more impact and effective services.
- ✚ Anti-retroviral therapy (ART) roll out: Rapid scale-up of ART and decentralization to state owned, FBO, private and community based facilities is the only means to achieve the Presidential directive of 250K and in line with the ongoing universal access to ART. Treatment sites should be established in the district and rural areas where most of the people reside and should embrace other comprehensive programs like VCT and PMTCT.
- ✚ The capacities of laboratories for monitoring of persons on ART needs to be built. NASCP needs to harmonize the HCT testing algorithm and ensure adequate quality control and assurance. Laboratories in tertiary and district facilities providing ART should deliver free CD4 tests. NACP should establish a tiered laboratory system from the PHC to the referral centres and put in place QA/QC. Zonal laboratories should be empowered to carry out viral load tests and at least three laboratories in the country should have the capability for resistance testing.

- ✚ Monitoring and Evaluation: The results from this survey observed that monitoring and evaluation (M&E) of national activities and progress remain major challenges at secondary and primary levels. NACA needs to ensure that the Nigerian National Response Information Management System (NNRIMS) which is the M & E component of the 'Three One' is implemented at all levels. Establishment of efficient data collection mechanisms and capacity for monitoring and evaluation at all levels of care and support interventions are vital tools to achieve this goal.
- ✚ Research: In order to obtain the much needed evidence based information required for intervention; research activities must be put in place at all levels of programme. This should include operational and basic research. Institution of a research plans will enhance research designs in the context of programme implementation and in resource mobilization to conduct research. Ensuring an efficient operational research will improve data collection, monitoring and evaluation, quality assurance and quality improvement.

Appendix 1: List of sites assessed and names of persons interviewed

Respondent	Position of Respondent	Name and Position of Respondents
Dr. (Mrs.) N. N Odunukwe	HOD Clinical	National Institute for Medical Research, (NIMR), Lagos
Mrs. M. Ekpa	M & E Officer	University of Calabar Teaching Hospital (UCTH), Calabar
Dr. P. Agaba	Site Coordinator	Jos University Teaching Hospital (JUTH), Jos
Dr. C. Okanny	PI ART Programme	Lagos University Teaching Hospital (LUTH), Lagos
Dr. W. Gashau	PI, ART Programme	University of Maiduguri Teaching Hospital (UMTH), Maiduguri
Dr. Mukhtar Dr. A. T. Olayinka	HOD, Laboratory ART Coordinator Chairman MAC	Ahmadu Bello University Teaching Hospital (ABUTH), Zaria
Dr. C. Ogbeh	HOD, Medical Services	Faith Alive Foundation Hospital, Jos
Dr. O. Y. Elegba	PI ART Programme	National Hospital, Abuja
Dr. R.V.C Moghalu	Medical Director	Bornu Medical Centre , Maiduguri
Dr. E. A. Ajonye	Adult ART Coordinator	Wuse General Hospital FCT, Abuja
Dr. Shittu Abdulganiyu	ART Coordinator	Barau Dikko specialist Hospital, Kaduna
Dr. Adeshola	Medical Officer	Mainland Hospital, Lagos
Mr. Eni Ogban	Programme Officer	General hospital, Calabar
Dr. S. A. Eugene S. A. Onu	Physician in Charge, ART	Daughters of Charity, Kubwa, FCT Abuja
Dr. S. Jim	Project Officer Counselling	Salvation Army, Lagos
Mr. Usetu Uno-Obo	Project Officer/ Lab. Focal Person	Infectious Diseases Research Hospital, (IDH), Calabar
Dr. J. Ikechebelu	Medical Director	Live Specialist Hospital, Nnewi
Dr. S. M. Usman	Project Team Leader	St. Gerald's Catholic hospital, Kaduna
Mrs. Eta- Eyo Edeth	Matron in Charge	HALT AIDS VCCT/Youth Centre Jos

Appendix 2: Human Resource Capacity of ART Sites

Staff Capacity	No	Mean	No Paid	Not Paid	No Trained	Training per Staff Category (%)
Specialist Physician	56	4	55	1	34	60.7
Doctors (MBBS)	85	6	71	14	33	38.8
Nurses/Midwives	162	12	156	6	150	92.6
Community Health Officers	8	1	7	1	7	87.5
Community Health Workers	18	1.3	7	11	9	50
Laboratory Scientists	76	5	69	7	27	35.5
Laboratory technician	61	4	58	3	20	32.8
Pharmacist	44	3	35	9	10	22.7
Pharmacist assistant(s)	16	1.1	14	2	9	56.3
Counsellors	164	12	46	118	44	26.8
Program Managers	13	1	12	1	7	53.8
Data Managers	30	2	29	1	7	23.3
Social Workers	34	2	30	4	17	50.0
Medical Record Officers	44	3	44	0	25	56.8
Nutritionists	11	1	10	1	4	36.4
Account officers	19	1	19	0	5	26.3
Clerical, secretarial staff	16	1	13	3	5	31.3
Cleaners	51	4	48	3	6	11.8
Drivers	18	1	16	2	2	11.1
Volunteer staff	60	4	27	33	18	30
Number sites = 14	986	69	766	220	439	
Summary			77.8%	22.3%	44.5%	

Appendix 3: Level of Basic Infrastructure (Consulting rooms)

Indicators	ART	Pediatrics	VCT
Mean 2 chairs	100.0	100.0	100.0
Adult cuff sphig	93.3	83.3	25.0
Visual privacy	73.3	83.3	100.0
Auditory privacy	100.0	100.0	75.0
Clean rooms (ART: 4+ 1; VCT 4+0)	75.6	80.0	70.0
Orderly	80.0	61.5	50.0
Examination couch	100.0	91.7	20.0
Desk	100.0	66.7	20.0
Detergent	80.0	75.0	20.0
Diagnostic instruments	64.3	75.0	20.0
Sharps' container	93.3	50.0	50.0
Gloves	66.7	83.3	20.0
Height a/ length scale	66.7	0.0	20.0
Measuring tape	78.2	75.0	0.0
Sink with running water	75.0	100.0	25.0
Soap	100.0	91.7	25.0
Stethoscope	46.7	100.0	25.0
Sufficient rooms	80.0	58.3	21.1
Thermometer	93.3	75.0	50.0
Paper/cloth towel	100.0	83.3	25.0
Trash basket	100.0	0.0	25.0
Weighing scale	93.3	83.3	9.7
Examination light	91.7	58.3	0.0
Screen around examination desk	50.0	75.0	25.0

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