

## Strengthening Health Systems Using HIV Services as an entry point in Plateau State, Nigeria

### [Nijerya'nın Plateau Eyaletinde HIV'e Yönelik Sağlık Hizmetlerini Başlangıç Noktası Olarak Kullanarak Sağlık Sisteminin Güçlendirilmesi]

#### SUMMARY

**AIM:** The AIDS Prevention Initiative in Nigeria, Jos University Teaching Hospital's Community Directed Intervention (CDI) approach to prevention and control of the spread of HIV/AIDS, in Plateau state, Nigeria commenced in July, 2008. Management of Tuberculosis and Sexually Transmitted Infections were also included in the package.

**METHODS:** The project utilized the 'hub and spoke' principle with the Jos University Teaching Hospital as the hub. Provision of health services commenced in December, 2008 after a period of community sensitization, advocacy and mobilization as well as training and re-training of various cadres of health staff and volunteer community members.

**RESULTS:** To date (July, 2009), thirty PHCs have been renovated and furnished; more than 300 healthcare workers trained, about 115 communities reached and about 8000 patients managed. Other outcomes of the project include equipping of the PHCs, strengthening of the PHC and referral systems, and improved community involvement in programme implementation.

**CONCLUSION:** The project methodology utilized showed that it is possible to achieve additional long term benefits from programmes primarily aimed at controlling HIV/AIDS. It is recommended that other programmes adapt this methodology for the control of diseases, so as to achieve similar impact and strengthen existing health care systems.

#### ÖZET

**AMAÇ:** Nijerya AIDS'den Korunma Girişimi olarak bilinen Jos Üniversitesi Eğitim Hastanesi Toplumla Dönük Müdahalesi HIV/AIDS yayılımını kontrol altına alma yaklaşımı Nijerya'nın Plateau eyaletinde 2008 Temmuz ayında başlamıştır. Tüberküloz ve cinsel yolla bulaşan hastalıklar da daha sonra bu yaklaşıma eklenmiştir.

**METOD:** Projede "merkez ve uzantıları" sistemi kullanılmıştır. Merkez, Jos Üniversitesi Eğitim Hastanesidir. Sağlık hizmetlerinin geliştirilmesi toplumun duyarlılık, destek ve katılımı ile sağlık personeli ve gönüllü toplum üyelerinin çeşitli kadroların eğitim ve yeniden eğitimlerinden bir süre sonra Aralık 2008 yılında başlamıştır.

**BULGULAR:** Temmuz 2009 tarihine kadar otuz birinci basamak sağlık kurumu yenilenmiş ve tefriş edilmiştir. 300'den fazla sağlık personelinin eğitilmiş, 115 topluluğa ve yaklaşık 8000 hastaya ulaşılmıştır. Projenin diğer sonuçları; birinci basamak sağlık kurumlarının donatılması ve söz konusu kurumlar ile programın uygulamasında toplum katılımının güçlendirilmesidir.

**SONUÇ:** Projede kullanılan metodoloji, HIV/AIDS kontrol amaçlı programlardan uzun vadeli ek faydalar elde etmenin mümkün olduğunu göstermiştir. Diğer hastalıkların kontrolünde, benzer etkinin elde edilmesi ve mevcut sağlık sistemlerinin güçlendirilmesi amacıyla, bu yöntemin uyarlanarak kullanılması önerilebilir.

Olubunmi O. Chirdan<sup>1</sup>  
John Alechenu Idoko<sup>2</sup>  
Terfa Simon Kene<sup>3</sup>  
Adesola O. Sangowawa<sup>4</sup>  
Yetunde Olubusayo Tagurum<sup>5</sup>  
Amina Unyeché Iyaji<sup>3</sup>  
Comfort Katu<sup>3</sup>  
Daniel Gadzama Apagu<sup>5</sup>  
James Egede<sup>3</sup>  
Victoria Danjuma<sup>3</sup>  
Stephen Yohanna<sup>3</sup>  
Oche Agbaji<sup>6</sup>  
Atiene Solomon Sagay<sup>7</sup>  
Tinuade Abimbola Oyebo<sup>3</sup>  
Prosper Okonkwo<sup>3</sup>  
Phyllis Jean Kanki<sup>8</sup>

<sup>1</sup>Department of Community Medicine, Jos University Teaching Hospital, Plateau State, Nigeria

<sup>2</sup>Infectious Disease Unit, Department of Medicine, Plateau State, Nigeria

<sup>3</sup>AIDS Prevention Initiative in Nigeria (APIN), Jos University Teaching Hospital, Jos, Nigeria

<sup>4</sup>Institute of Child Health, College of Medicine, University of Ibadan, Oyo, Nigeria

<sup>5</sup>Department of Community Medicine,

<sup>6</sup>Department of Medicine, Jos University Teaching Hospital, Plateau State, Nigeria

<sup>7</sup>Head, Department of Obstetrics and Gynaecology, University of Jos, Jos, Nigeria

<sup>8</sup>Harvard School of Public Health, Boston, USA.

**Key Words:** Health Systems, HIV services, Nigeria.

**Anahtar Kelimeler:** Sağlık sistemleri, HIV hizmetleri, Nijerya.

#### Sorumlu yazar/

#### Corresponding author:

Olubunmi O Chirdan  
Department of Community Medicine, Jos University Teaching Hospital, Plateau State, Nigeria.  
yemisichirdan@yahoo.com

#### INTRODUCTION

HIV/AIDS is still a widespread problem in the country and it mainly affects those in the reproductive

age groups. Currently, the national prevalence of HIV is 4.4% while in Plateau state it is 2.6% (1). In response to the HIV pandemic, Anti-Retroviral (ARV) therapy was instituted in Nigeria as a national

pilot programme in 2001. The goal of the pilot was to treat HIV/AIDS patients in selected hospitals. This greatly improved the lives of PLWH. Currently, there are more ART centers nationwide however; they are still largely domiciled in tertiary facilities or in urban areas. Access to these services is thus limited to those in the urban areas or those who can afford to travel from the rural areas to access treatment and care.

The APIN JUTH programme commenced provision of free ARV treatment in 2002 and it has been providing HIV prevention services – HCT, ART, PMTCT etc. In order to improve access to ART and other HIV preventive efforts, it is imperative that the services be extended outside the walls of the tertiary facilities, as close as possible to where people live.

The term Community-Directed Treatment (CDI) was taken from the Onchocerciasis Control Programmes, where the community itself designs and implements a method for drug delivery that is most suitable to its needs (2). The community directed approach to disease prevention and control has been successfully implemented in the management and control of a number of diseases within and outside Nigeria. For instance, in Karachi, Pakistan, the Aga Khan University developed both an urban and a rural health systems approach to address the health needs of the populations living in abject poverty in these areas (3). The urban programme utilized a health promotion/disease prevention model and enlisted the participation of community volunteers and private medical personnel. Following this intervention, improvements in health indices such as the infant mortality rate, the under-5 mortality rate and the 1 to 4 mortality rate, were recorded. In the rural model, the university worked with the government to enhance its capacity for staffing and management of the system and reaching communities. The model explored interventions at three levels - the district, facility and village. The district level focused on strengthening of district health management including management of information systems and developing female health personnel; the facility level incorporated health center and community-based primary health care services -at a first referral-level hospital. The focus of health activities at the village level was to improve health through schools, and village self-development ability. Within Nigeria, the Association for Reproductive and Family Health (ARFH) has also run a community-based programme (4).

The APIN Community programme adopted the Community Directed Intervention (CDI) approach to prevention and control of the spread of HIV/AIDS, TB and STIs in Plateau state, Nigeria. Inclusion of

TB and STI management in its community package are strategic. In the first instance, HIV spread in the country is mainly by the heterosexual mode of transmission; hence programmes which address HIV prevention would at the same time address STI prevention. Also, the advent of HIV has led to an increase in the numbers of cases of TB. Successful management of TB is dependent on early diagnosis and prompt institution of treatment as well as drug adherence - processes which can be greatly enhanced by community-based approaches. In addition, TB like HIV is still associated with a great deal of stigma which militates against prevention efforts. Consequently, a programme that addresses HIV prevention and treatment can simultaneously tackle prevention and management of TB and STIs. The APIN CDI programme was thus established in July, 2008. Key partners of the APIN CDI project were the Jos University Teaching Hospital (JUTH) APIN/PEPFAR, Community Medicine Department, JUTH Jos and the HALTAIDS NGO. The primary objective of the programme was to integrate the management of HIV, TB and STI at the PHC level in Plateau state, Nigeria. Secondly, the project aimed to strengthen home based care for HIV, TB and STIs and strengthen the PHC system as well as the referral systems

## **MATERIAL AND METHOD**

The APIN CDI utilized the hub and spoke principle to achieve its goals/ objectives. At the core of the CDI programme is the Jos University Teaching Hospital to which 13 satellite hospitals (General hospitals, faith-based hospitals and a private hospital) are attached. Currently, seven (7) of these satellites are fully operational. Three (government-owned Primary Health Care centers are attached to each satellite hospital. This is the case in all satellites with the exception of the General Hospital, Pankshin which has the Federal College of Education clinic attached to it in addition to three (3) other government owned PHCs. (Figure 1).

The APIN CDI programme focused on the following: provision of HIV Counseling and Testing (HCT), prevention of Mother-to-Child-Transmission of HIV (PMTCT) and Home-based Care (HBC), Comprehensive Tuberculosis care for the management of TB, treatment of STIs and provision of basic reproductive health (RH) services. CDI targets all sub-groups of the population – men, women and children in 10 of the 17 LGAs in Plateau state.



**Figure 1.** The CDI guiding principle: The Hub and Spoke principle

### Activities

Advocacy and community mobilization  
Advocacy was conducted at both state and LGA levels and memoranda of understanding (MOU) signed with the Plateau state Ministry of Health, the Ministry of Local Government and Chieftaincy Affairs, implementing partners and all the satellites. The community heads of the target communities were approached and intimated of the programme goals, and activities, community members were also mobilized.

### Selection of satellite hospitals

Thirteen satellite hospitals were selected in ten LGAs in Plateau state. However, 7 satellites are fully operational. Advocacy and implementation process is on-going in the remaining 6 satellites. All the satellites were required to be running a comprehensive HIV programme prior to being selected.

### Selection of PHCs

This involved a rapid assessment and selections of 22 PHCs. PHCs were selected based on proximity to satellite centers, geographic distribution, etc. After selection, varying degrees of renovation were carried out in the PHCs following a comprehensive assessment of needs. Renovation works ranged from painting of the structures and building of toilet

facilities to construction of additional blocks of offices/consulting rooms and burn-and-bury pits.

### Training of PHC Staff

Five-day training was held for the PHC staff. Topics covered included HCT, PMTCT, HBC as well as other services included in the minimum package for health service delivery (this package was adapted from various comprehensive HIV care and support programme documents). In addition, topics on monitoring and evaluation of programme activities were exhaustively covered.

### Catchment area mapping and selection of communities

Social maps highlighting the population distribution, PHCs, schools and religious institutions in the various communities were produced with the assistance of the PHC staff. These maps helped to delineate the coverage areas of the CDI. The five communities per selected PHC were chosen based on pre-determined criteria such as proximity to the PHC, high population density, availability of existing health/ development committees. In addition, availability of at least a secondary school in the community was one of the selection criteria. This was included to pave the way for future integration of the programme into existing school-based HIV preventive programmes.

**Table 1.** List of CDI Satellite Hospitals and attached Primary Health Care Centers (PHCs)

	<b>Operational Satellite Hospital (Referral Site for the PHCs)</b>	<b>PHCS</b>	<b>Local Government Area</b>
1	SDA Hospital Jengre (FBO)	Jengre Town PHC Amo Katako PHC Zabolo PHC	Bassa
2	Solat Women's Hospital, Jos	Nassarawa Medical Centre Abmira Hospital, Jos Jenvak Hospital, Jos	Jos North
3	Vom Christian Hospital (FBO)	Chugwi PHC, Ganawuri PHC, Riyom PHC Sho PHC	Jos South and Riyom
4	General Hospital Barkin Ladi	Dorowa Babuje PHC Maikatako PHC and Tenti PHC	Barkin Ladi Bokkos
5	General Hospital, Pankshin	FCE Clinic Pankshin, Pankshin town PHC, Kabwir PHC, Amper PHC, Jarmai PHC and Bashar PHC	Pankshin, Kanke, Kanam and Wase
6	COCIN CDP Panyam (FBO)	Kerang PHC Mararaba Pushit PHC Mangun PHC	Mangu

Community advisory boards were set up in each community. Key members of the advisory boards include some community leaders, leaders of faith based organizations, members of LGA/District/village health committees, PHC coordinators at secondary satellites and focal persons in the host PHC.

#### **Selection and training of VHWs**

A volunteer health worker per community was chosen to carryout community-based health activities. The community advisory boards assisted with the nomination and selection of the VHWs. Some of the criteria used to select the VHWs included previous experience with community-based programmes and active membership in an existing community or faith-based organization. VHWs also had to be residing in the selected communities. One of the 5 VHWs attached to a PHC was then selected as a lead VHW and charged with the responsibility of directly supervising the activities of other VHWs, collating their monthly activities and submitting copies of these to the PHC and CDI office. VHWs are paid a monthly stipend as an incentive. Their immediate family members also receive free basic medical care.

Five-day training was conducted for all the VHWs before they commenced their community activities. The training made use of didactic lectures, practical sessions, role-plays and demonstrations in order to enhance learning. The VHWs were trained in the delivery of a number of services included in the minimum package of care.

The VHWs were also trained in the conduct of regular house-to-house visits within the community, provision of basic HCT, HIV home-based care, the process of referring patients to the PHCs for definitive care and follow-up of those referred as well as utilization of the activity reporting and summary forms.

#### **Community sensitization/ Stakeholders meeting**

Community sensitization meetings were held before the flag-off of the programme. This served to intimate community members of commencement of the programme, the available services and the VHWs were also formally presented to the community members. Stakeholders meetings are also held periodically where the VHWs inform community members on progress made and challenges are discussed with solutions proffered.

#### **Monitoring and Evaluation**

Monitoring tools were developed to facilitate monitoring and evaluation of the CDI activities. Activities at all levels are documented and summarized on a monthly basis. These are then forwarded to the next level and collated at the CDI office. Data on number of trained VHWs reporting, timeliness of reporting, activities of the VHWs, number of referrals and reasons for the referrals, number of patients referred who eventually came to the PHC, number and type of services accessed at the PHC etc. are documented.

**Table 2.** Services provided at community, PHC and satellite levels from Dec, 2008 to July 2009

Levels	Activities	Number
Community based level (n=total number of patients attended to in the community *multiple responses	HIV Home-based care or counseling	731
	HIV Counseling	14,767
	PMTCT counseling	7187
	Referral for HIV Counseling & Testing	1052
	Referral for symptomatic TB	97
Primary Health Care level (n=total no of patients seen at the PHCs) *multiple responses	Treatment of STIs	1166
	HCT	6740
	Referrals to Satellite centers	424
	Pregnant women counseled, tested and received results of HCT	3863

### Supervision of PHCS and VHWS

There is ongoing supportive supervision of activities of all VHWs and PHC staff.

The PHC coordinators in the satellite hospitals pay monthly supervisory visits to the PHC staff. Members of the CDI team undertake monthly supervision of volunteer health workers. On a quarterly basis, a community data verification survey is conducted by the staff of CDI.

### Community-based activities

HCT/PMTCT/TB/STI/HBC services are provided to 115 communities in 10 LGAs in Plateau state such as counseling & referral for HCT, PMTCT and TB. Patients are also referred to the PHCs for STI management, family planning counseling and services.

### Primary Health Care facility-based activities

These include training of PHC staff, provision of HCT, sputum microscopy and provision of TB treatment, provision of PMTCT services, family planning services, and treatment of STIs as well as referral services.

### Activities at the satellite sites

Comprehensive HIV treatment including HCT, PMTCT, ARV and treatment of patients with TB are provided at the satellite centers.

### Data management

Community and health facility data are collected and collated on a regular basis. There is regular feedback of findings to those working at all levels.

## RESULTS

Since its inception in July 2008 and commencement of health service delivery in

December, 2008 to July 2009 the APN CDI programme has provided HIV/AIDS, STI and TB care including counseling at the community level to over 20, 000 patients at all its operational levels.

### Community-based activities

The VHWs have provided HIV counseling to 14767 patients (5,545 males and 9,222 females), 7187 (412 males and 6775 females) have been counseled on PMTCT and 1052 (193 males and 859 females) have been referred for HCT. Seven hundred and thirty-one patients have received home-based counseling including adherence counseling, on ART 303, counseling on positive living, 125 and nutritional counseling 303. In all, 97 patients (50 male and 47 females) patients with symptomatic TB have been referred to the PHC by VHW, where definitive diagnosis was made and referred to the appropriate treatment centres.

### PHC activities

A total of 8003 patients have accessed the PHCs in the period under study. Over a thousand patients (217 males and 949 females) received STI treatment and 3,863 pregnant women have been counseled tested and obtained their results of the HIV test in the PHCs. Overall 424 patient who tested HIV positive have been referred to the HIV comprehensive treatment centre (Satellites) for appropriate treatment.

## DISCUSSION

The CDI programme resulted in enhanced service delivery, improvements in the health system and as well as community participation. Other community directed programmes have reported similar improvements in the health status of their target community members (3). An assessment of the community-based reproductive health communication

interventions programme on contraceptive use among young married couples in Bihar, India showed a significant increase in contraceptive use among community members in the intervention areas (5). Similarly, a community-wide intervention to improve the delivery of preventive services to children led to improvements in lasting changes in the organization and financing of care and changes in the process of preventive service delivery over a 3-year study period. Many of these improvements were sustained after the project was completed (6).

The CDI project enjoyed a high level of cooperation from community members. This could be attributed to the willingness of community members to be actively involved in projects in their communities. In addition, the pre-implementation phase of the study involved high-level advocacy meetings with community leaders, leaders of faith-based organizations etc. Margolis et al also reported an encouraging level of collaboration as well as willingness of community agencies to sustain efforts begun during the project. (6)

Linking the CDI project with already existing health systems such as the government and private health facilities and PHCs has the potential of enhancing sustainability of the programme on conclusion of the project as well as reducing the likelihood of duplication of health services. Also highlighted is that utilizing existing government health systems in developing the rural programme in Karachi, was imperative because if the university developed the programme independently of the government there would be problems with its sustainability or large-scale replication (3).

## **CONCLUSION**

The project resulted in enhanced service delivery, improved the health system and as well as community participation. These are likely to result in sustainability of the programme with long term benefits. The project has shown that it is possible to achieve additional long term benefits from programmes primarily aimed at controlling HIV/AIDS, TB and STIs. The project has also shown that communities are receptive to programs that improve their health; record keeping at PHC level improved; morale of health workers was enhanced by infrastructural facelifts.

The CDI plans to expand to all the LGA in Plateau state thus increasing the number of satellites, PHCs and communities covered. In addition, it also hopes to include management of other diseases such as malaria

in its minimum package. It is recommended that other community-based programmes utilize this methodology for the control of diseases in order to strengthen health care systems and achieve sustainable impact.

## **ACKNOWLEDGEMENTS**

Funding for this project was provided by the AIDS Prevention Initiative in Nigeria (APIN). The project team wishes to express their appreciation to all the staff of Halt AIDS, APIN JUTH, staff of the National HIV/STI Control Division, Federal Ministry of Health, Plateau State Ministry of Health, the APIN satellite and PHC staff as well as volunteers and community members for the zeal they demonstrated in improving the health of their community members.

## **REFERENCES**

1. Federal Ministry of Health. National HIV/Syphilis Sero-prevalence Sentinel Survey. Federal Ministry of Health National AIDS/STI Control Programme; 2008.
2. WHO. Onchocerciasis and its control. Report of a WHO expert committee on onchocerciasis control. Technical Report Series No 852. Geneva. WHO, 1995.
3. Bryant JH, Marsh DR, Khan KS, D'Souza R, Husein K, Aslam A, et al. A Developing Country's University Oriented toward Strengthening Health Systems: Challenges and Results. *American Journal of Public Health*. 1993; 83(11): 1537–1543.
4. ARFH Reproductive Health Programmes: Increasing Access to Quality Reproductive Health Services. <http://www.arfh-ng.org/reproductivehealth.htm> [Access date: 2.12.2009]
5. Elkan ED, Rekha M, Mizanur R. Effect of Communication Interventions on Contraceptive Use in Bihar, India. *International Family Planning Perspectives*. 2008; 34(4): 189–197.
6. Margolis PA, Stevens R, Bordley WC, Stuart J, Harlan C, Keyes-Elstein L, Wisseh From Concept to Application; The Impact of a Community-Wide Intervention to Improve the Delivery of Preventive Services to Children. *Pediatrics*. 2001; 108(3). <http://www.pediatrics.org/cgi/content/full/108/3/e42>