

Northern Uganda
Malaria, AIDS & Tuberculosis
Programme (NUMAT)



END OF PROGRAMME
REPORT

JUNE 2012



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JSI Research & Training Institute, Inc.



Northern Uganda Malaria, AIDS & Tuberculosis Programme (NUMAT)
Implemented by JSI Research & Training Institute, Inc. (JSI),
with AIDS Information Centre (AIC) and World Vision

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ACRONYMS

ABC	Abstinence, Be faithful, Condom
ACT	Artemisinin-based Combination Treatment
AIC	AIDS Information Centre
AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
ART	Anti-Retroviral Therapy
ARV	Anti-Retroviral
ASCA	Accumulating Savings and Credit Association
AVSI	Associazione Volontari per lo Sviluppo Internazionale
BCA	Behavioral Change Agents
BCC	Behavior Change Communication
BCP	Basic Care Package
CA	Community Animators
CB-DOTS	Community-based Directly Observed Treatment, Short Course
CBO	Community-based Organization
CHATTs	Congressional HIV/AIDS Task Team
CMD	Community Medicine Distributors
CME	Continuing Medical Education
COBES	Community-based Education Services
CORPs	Community Resource Persons
CPT	Cotrimoxazole Prophylactic Treatment
CSO	Civil Society Organization
CSW	Commercial Sex Worker
DAC	District HIV & AIDS Committee
DAT	District AIDS Taskforce
DBS	Dried Blood Spot
DHMT	District Health Management Committee
DHO	District Health Officer
DHT	District Health Team
DLFP	District Laboratory Focal Person
DOTS	Directly Observed Treatment, Short Course
DTLS	District TB & Leprosy Supervisor
EID	Early Infant Diagnosis

FBO	Faith-based Organization
FSG	Family Support Group
HAART	Highly-active Anti-retroviral Therapy
HBMF	Home-based Management of Fever
HC	Health Centre
HCT	HIV Counselling and Testing
HIV	Human Immunodeficiency Virus
HBC	Home-Based Care
HCWM	Health Care Waste Management
HMIS	Health Management Information System
HRD-H	Human Resources Development for Health
HRIS	Human Resources Information System
HSD	Health Sub-District
HW	Health Worker
IDP	Internally Displaced Persons
IEC	Information Education and Communication
IPT_p	Intermittent Preventive Therapy in Pregnancy
ITN	Insecticide-Treated Net
JMS	Joint Medical Store
JSI	JSI Research & Training Institute, Inc.
LC	Local Council
LQAS	Lot Quality Assurance Sampling
M&E	Monitoring and Evaluation
MARP	Most at-Risk Population
MIP	Malaria in Pregnancy
MIS	Management Information System
MOH	Ministry of Health
MOU	Memorandum of Understanding
NGO	Non-Governmental Organization
NMCP	National Malaria Control Programme
NMS	National Medical Store
NSA	Network Support Agent
NTLP	National TB and Leprosy Programme
NUMAT	Northern Uganda Malaria, AIDS & Tuberculosis Programme
OI	Opportunistic Infection
OPD	Out-patient Department

PACE	Programme for Accessible Health Communication and Education
PCR	Polymerase Chain Reaction
PEP	Post-exposure Prophylaxis
PEPFAR	President’s Emergency Plan for AIDS Relief
PITC	Provider-initiated HIV Testing and Counselling
PLHIV	People Living with HIV
PMI	President’s Malaria Initiative
PMP	Performance Monitoring Plan
PMTCT	Prevention of Mother-to-Child Transmission
PTC	Post-Test Club
PY	Programme Year
QA	Quality Assurance
RCT	Routine Counselling and Testing
RDT	Rapid Diagnostic Test
SAC	Sub-County HIV & AIDS Committee
SCHW	Sub-County Health Workers
SCMS	Supply Chain Management System
SGBV	Sexual and Gender-Based Violence
SOP	Standard Operating Procedure
SMC	Safe Male Circumcision
STI	Sexually Transmitted Infection
TB	Tuberculosis
TOT	Training of Trainers
TST	Treatment Support Team
UAC	Uganda AIDS Commission
USAID	United States Agency for International Development
VCT	Voluntary Counselling and Testing
VHT	Village Health Team
VSLA	Village Saving and Loan Associations
WHO	World Health Organization
ZTLS	Zonal TB & Leprosy Supervisor



NUKAT

REFERRAL FORM

USAID

REFERRAL FORMS

District: _____
Health Sub-District: _____
Name of PHA Group: _____
Name of NSA: _____

LETTER FROM NUMAT

NUMAT is delighted to present this end of project report that shows the efforts of management, staff, partners and stakeholders in complementing the Government of Uganda's provision of essential malaria, TB and HIV/AIDS services to the population of the Acholi and Lango Regions in Northern Uganda.

NUMAT began operations immediately following the conflict in the region and continued implementation, first through transition and resettlement and then further during the development phase of the region. Although the programme made use of the foundation that had been laid by other donor-supported programs in the region, NUMAT—the first district-based project of its kind—came up with new innovations that were successfully applied. The many achievements, experiences and best practices derived from this project were duly shared through various conduits, including over 70 abstracts that were written and accepted for presentation at both national and international meetings.

In the final ten months of the programme, while continuing to implement routine activities, NUMAT focused on strengthening the capacity of districts, civil society organizations and community structures in order to prepare them for the programme close-out. NUMAT was also able to escalate the pace of Safe Male Circumcision (SMC)—an intervention that was introduced to the region by the NUMAT project in November 2010 in response to the launch of the Ministry of Health's SMC policy, which promoted male circumcision as a scientifically proven biomedical prevention measure against HIV. With funding and technical guidance from PEPFAR, NUMAT was successful in facilitating and creating demand for the procedure in a previously non-circumcising community.

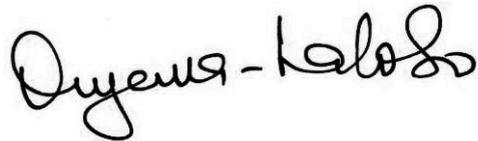
There were certainly several challenges with which the programme had to contend, including the redistricting of Northern Uganda. During the project's lifespan, the nine original programme supported districts turned into 15 districts. This created numerous administrative, logistical and technical challenges for the programme, all of which required development of new plans and strategies in order to ensure that project objectives continued to meet the health-related needs and aspirations of the people of Northern Uganda.

NUMAT worked closely with the Ministry of Health and the District Local Government health system as well as civil society actors, without whose support and commitment the programme could not have achieved such successful results. The support and achievements were reflected by the overwhelming response of stakeholders, who actively participated at the End of Project Conference held in Gulu on March 29, 2012.

One pillar of NUMAT's success was the ownership and involvement of the communities served by the project. In particular, the people living with HIV (who were supported in organizing themselves around sub-county and district forums) became critical agents in the provision of treatment, care, support and HIV prevention activities. NUMAT proudly leaves behind a legacy reflected by the capacity of PLHIV to advocate, animate, and promote HIV-related services for their communities.

None of our success would have been possible without the leadership of JSI Research & Training Institute, Inc. and partners, World Vision and AIDS Information Centre, or the generosity of the American people through the funding, guidance and technical assistance provided by USAID. USAID has been an unfailing development partner, always ready and willing to listen and support our efforts.

We invite you to read and enjoy the End of Programme Report!

A handwritten signature in black ink, reading "Oryema - Lalobo". The signature is written in a cursive, flowing style.

Christine Oryema Lalobo
Chief of Party, NUMAT

LETTER FROM JSI

It has been JSI's great honor, in collaboration with our partners World Vision and AIDS Information Center, to work with USAID, the Government of Uganda, district leaders, and local partners to implement the tremendously successful NUMAT Programme. Working together in an incredibly challenging environment, we supported programme and put in place stems which both addressed the immediate HIV, malaria and TB service needs of thousands of people and established an impressive foundation from which services will continue to grow.

In 2006 when NUMAT began, Northern Uganda was just beginning to recover from a long and painful period of history. Families and entire communities were displaced and lived under the constant threat of violence. Rates of HIV, TB and malaria were higher than other regions of the country and the health infrastructure had been decimated. In response to this situation and the opportunity that peace provided, USAID and the Ministry of Health developed a comprehensive and bold plan to rapidly address the most urgent health needs and work to move the region from an emergency response to sustainable public health service delivery.

Under the leadership of a group of dedicated Ugandan public health professional, NUMAT strove to meet the demands of individuals, families and communities as they moved from camps back to their homes. Working in partnership with district government and service providers, NUMAT provided critical support to decentralize clinical services, increase the engagement of communities, foster people living with HIV to be leaders in the response to the epidemic and test new innovations to address long standing problems, including access to reliable laboratory services and meeting human resource needs.

Earlier this year, there was an opportunity for NUMAT's partners to present to their neighbors and to the public health community their achievements at an end of project meeting. The achievements were tremendous. Local government in 15 districts is better able to plan, implement and monitor HIV, TB and malaria services, using data for decision making. The number of people who know their HIV status and are in care, including those receiving treatment, has increased significantly. Safe male circumcision services are more widely available and jointly offered with cervical cancer screening. High quality HIV-related laboratory results are available to clinicians to better guide treatment. Men and women living with HIV have become service providers in their communities and advocate for fair and equitable treatment. Comprehensive community based prevention and support services are available and sustainable.

Significant progress has been made. But challenges remain in Northern Uganda. There are great opportunities to build on NUMAT's success to bring HIV, TB and malaria services closer to communities and integrate with other essential public health services. District governments need continued support to adapt programs to respond to a changing environment and ensure uninterrupted access to services and supplies.

On behalf of JSI, I would like to congratulate the NUMAT team and thank USAID and the MOH for this opportunity. It has been a tremendous honor to be part of this work.

A handwritten signature in black ink that reads "Andrew Fullem". The signature is written in a cursive style with a long horizontal line extending to the right.

Andrew Fullem
Associate Director, JSI

Executive Summary

Awarded in August 2006, the USAID-funded Northern Uganda Malaria, AIDS & Tuberculosis (NUMAT) Programme was the agency's lead health programme in the region. Designed to support the Ministry of Health's reconstruction efforts, NUMAT had five objectives:

1. To improve coordination of HIV & AIDS and TB responses.
2. To increase access to and utilization of quality HIV & AIDS, TB, and malaria prevention, care and treatment services.
3. To decrease vulnerabilities for specific groups to HIV and other infectious diseases.
4. To increase access of people living with HIV (PLHIVs) and their families to wrap-around services.
5. To improve use of strategic information.

Led by JSI Research & Training Institute, Inc. in partnership with World Vision and the AIDS Information Center, the consortium applied a broad range of strategies to support health systems strengthening and provision of critical HIV, TB, and malaria prevention and treatment services in an initial nine (later 15) districts of Northern Uganda. These strategies included:

1. Rapidly replicate successes currently implemented by network partners and local government to support the continuum of HIV, TB and malaria prevention, treatment and care services.
2. Support, establish and strengthen integrated outreach and service delivery.
3. Build a culture of demand.
4. Strengthen existing local structures to coordinate and integrate services for IDP and close the gap between community expectations and services provided by the public health systems.
5. Work with local partners to increase the voice of women and people living with HIV.
6. Address critical human resource needs through innovative approaches and incentives.

Through a mix of technical assistance, capacity building, procurement and grants support, NUMAT provided critical assistance to district health officials to assess, plan, monitor and evaluate HIV, TB, and malaria service delivery. The project played particular emphasis on strategic planning and capacity building with district health offices and supporting efforts to decentralize health services to Health Center (HC) IIIs and through community based interventions.

NUMAT was able to support public and NGO partners in 15 districts to strengthen their ability to plan, implement and monitor comprehensive HIV services. Specific accomplishments include:

- NUMAT strengthened the ability of 15 District AIDS Committee and District Health Offices to develop and implement comprehensive HIV plans.
- The project built the capacity of 11 Ugandan NGOs to expand the reach of their HIV services and bolster their public health management capabilities.
- Nearly one million people were tested for HIV by nearly 1,500 health staff trained by NUMAT.
- NUMAT tested over 400,000 pregnant women for HIV, of whom 18,218 were provided ARVs. These efforts resulted in an estimated 5,000 new HIV infections averted.
- The programme provided HIV clinical care for 55,000 women, men and children, of whom 16,575 were started on ART.
- NUMAT refurbished 28 laboratories and trained staff to provide comprehensive laboratory services.
- The TB treatment success rate was increased to over 85 percent.
- Over the course of the project, 25,706 men were circumcised.
- NUMAT distributed 195,000 bed nets to pregnant women.

While these results are impressive, they do not adequately tell the story of NUMAT. Each data point presented here represents an individual, family or community that has benefitted from support provided by USAID through NUMAT. Most importantly, this report provides critical information about how the NUMAT team was able to achieve these results. NUMAT has been a successful program largely due to the collaboration between the implementing team, district health officials, the Ugandan Ministry of Health, and USAID, who have been able to respond creatively to the changing development landscape in Northern Uganda. This report provides an overview of NUMAT's interventions, successes, challenges and lessons learned for the benefit of future programs in the region.

Background

The USAID-funded Northern Uganda Malaria, AIDS & Tuberculosis Programme (NUMAT) was designed to support expanded access to, and utilization of, HIV, tuberculosis (TB), and malaria activities in Northern Uganda. The original nine programme-supported districts were subsequently subdivided so that, by the programme's end, NUMAT supported the following 15 districts: Gulu, Pader, Agago, Amuru, Nwoya, Lamwo and Kitgum from the Acholi sub-region and Lira, Alebtong, Otuke, Amolatar, Dokolo, Apac, Kole and Oyam from the Lango sub-region (Figure 1).

NUMAT was funded through a Cooperative Agreement with the United States Agency for International Development (USAID) for the period August 2006 through August 2011, and was subsequently extended through June 2012. It was implemented by JSI Research & Training Institute, Inc., and included World Vision (WV) and AIDS Information Centre (AIC) as consortium members.

The programme objectives were to:

1. Improve coordination of HIV & AIDS and TB responses.
2. Increase access to and utilization of quality HIV & AIDS, TB, and malaria prevention, care, and treatment services.
3. Decrease vulnerabilities for specific groups to HIV and other infectious diseases.
4. Increase access of PHAs and their families to wrap-around services.
5. Improve use of strategic information.

At the time NUMAT was awarded, other USAID-funded projects were concluding or had just ended their interventions in Northern Uganda. NUMAT built on some of the successes achieved by these projects and made use of the synergies created in the region by building on existing relationships

with districts and grantees that had been supported by previous USAID-funded projects. Additionally, NUMAT was unique in design: this was the first USAID-funded project to have its headquarters situated in Northern Uganda (rather than Kampala), where it could more rapidly and appropriately respond to the health needs of the population as it transitioned from internally displaced persons (IDP) camps back to their homes and villages.

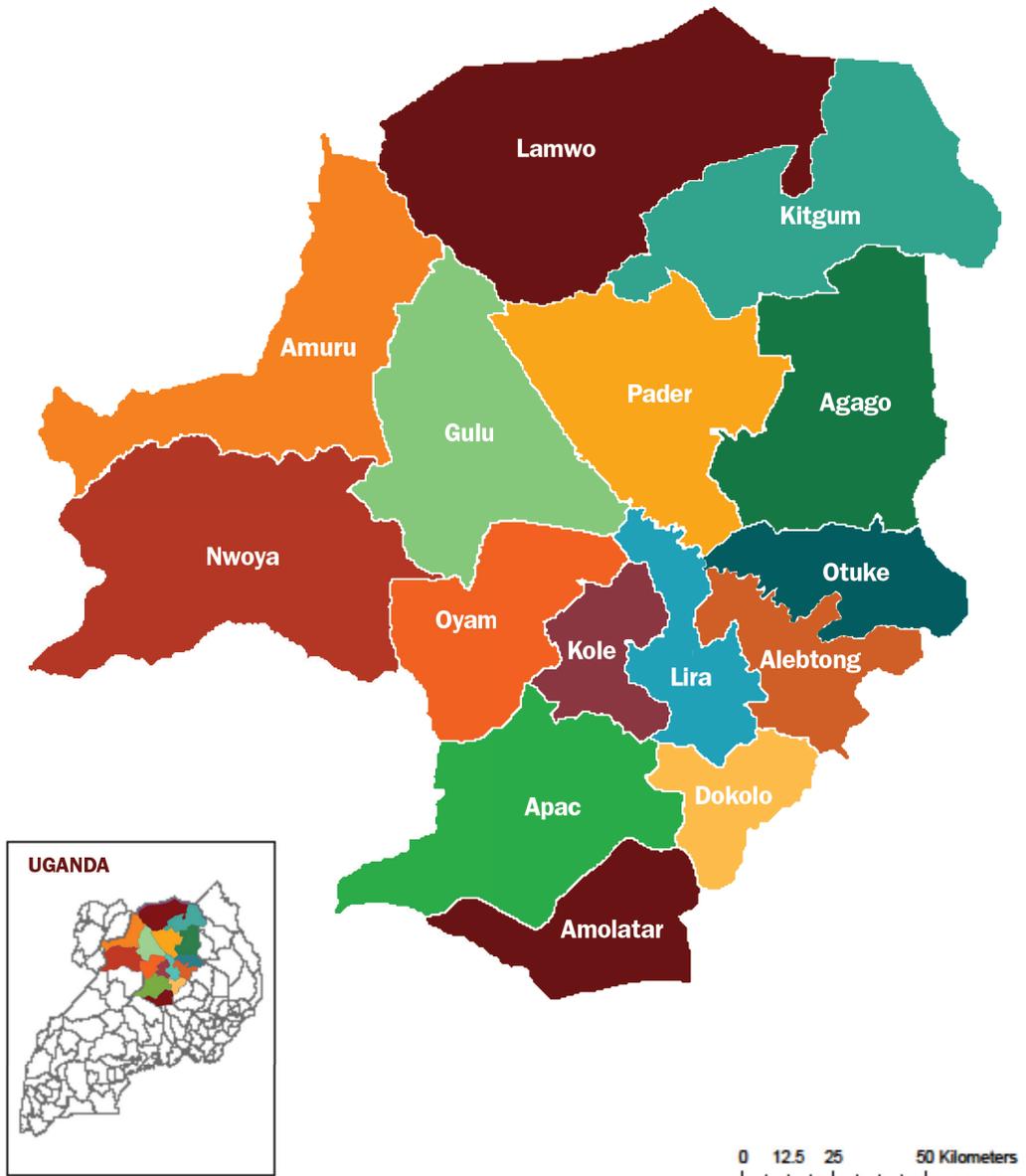
NUMAT was inspired and guided in its implementation by the following principles:

- Service provision was to be scaled-up with consideration of a variety of inputs that aligned with existing frameworks/policies in developed by the Ministry of Health (MOH), local governments and service providers.
- District involvement and ownership of the supported services were to be promoted.
- Services were to be strengthened in peripheral areas beyond towns and municipalities, with special emphasis placed on lower level facilities, specifically Health Centers (HC) grade IV and III, located in the remote and rural areas of the region.

The distinctive strategies chosen to assist the Programme within the above framework included, among others:

- Strengthening existing service provision sites to increase coverage and quality of services offered;
- Supporting new sites in peripheral areas to offer comprehensive services;
- Instituting integrated outreach and service delivery;
- Strengthening existing local structures to coordinate and integrate services;
- Addressing critical human resource needs; and,
- Involving beneficiaries in planning and delivering of services, including people living with HIV (PLHIV).

FIGURE 1: Map of the 15 NUMAT-supported Districts in Northern Uganda, 2012





TUFURAHIE SOTE KWA SIKU NI VI CEO

The Context of Northern Uganda

OVERVIEW

Northern Uganda is recovering from the consequences of a 20-year conflict and has remained stable and secure since 2006. By the end of 2011, due to improved security, more than 95% of the 1.8 million IDPs sheltered in camps at the height of the conflict had returned to their communities of origin or settled in new locations¹. Humanitarian efforts substantially reduced and all humanitarian coordination functions had been taken over by the national authorities. The pace of return has sometimes outpaced the rebuilding effort creating a situation in which demand for basic health services far exceeded the resources and infrastructure that existed in resettlement areas.

The Peace Recovery and Development Plan (PRDP)—the Government of Uganda’s national framework for the transition from relief to recovery of Northern Uganda—started full scale implementation in July 2009. The PRDP targets a population of which 40% is defined as insecure non-poor², indicating that they are very vulnerable to any economic downturn or household catastrophic health expenditure (e.g. grave sickness and hospitalization of one of the family members). Notably, in 2009/10, the absolute poverty rate in the region improved significantly, falling from 61% in 2005/06 to 40%, although the rate is still far above the national average of 25%³.

¹ United Nations High Commissioner for Refugees (UNHCR), 2012 Uganda country operations profile, <http://www.unhcr.org/pages/49e483c06.html> (accessed on 24th April 2012).

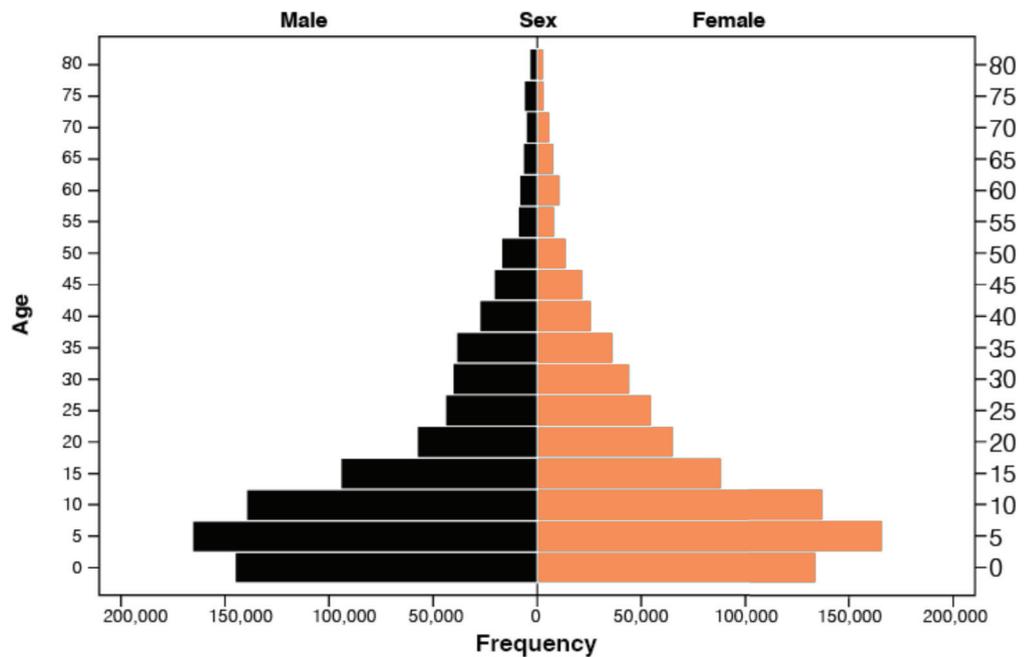
² Ministry of Finance, Planning and Economic Development, Uganda Poverty Status Report 2012.

³ Office of the Prime Minister, Midterm review of the PRDP for Northern Uganda, June 2011.

Despite the decline in absolute poverty rate, unemployment is high and food security has been fragile due to difficult access to agricultural inputs, erratic climate factors, loss of the basic agricultural skills for returnees who have spent decades in idleness and desperation in the IDP camps, difficult access to markets, and limited options for alternative livelihood opportunities⁴.

The 2011 projected population for the region is almost 3.4 million people (10% of the total Ugandan population). Worth noting is the rapid population growth rate ranging from 2.9% in Gulu to 5% in Pader⁵, and not more than half (51%) of the population is below 15 years of age (Figure 2). These factors produce a very high dependency ratio⁶, and also adversely affect the delivery and quality of social services, including the already overstrained basic health services.

Figure 2: Age Structure by Gender of Northern Uganda Population (source: UNDP, 2007)



⁴ United Nations Office for the Coordination of Humanitarian Affairs (UN-OCHA), Uganda Humanitarian Profile, 2011.

⁵ Uganda Bureau of Statistics (2002), "The 2002 Uganda Population and Housing Census, Population Size and Distribution," October 2006, Kampala, Uganda.

⁶ Uganda Bureau of Statistics (2010), Uganda National Housing Survey 2009/10.

THE HEALTH SECTOR

For the majority of the population who returned to their original villages, access to health services represents one of the crucial dividends of peace. According to the MOH, 72% of the households in Uganda live within 5 km from a health facility. Thanks to funding from the PRDP, there has been an effort to open new health facilities, renovating and making functional those that were damaged during the war with an aim to pursue the expansion of health services and to increase the population accessing them (Table 1).

Table 1: Number of Functional Health Facilities by Grade and District

District	2012 population	Hospitals	HC IV	HC III	HC II
Agago	295,286	1	-	8	26
Alebtong	226,458	-	1	5	11
Amolatar	128,237	1	1	3	7
Amuru	180,090	-	1	7	24
Apac	349,209	1	1	11	19
Dokolo	183,299	-	1	4	10
Gulu	399,096	14	12	14	44
Kitgum	274,482	12	11	18	9
Kole	232,358	-	1	14	6
Lamwo	142,520	-	2	8	12
Lira	403,961	1	3	10	12
Nwoya	54,338	1	-	3	15
Otuke	86,216	-	1	4	6
Oyam	379,017	1	1	5	18
Pader	228,528	1	1	12	16
Total	3,563,095	13	17	106	235

However, the increase in the number of facilities is yet to be matched by a proportional increase in staffing and equipment to make any meaningful mark on service availability and utilization. Utilization is also hampered by the lack of medicines and other health supplies, a shortage of human

resources in the public sector, low salaries, and lack of accommodation at health facilities⁷. Staffing levels are still grossly inadequate with only 51% of approved positions filled. Distribution of health workers in the country is also skewed to the disadvantage of the rural communities, with a large majority of doctors, midwives and nurses placed in urban settings. Multi-purpose health workers with different job responsibilities and task-shifting to lower cadres are common findings, especially in peripheral health facilities. The creation of new districts have exacerbated the issues, posing a serious threat to the maintenance of adequate staffing levels; new districts are often remote and lack the amenities and infrastructures needed to attract health workers, and district health team members are frequently provisional, not experienced for their position and sometimes lack the indispensable managerial skills needed to head a newly established health directorate.

Regarding the essential health indicators, the Northern Region—due to its insecurity and, consequently, its unreliable services—has lagged behind other regions, though the recent stability has led to considerable improvement in some regional statistics. The proportion of institutional delivery in the region is generally low, especially in rural areas. The Uganda Demographic & Health Survey (UDHS) 2011 preliminary report stated that in the Northern Region, 52% of deliveries occurred in a health center and 54% were attended by a skilled provider, compared with the national average of 57% and 59%, respectively. From the same report, the contraceptive prevalence rate is at 24% (national average 30%) while full immunization coverage stands at 49%, slightly lower than the national average of 52%.

Laboratory services have expanded and improved in the region. The majority (89%) of HC III and IV have the capacity to conduct the minimum tests expected to be performed at this level. However, of the 17 HC IVs in the region, only one (Aduku HC IV in Apac District) is fully functional in terms of infrastructure, equipment, supplies, and personnel and hence capable of performing caesarian section operations. This compares poorly with the national figure of 20% of HC IVs that are fully operational.

Poor access to water and sanitation coverage in the region—latrines are only accessible to 31% of the population compared with 71% nationally—has left populations susceptible to epidemics, as demonstrated by the persistence of the hepatitis E outbreak in Kitgum and the re-appearance of polio in Amuru. Emerging diseases (yellow fever) and new diseases (the still-unknown nodding disease) have recently hit the region, straining the health sector further and adding to the already heavy HIV & AIDS, TB, and malaria disease burden.

⁷ Ministry of Health, Health Sector Strategic Plan III, 2010/11-2014/15.

Epidemiological Profile of HIV, TB and Malaria Trends in Northern Uganda

HIV & AIDS

In Uganda, national HIV prevalence estimates have been derived primarily from sentinel surveillance among pregnant women that has gradually expanded to 29 sites. Meanwhile, the 2005 Uganda HIV & AIDS sero-behavioral survey (UHSBS) provided more accurate estimates on Uganda's adult population and specific groups. Results from the survey indicated that an average 6.4% of adult population is infected with HIV, with marked regional variations.

In Northern Uganda, HIV prevalence in 2005 was 8.2% of the adult population (9.0% among women and 7.1% among men). The higher prevalence than the national average was attributed to various factors: the long-standing conflict and its resulting displacement of populations; food insecurity leading to transactional sex; and sexual and gender-based violence (SGBV) and rape, all of which were compounded by lack of access to health care in the conflict-stricken areas. There was also some evidence suggesting that new HIV infections were disproportionately affecting the Northern Region, where a shift towards more risk-taking behaviors—particularly the increase in multiple concurrent sexual partnership and non-spousal sex and decrease in condom use—seemed to take place⁸.

Epidemiological evidence also showed that mutually monogamous heterosexual couples appeared to be the actual at-risk group where most HIV infections occur⁹. Data on recent infection indicated that Northern Uganda is home to a larger number of recent infections compared with other regions.

⁸Journal of American Medical Association, 2008;300(5):540-549.

⁹UNAIDS, Uganda Modes of HIV Transmission Analysis, 2009.

The risk factors mentioned above also coexist with the following gender-specific factors:

1. Sexual debut among girls occurs at a lower age than in the rest of the country;
2. Adolescent girls are likely to be married at young age, foregoing education attainments; and
3. Female literacy levels in the North are the lowest in the country, which impacts the ability of women and girls to negotiate sex, delay sexual debut, and ultimately avoid HIV infection; and
4. Domestic violence is seen as a social norm that is widely justified and tolerated¹⁰.

The relatively improved security in Northern Uganda and South Sudan resulted in the rapid development of the Kampala-Juba transport route, which has seen a significant increase in traffic in recent years. Increased sex work along the transport corridor has been observed with the existence of hotspots for transactional sex involving truck drivers and commercial sex workers¹¹.

In 2011, the Uganda AIDS Indicators Survey (UAIS) was conducted by the MOH to measure national and regional estimates of HIV prevalence and other relevant indicators about knowledge, attitudes, and behavior related to HIV. The provisional report indicated a reduction of HIV prevalence in Northern Uganda from 8.2% in 2005 to 6.9% (8.5% among women and 5.1% among men), close to the national average of 6.7%. Among other indicators, knowledge of modalities of mother-to-child transmission of HIV greatly improved and a notable reduction in the number of sexual partners was also found among respondents from the region.

Uganda pledged to virtually eliminate mother-to-child transmission of HIV by 2015. The current vertical transmission rate is 8% for mothers who access prevention of mother-to-child transmission (PMTCT) services, compared to 14% for non-users, nationally. The MOH recently decided to adopt a more efficacious PMTCT prophylaxis regimen in which pregnant women receive highly active triple drug anti-retroviral therapy (ART) from 14 weeks until one week after exposure to breastmilk has ended, and infants are given Nevirapine syrup for six weeks after birth. However, the overall coverage of PMTCT prophylaxis for HIV-infected pregnant women stands at 53%, with wide variations across districts.

¹⁰ Uganda Bureau of Statistics (UBOS) and Macro International Inc. (2007), Uganda Demographic and Health Survey 2006. Calverton, Maryland, USA: UBOS and Macro International, Inc.

¹¹ International Organization for Migration (IOM) HIV Hot-Spot Mapping and Situational Analysis along the Kampala - Juba Transport Route, 2008.

Based on the most recent MOH policy document, released in late 2011, ART for adults is recommended for patients in advanced clinical stages of the disease and whose CD4 cell count is below 350 cells/mm³. The recommended initial treatment regimen is a combination of non-nucleoside reverse transcriptase inhibitor with a nucleoside reverse transcriptase inhibitor backbone. In children between two and five years of age, ART eligibility is granted to patients in an advanced clinical stage or who have a CD4 percentage below 25%. Below two years, all children confirmed HIV-positive should be enrolled into ART.

The provision of HIV-related services, including ART, is gradually increasing in Uganda due to multiple actors supporting ART provision. The number of accredited ART sites increased countrywide from 110 in 2004 to 432 in 2011, of which a large majority is represented by hospitals and HC IVs. However, the treatment gap is about 40% of those in need, whose proportion is likely to increase with the more inclusive ART enrolment guidelines.

TUBERCULOSIS (TB)

Uganda is one of the 22 countries in the world with the highest TB burden. The annual risk of TB infection is estimated at 3% with an incidence of 330 cases per 100,000 for all TB cases and 136 cases per 100,000 for smear-positive pulmonary TB. The recommended first-line anti-TB treatment regimen comprises of a two-month initial phase of daily rifampicin, isoniazid, pyrazinamide, and ethambutol as fixed-dose combinations, and a 6-month continuation phase of daily ethambutol and isoniazid. All regimens are given under the community-based, directly observed therapy short-course (DOTS) approach to ensure treatment adherence and minimize defaulting.

No countrywide TB epidemiology survey has been conducted, therefore no sub-national prevalence estimates are available. However, it is believed that TB infection is also fueled by the escalating HIV epidemic. An estimated 50-60% of TB patients in Uganda are co-infected with HIV and similar figures apply to Northern Uganda. Approximately 1% of all new cases are estimated to be multi-drug resistant TB cases (MDR-TB), a proportion that increases to 12% among re-treatment TB cases¹². Re-treatment cases—either previous defaulters or relapses—could increase the occurrence of drug-resistant TB strains with limited option for testing, identifying, and treating them. As of 2012, all MDR-TB cases are being referred to Mulago National Referral Hospital for treatment, although the organization *Médecine Sans Frontières* (MSF) has recently started a MDR-TB treatment program in Lamwo District.

¹² World Health Organization, Global Tuberculosis Report, 2011.

The TB indicators have been faring well in the Northern Region although with some disparities across districts. Both case detection rate and treatment success rate have consistently been above the nationally-set targets. In 2011, the proportion of TB patients tested for HIV was 82% and the co-infection rate 54%, slightly higher than the national average of 80% and 53%, respectively.

MALARIA

Malaria remains one of the most important public health challenges in Uganda, causing significant morbidity, mortality, and economic loss. According to the 2008 World Malaria Report, Uganda ranked third in the world for total malaria deaths. Hospital records suggest that malaria is responsible for 30-50% of outpatient visits, 15-20% of admissions, and 9-14% of inpatient deaths¹³.

Malaria is also highly endemic in Northern Uganda (where 90-98% of cases are caused by *P. falciparum*) and it accounts for 34% of the disease burden of the entire population.

Some of the world's highest recorded entomological inoculation rates (EIR) (the number of mosquito bites per person per year) have been detected in Northern Uganda, particularly in Apac district. Apac district is also home to the only site in the region that participates in the Uganda Malaria Surveillance Project, specifically Aduku HC IV. According to the 2009 Malaria Indicator Survey (MIS), the prevalence of malaria and of severe anemia in children below 5 years of age in the region were 62% and 16% respectively, both higher than in any other region. The MIS reported that among children under 5 years with fever within the northern region, 47% took an anti-malarial drug the same day of the fever onset and of these, 22% took an artemisinin-based combination treatment (ACT).

The national malaria treatment policy introduced in 2005 recommended treating fever cases presumptively as malaria and indicates ACT as first-line choice for uncomplicated malaria cases. In 2002 the MOH initiated a national programme to improve home-based management of fever through distribution of drugs by trained community volunteers. In Northern Uganda, the programme took off successfully, especially in IDP camps setting. However, due to prolonged drug shortages and high attrition among community distributors, its implementation has dramatically declined and currently is not in place.

¹³Uganda Bureau of Statistics (UBOS) and ICF Macro. 2010. Uganda Malaria Indicator Survey 2009. Calverton, Maryland, USA: UBOS and ICF Macro.

The use of rapid diagnostic tests (RDTs) has been recently introduced to encourage clinicians to seek laboratory confirmation of malaria diagnoses. RDT utilization is generally growing but is still irregular and not guided by clear policy documents. Out of the 15 districts in the region, 10 (Amuru, Nwoya, Gulu, Kitgum, Lamwo, Pader, Agago, Apac, Oyam and Kole) have consistently benefited from Indoor Residual Spraying for vector control since 2007-08; more than 870,000 households were sprayed in 2011, covering an estimated population of 2,800,000.

Intermittent preventive treatment during pregnancy (IPTp) is administered as part of integrated antenatal care with directly observed treatment. According to the district-based Health Management Information System (HMIS) data, coverage of IPTp in the northern region stands at 50% in 2011, slightly higher than the national average of 43%.

Ownership of insecticide-treated nets (ITNs) seems to be better than in other regions, with 75% of households in the North owning at least one ITN and 55% having at least two. Consequently, the proportion of under-5 children who sleep under an ITN is also relatively high, standing at 65%¹⁴.

¹⁴ NUMAT, A Household Survey on Malaria, HIV & AIDS and TB Interventions in Nine Districts of Northern Uganda, 2010.



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OBJECTIVE 1: Improved Coordination of HIV & AIDS, Malaria and TB Responses

PROGRAMME HIGHLIGHTS

- ✓ Assisted **five** districts in HIV strategic plan
- ✓ Conducted community dialogues in **17** sites
- ✓ Supported **11** subgrantees

STRENGTHENING DISTRICT COORDINATION STRUCTURES

For almost two decades, the HIV response in conflict-affected Northern Uganda was hindered by the absence of functional, government-led coordination structures. Humanitarian and other development actors had no clear guidance on how to respond to the epidemic and those involved in HIV activities lacked coordination. There were generally no agreed workplans or set indicators, making it difficult to measure progress. District authorities across the region could not advise services providers, yet it was their statutory mandate to ensure that national and district HIV priorities were incorporated in all workplans of HIV & AIDS stakeholders.

Since its inception, NUMAT has worked in close collaboration with district governments in the region and with MOH and other USAID partners to implement project activities. Under the framework of the partnership, NUMAT built the technical and management capacity of districts to deliver organized services, reduce duplication among districts and other implementing actors, and promote accountability strategies by funding district-designed activities. The programme also helped districts to improve and broaden harmonization of HIV-related interventions by all providers, and developed side-by-side supportive supervision to strengthen district technical and management skills and identified common indicators to assess progress and accountability.

NUMAT conducted capacity assessments of HIV & AIDS coordination structures in the nine original districts to obtain useful information about programme deficits that needed to be addressed urgently. Weaknesses common to all districts included:

1. Routine coordination meetings were not held;
2. Lack of district HIV & AIDS strategic workplans;
3. HIV & AIDS coordination guidelines were not ratified; and,
4. Poor funding

All these factors contributed to ineffective coordination. NUMAT tackled these issues by providing both technical and financial support which re-activated District HIV & AIDS Committees (DACs) in each jurisdiction. Members were trained on their roles and responsibilities, met more regularly, and conducted field monitoring visits to HIV & AIDS activity sites as expected.

NUMAT focused on ensuring that all district HIV & AIDS activities were aligned with Uganda's commitment to the Three Ones Principles (one HIV & AIDS planning authority, one HIV & AIDS plan and one monitoring and evaluation [M&E] framework). Through an interactive and participatory process and in collaboration with Uganda AIDS Commission (UAC), the programme supported five of the original nine districts (Kitgum, Dokolo, Pader, Gulu and Amuru) to develop five-year HIV & AIDS strategic plans, while the Uganda AIDS Commission pledged to assist the remaining districts, including those that were newly established. This process involved bringing together all HIV & AIDS stakeholders in the districts for an initial sensitization workshop where Government of Uganda HIV policies and the National HIV & AIDS strategic plan were discussed. District-specific HIV & AIDS situational analysis was undertaken; a SWOT (strengths, weaknesses, opportunities, and threats) analysis of HIV & AIDS district response was conducted; and detailed HIV & AIDS service mapping was carried out. The final stage of the strategic plan development was approval by the district local council, which confirmed the document as an official district policy document.

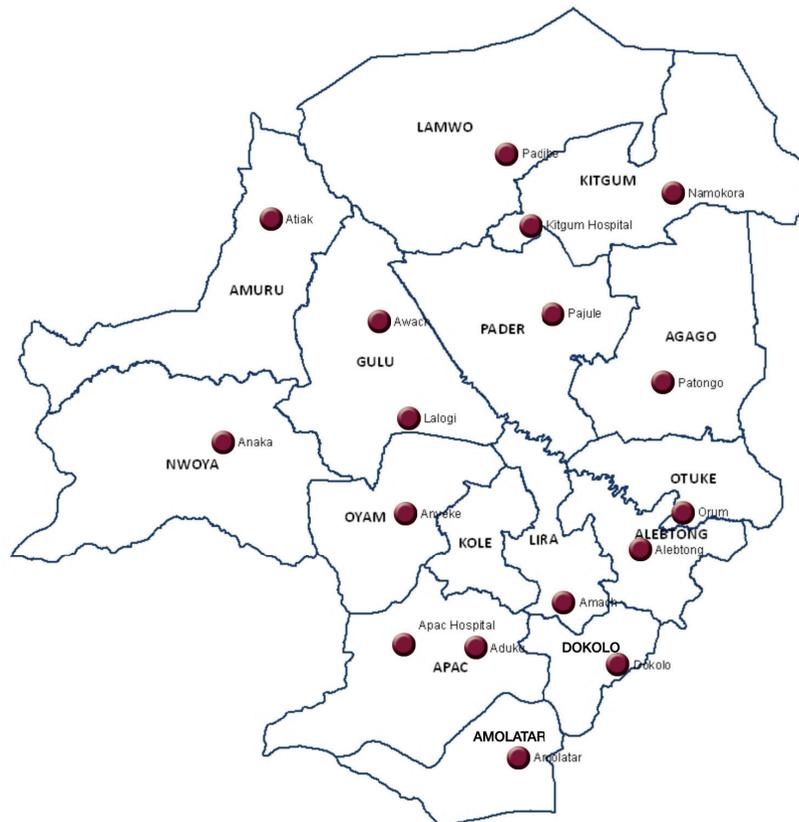
Some positive effects of the strategic planning process on effective HIV & AIDS coordination of have already been noted: districts are more willing to hold and participate in meetings and HIV & AIDS events; local government investment priorities for HIV & AIDS have become clearer; HIV & AIDS mainstreaming activities were well articulated in district and sub-county development plans during budget conferences; and, ultimately, access to HIV-related services has improved.

The most enduring aspect of the strategic plan, however, is that it represents a benchmark for preparing workplans by most HIV & AIDS service providers, contributing to more harmonized and coordinated efforts.

NUMAT programme intervention was as much as possible aligned to the national and district health systems both in terms of policy direction, technical guidance and methods of work. The programme worked with MOH to provide on-site support supervision of service delivery; with the District Health Team (DHT) to plan, implement and supervise programme activities at the district and facility level; and with community level structures (such as the Health Unit Management Committee [HUMC]) and local authorities to enhance good governance and social accountability and to strengthen the linkage between communities and the health system.

As a result of this initiative, community dialogues that promoted discussion between HUMCs, health facility staff and respective communities took place in 17 health facilities within Lango and Acholi sub-region (Figure 3).

Figure 3: Health facilities with NUMAT-supported community dialogue meetings



Management issues were openly discussed and ways forward agreed upon by community members, local leaders, and health facility staff. Some of the areas included human resource constraints such as absenteeism, poor motivation, staff behavior, low qualification, and number of staff. Others were managerial issues: inability to reliably manage medicines and other supplies; inadequate data management; lack of infrastructure; and poor equipment maintenance and medical waste management. At each facility, priority areas were identified and subsequently translated into implementation plans by the facility staff, district local governments, and partners like NUMAT.

Despite the initial slow start and skepticism on the effectiveness of the community dialogues in improving performance, some initial benefits have been found. For example, at the Anaka Hospital, health workers who had never accessed payroll are now getting their salaries regularly and those whose performances were not assessed have now received their formal appraisal and confirmation. Pajule HC IV now has running water and an improved sanitation system, while Aboke HC IV has registered a remarkable improvement in team work methods, as attested by interviewed community members.

STRENGTHENING AND ENGAGING CIVIL SOCIETY ORGANIZATIONS (CSOS)

Civil society participation, particularly by PLHIV, in HIV & AIDS activities in the region has been constrained due to the absence of strong district networks, internal organizational weaknesses, and limited funding. NUMAT placed emphasis on strengthening PHA networks through a process of organizational assessment, which led to the development of strategic plans and development of internal systems and structures to improve delivery of services for their members and widen opportunities for partnership with government programs such as PRDP, National Agricultural Advisory Services (NAADS) and other external donors.

NUMAT also built the capacity of the Lango Religious Peace Forum and Acholi Religious Peace Initiative, both faith-based organizations that have HIV & AIDS as a component in their activities. NUMAT provided technical assistance to undertake an organizational self-assessment and develop a five-year strategic plan with a focus on mainstreaming HIV & AIDS prevention.

In order to expand and scale up HIV/AIDS services to the most vulnerable and marginalized sections of the targeted communities, NUMAT provided grants to community-based organizations (CBOs) and international non-government organizations (Annex 3). These included: Health Alert, Samaritan

Purse, and Child Fund, which were brought on to support the needs of children living with HIV; Medical Teams International and Straight Talk Foundation, which provided HCT services to underserved fishing communities and youth respectively in selected districts; Marie Stopes Uganda, which targeted sex workers and commercial motor-cycle riders for HIV prevention in urban settings; AIDS Care, Education & Training, which worked with married couples, and Food for the Hungry International with sexually abused women. Grantees were shortlisted and selected based on an administrative and field process to assess their financial soundness, programmatic capacity, previous experience and appropriate staffing. During the grants' implementation, NUMAT staff periodically provided technical support on finance, data, and programme management to all grantees.

Challenges

The creation of new districts meant that new relationships had to be built with the new district leadership, and resources for supporting coordination structures had to be spread across the new entities. Some of the most urgent issues identified during the community dialogue meetings, such as late delivery of drugs, inadequate staffing, and low remuneration of health workers, were beyond the capacity of the health units to address.

Lessons Learned

Working within the national and district health system paid important programmatic dividends. The way NUMAT was designed made it possible to use and benefit from the pool of available technocrats at both national and district levels. This was an advantage in securing the necessary political leadership for effective coordination and mobilization of communities in participating in NUMAT-supported activities.

Partnering with CBOs and NGOs through sub-granting has not only led to expansion and scaling up of services, but played a role in fostering NUMAT's local legitimacy and building capacities of the CBOs themselves. Health Alert won contracts for bigger HIV & AIDS projects while Straight Talk Foundation succeeded in submitting proposals for projects funded by the Civil Society Fund.

Transforming Local Institutions for Securing the Future: the Experience of Kitgum District Forum of People Living with HIV & AIDS

Kitgum District Forum of People Living with HIV & AIDS (KIDFOPHAN) is a community-based coalition of 3,370 people living with HIV & AIDS (PLHIV). It was established in 2006 to act as an advocacy platform for PLHIV as well as a conduit to supply PLHIV with information and resources to better their lives.

Kenneth Onekalit Latigo, the coordinator of KIDFOPHAN, says that since NUMAT began working with them in 2007, the Forum has become more visible and respected in the district. In the last five years, it has built partnerships with 12 local and international NGOs. Over 182 trained volunteers drawn from KIDFOPHAN members have been providing home-based care and peer support both in homes and HIV clinics. The volunteers have reached over 21,500 PLHIV with these services and they are easily identified in their villages for their compassion and empathy.



Onekalit says that their advocacy efforts have so far reduced incidence of ARV stock-outs at Government clinics, availed education scholarships for young positives, and have benefitted over 38 PHA groups that now receive support from the Government social action fund for improving livelihoods. The Forum is now registered legally and is housed within the district offices in a brand new structure that was renovated by another USAID project.

Onekalit credited NUMAT for the shift in PLHIV culture from dependence to empowerment. Since 2007, the forum has also been able to raise over 140,000,000 shillings (\$55,000) to fund its advocacy and administrative costs. *"This is a much more sustainable approach whose benefits will be reaped by families of PLHIV long after NUMAT has ended,"* Onekalit explained. As NUMAT prepares to close, the coalition is confident that KIDFOPHAN will continue to grow and successfully advocate for the rights of PLHIV in the district and beyond.



OBJECTIVE 2: Increased Access to and Utilization of Quality HIV & AIDS, TB, and Malaria Prevention and Treatment Services

HIV COUNSELING AND TESTING SERVICES (HCT)

HIV counseling and testing (HCT) is a vital component of the response to the HIV epidemic and it represents the entry point for accessing HIV prevention, care, treatment and support. The benefits of knowing one's HIV status applies to everyone, regardless of their HIV sero-status. It helps HIV-negative individuals adopt preventive behaviors and remain uninfected; and it assists PLHIV to cope with their condition, gain entry to care and treatment, and improve their quality of life and survival.

However, the 2006 Uganda Demographic and Health Survey (DHS) indicated that in Northern Uganda only 29% of adult women and 21% of men had ever tested for HIV and less than 15% had done so in the 12 months prior to the survey. Based on these findings, NUMAT worked with the existing structures in the public and private-not-for-profit sectors and within the national policy framework to expand access to HCT services by scaling them up at a lower facility level. The scale up was initially implemented at HC IIIs and subsequently at selected HC IIs.

This was done through a combination of integrated activities that included: extensive training of health workers, laboratory personnel and HIV counselors; regular supply of laboratory consumables and buffer stocks of HIV test kits; provision of logistics management tools like registers and clients' cards; targeted technical supervision and coaching conducted by both MOH officials and regional and district trainers; quality assurance through proficiency testing and retesting of ransom samples at the Uganda Viral Research Institute; and sustained information and sensitization of communities through radio programs and distribution of IEC materials.

PROGRAMME HIGHLIGHTS

- ✓ Supported **112** sites providing HCT
- ✓ **975,704** people tested and received test result
- ✓ **1,454** health workers trained on HCT

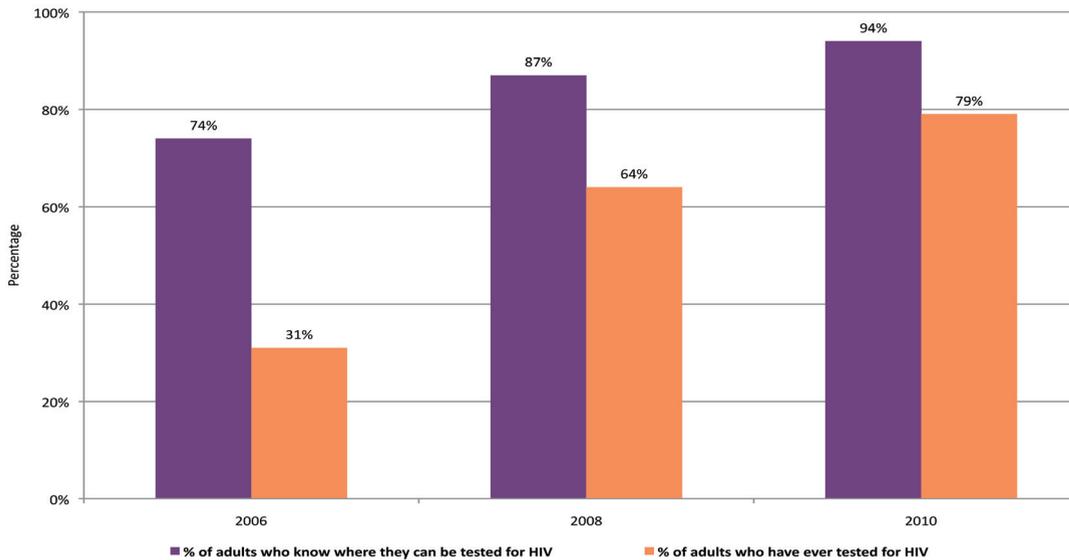
Concurrently, out-sourced HCT outreach services were delivered in hard-to-reach and underserved areas by CBO partners after adequate mobilization. High risk groups were also targeted through outreach activities. These groups included IDPs (when camps still existed), mobile fishing communities, truck drivers along main highways, commercial sex workers (CSWs), boda-boda riders in urban settings, and prison inmates. People in mutually monogamous relationships were also reached with counseling and testing services during specially designed couple conferences organized by NUMAT-supported faith-based organizations (FBOs). Outreach HCT services were provided by selected grantees with previous HCT experience: NGEN+ targeted IDPs, Straight Talk Foundation focused on youth, while AIC and later MTI concentrated their efforts mostly in the Lango sub-region where the HCT coverage among adult population was found to be substantially lower than in the Acholi districts.

Mid-way through the programme, NUMAT incorporated an additional approach to HCT, shifting from the client-initiated voluntary counseling and testing (VCT) to provider-initiated HIV counseling and testing (PITC), which was instituted in eight of the highest volume sites in the region (six hospitals and two HC IVs). After training health providers and creating coordination teams in all PITC sites, NUMAT, in collaboration with national trainers and district health officials, supported monthly review meetings at each PITC site, quarterly technical supervision and mentoring of all staff involved to ensure their adherence to national standards and protocols in the delivery of PITC.

HIV counseling and testing services became an essential component integrated into other NUMAT interventions within the community, including safe male circumcision (SMC), cervical cancer screening, events such as World AIDS Day, youth-related activities such as sports and cultural galas, and inauguration camps for opening of newly accredited ART centers.

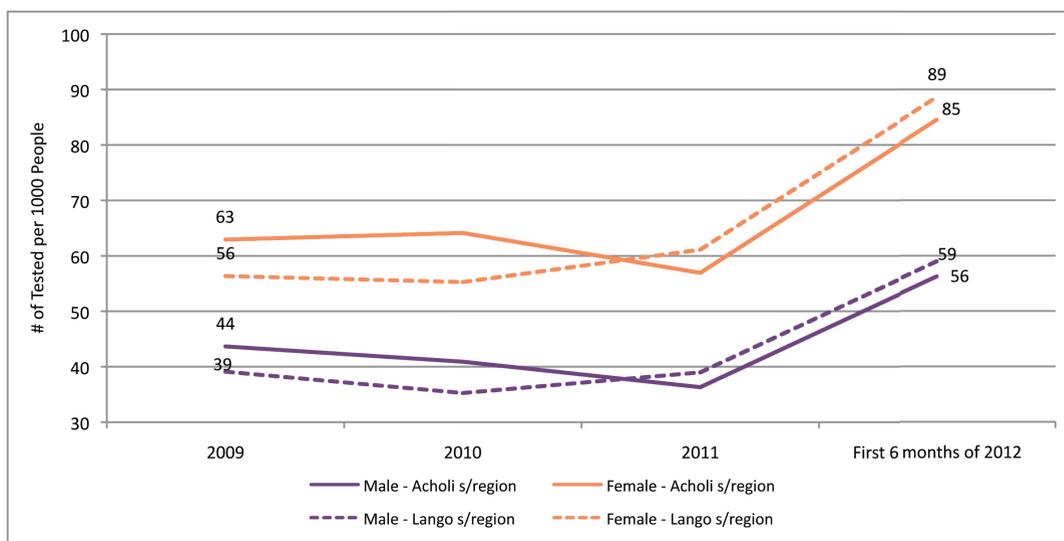
As a result of the multi-pronged NUMAT intervention, HCT services have become more accessible to the population and its uptake has steadily increased, as indicated by the analysis of lot quality assurance sampling (LQAS) survey data (Figure 4). Multiple factors may have contributed to this achievement: new HCT units were opened; outreach activities were maintained through the fifth year of programme implementation; and people were better informed about the benefit of being tested for HIV and the locations of service providers. As public demand for HCT services increased, it was readily met by uninterrupted availability of HIV test kits and related consumables at all testing points, as well as the prompt availability of follow-up treatment and care for those who tested HIV positive.

Figure 4: Percentage of Adults Who Know an HIV Testing Site and Who Tested for HIV One Year Prior to the Survey, 2006-2010



This positive trend in increased access and utilization of HCT is also confirmed by health management information system (HMIS) data from the NUMAT-supported sites. From 2009 to 2011, static HCT sites at facility level performed about 160-170 thousand HIV tests each year among people aged 15-49 years across the whole region. The same output steeply improved in 2012, with almost 130,000 tests administered among the same age group in only six months, increasing the rate of HCT provision among people aged 15-49 years from 108 to 161 per 1000 population. The trend did not show any particular difference between the two sub-regions; however, across the years this rate was significantly higher among female than male, which confirmed a gender-based service utilization pattern (Figure 5).

Figure 5: Adults Tested for HIV per 1000 Population at Static Sites by Sub-Region, 2009-2012



Challenges

At the beginning, NUMAT was only expected to provide health facilities with buffer stocks of HIV test kits, while the bulk of procurement responsibility would fall to MOH and National Medical Store (NMS). Over the years, due to the inefficiency of the NMS-led supply chain, the share of NUMAT-procured items has increased in both quantity and frequency. This may cast doubt on the capacity of the health system to provide uninterrupted supplies of essential consumables and to sustain the complete functionality of HCT sites in the long term.

Outsourced HCT outreach activities are very useful since they save time and labor from under-staffed facilities. However, it is also an expensive exercise to carry out. It requires dedicated staff, transport, adequate community mobilization and sufficient supplies. For this reason, it may not be affordable for the public sector to take over the HCT outreach model in increasing the HIV testing coverage.

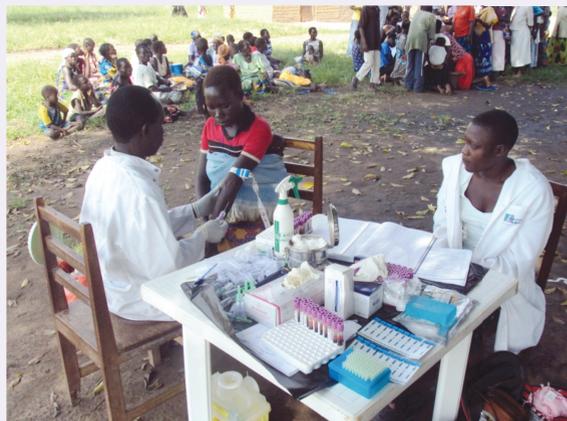
Lessons Learned

NUMAT was capable of adopting suitable HIV testing approaches for the different target groups: it brought outreach activities up to the landing sites for the mobile and otherwise inaccessible fishing communities; conducted “moonlight” HCT sessions in the evening hours when most commercial sex workers can be reached; it included HCT in the couples’ conferences organized by religious congregations for their members; and it eventually incorporated HCT into the SMC package.

Voluntary counseling and testing clinics remain a focus for HCT in the hospitals, but PITC dramatically increased the numbers tested for HIV and linked to care, as all patients, caretakers, and others visiting the hospitals for any illness were identified and given the opportunity to test. The PITC strategy appeared to be particularly efficient in detecting HIV-positive children—especially those under the age of five years—compared with client-initiated VCT. HIV prevalence among children below five years tested in PITC setting was 14.2% compared to 9.6% among VCT clients from the same age group, a statistically significant difference. A likely explanation is that HIV-infected sick children have a higher probability of accessing curative services for childhood-related diseases, thus a higher probability of receiving a routine HIV test in PITC-implementing facilities.

A Low Level Health Center Expands Access to HIV Counseling and Testing through Outreaches in Agago District

Integrating HIV testing services with other outreach activities has proved to be an effective way of increasing HIV counseling and testing (HCT) coverage. Offering HCT at informal gatherings in the community reaches far more people with these services than offering HCT at clinics alone. HCT outreaches serve individuals that, for whatever reason, do not visit health clinics, they are easily accessed by testers, and offer the same level of confidentiality and quality as services offered in clinics. Furthermore, outreach settings carry a reduced stigma and are less likely to cause anxiety or fear over discrimination and test results.



Lira Palwo Health Center III, a NUMAT-supported site in Agago district, has adopted outreach activities to increase community access to HCT. The staff at the health center recognized that individuals are more likely to test when testing sites are closer to where they live. The outreach team is comprised of two trained health workers from the health center (one laboratory assistant and one nurse) and four-six trained Village Health Team members. Outreaches are conducted on market days twice a week and in schools, parishes and villages where individuals gather for their trade. Because of the reduced stigma inherent in the outreach, in four months, Lira Palwo HC reached 503 individuals through static HCT and 1,535 through outreach activities—a statistic which unequivocally demonstrates that successful outreach activities can be effectively conducted by lower-level health facilities with proper training, mobilization, and adequate supplies.

PREVENTION OF MOTHER-TO-CHILD TRANSMISSION (PMTCT) OF HIV

Mother-to-child transmission accounts for more than 20% of all HIV transmission in Uganda and almost all HIV infections in children below five years of age. Based on the 9.1% HIV prevalence among women in the region and on the approximately 5% deliveries occurring annually in the population, the estimate of HIV-positive pregnancies in Northern Uganda in 2012 is about 9,600. This would result in over 3,000 additional HIV-infected babies without any PMTCT intervention.

NUMAT established and sustained its PMTCT intervention, mainly targeting HC IIIs and those facilities serving the returning communities. Its scope gradually increased from 60 sites supported at the early stages of the programme to 102 sites in PY 5. In the districts of Pader, Kitgum, Agago and Lamwo, NUMAT implemented PMTCT services in partnership with AVSI through a grant provision that lasted for nearly the entire duration of the programme.

At all supported sites, NUMAT's focus was on training health workers on the new PMTCT-ART policy guidelines following subsequent policy revisions; providing of buffer stocks of HIV test kits; orientating health workers on the use of standard operating procedures (SOPs) to ensure adherence to standards; and supplying integrated registers and other HMIS tools to capture and submit relevant PMTCT data.

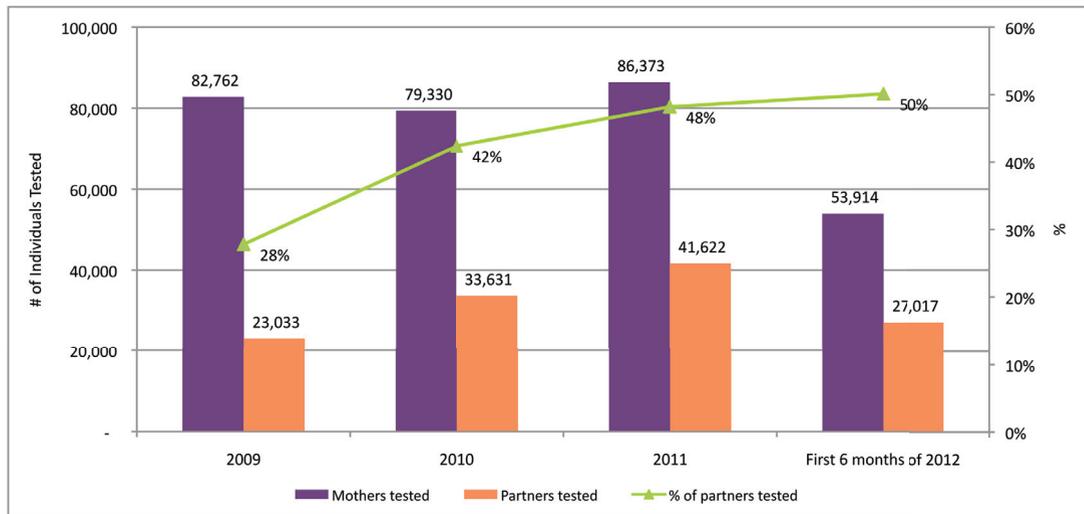
The almost universal access of pregnant mothers to ANC care coupled with the shift from client-initiated to provider-initiated "opting-out" testing strategy were decisive advantages towards improving the PMTCT coverage. However, one of the main obstacles facing pregnant mothers in their uptake of the complete PMTCT services cascade was fear of being abused or rejected by their husbands after disclosing the test result to them. Therefore, male involvement in the whole range of PMTCT activities was also a crucial element towards more widespread acceptance of the service.

Husbands and partners of pregnant women were sensitized and encouraged to accompany their spouses during ANC visits and to test with them. In 2012, half of the partners tested for HIV (Figure 6), a remarkable improvement over the 28% recorded in 2009. However, there is still much work to be done to engage men in ANC and PMTCT activities.

PROGRAMME HIGHLIGHTS

- ✓ **413,085** mothers tested for PMTCT
- ✓ **18,218** HIV+ mothers given ARV for PMTCT
- ✓ Over **5,000** new HIV infections averted

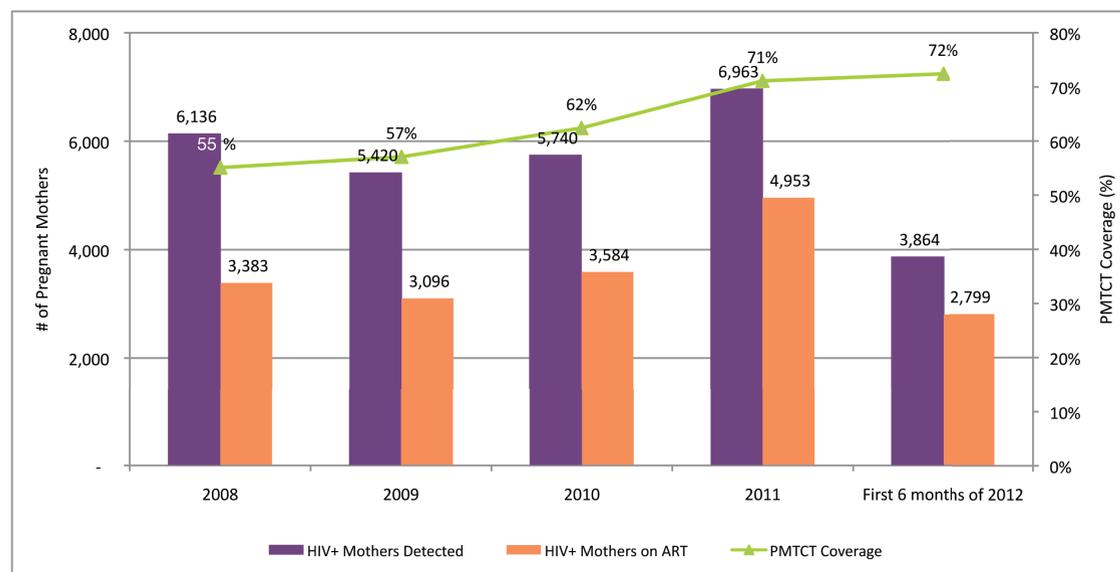
Figure 6: Mothers and their Partners Who Tested for HIV at NUMAT-supported Sites, 2009-2012



While monitoring PMTCT indicators across programme years, it was noted that detection of HIV-positive mothers was not always followed by their enrolment into ARV prophylaxis. In addition, more HIV-positive mothers were lost to follow-up prior to completion of the whole continuum of care and far before their babies reached 18 months of age.

In order to mitigate this problem, NUMAT introduced a cadre of community structures named Peer Mothers. These were HIV-positive women formerly enrolled into PMTCT programs that were trained to help with follow-up of fellow HIV-positive pregnant women as well as mother-baby pairs. Some of these peer mothers were also members of the VHT. Peer mothers seem to have contributed to a higher number of HIV-positive mothers accessing PMTCT services, hence increasing the service coverage (Figure 7). They were also critical in addressing the HIV-related stigma and discrimination within communities that can negatively influence overall PMTCT uptake.

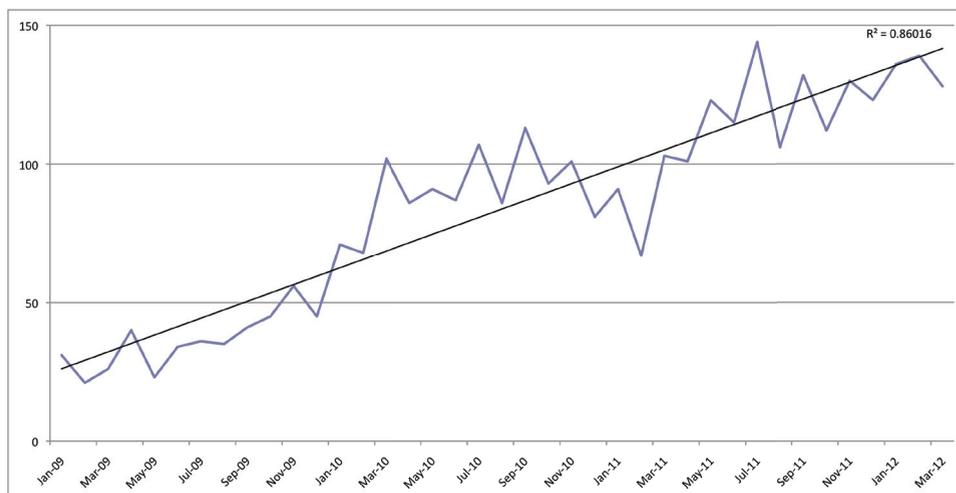
Figure 7: Number of HIV+ Mothers Enrolled on PMTCT and Intervention Coverage, 2008-2012



NUMAT also put emphasis on the PMTCT-ART collaborative activities, mostly in the NUMAT-supported ART sites. These included WHO clinical staging and CD4 count tests for pregnant women, HAART initiation for HIV-positive eligible clients, and combination prophylaxis regimens for the others. These interventions were made universally available at 34 NUMAT-supported ART sites and in seven additional PMTCT sites in Apac district through an outreach with Cnapsis.

CD4 tests presented higher accuracy in assessing the progress of HIV infection than the WHO clinical staging (see box page 36), and the number of CD4 tests among pregnant mothers significantly increased from 2009 according to linear regression analysis conducted (Figure 8). This was in line with the ultimate objective of providing more efficacious PMTCT regimens to the mothers in order to more radically reduce the probability of HIV vertical transmission to babies.

Figure 8: Number of CD4 Tests for Pregnant Women at NUMAT-supported Sites, 2009-2012



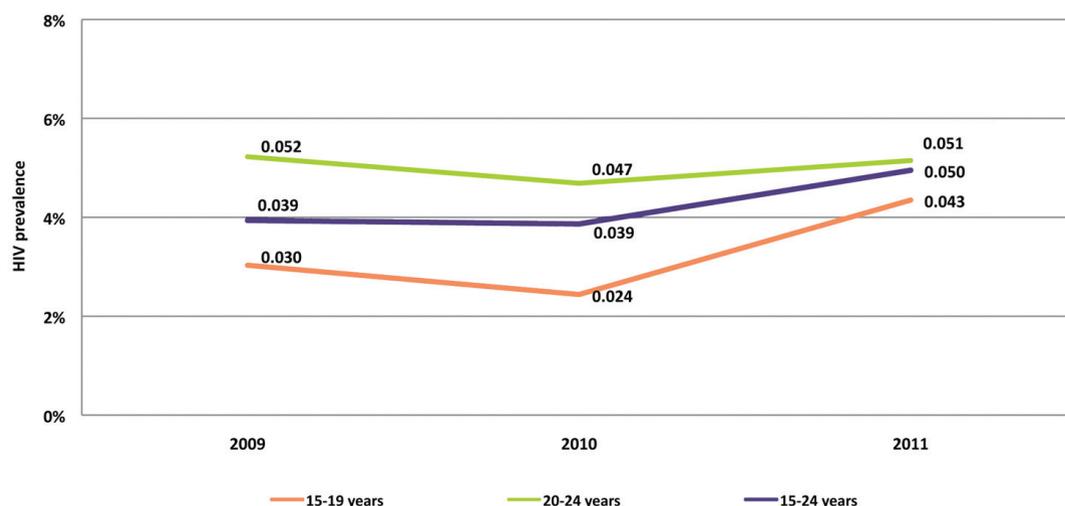
Early infant diagnosis (EID) of HIV represented a core component of NUMAT PMTCT support through the capacity building of health workers. CHW were oriented on the fast-evolving national policies through training, coaching and periodic support supervision. District Laboratory Focal Persons (DLFPs) were the critical personnel to expand and sustain EID activities. During their supervision of laboratory units, NUMAT offered them logistical support to transport dried blood spot (DBS) samples from health units to stipulated central laboratories and return results to the units on a regular basis. Cumulatively, by April 2012 16,913 HIV-exposed infants had been tested for HIV, of which 1,648 (9.7%) were found HIV-positive. However, the HIV prevalence among HIV-exposed infants dropped from 12.1% in 2008-09 to 8.6% in 2010-12 as a result of increased PMTCT scope and coverage and use of more efficacious PMTCT prophylaxis regimens.

Adopting the PEPFAR-designed MTCT rate calculator¹⁵, it is realistic to estimate that over 5,000 new HIV infections were averted over the course of NUMAT's implementation through provision of PMTCT services among the sites supported by the project.

¹⁵ The President's Emergency Plan for AIDS Relief (PEPFAR): Indicators, Reporting Requirements, and Guidelines. Indicators Reference Guide FY2007 Reporting/FY2008 Planning, July 2007 (pp 156-7).

One last undertaking of NUMAT was to determine the trend of HIV prevalence in the region through a sentinel surveillance system at 15 selected PMTCT sites. Facilities were strategically selected from high-volume health centers grade III and IV in rural, urban and semi-urban settings. Data were collected retrospectively from the facilities' antenatal register on HIV test results for 15-24 year-old pregnant women at their first ANC visit (to avoid possible recounting) for the June-August quarters of three consecutive years (2009-2011). In total, over 3,000 15-24 year-old pregnant women who underwent ANC visit and HIV testing were included for each year of the study period. The median HIV-prevalence for the 15-24 years group was at 3.9% in 2009 and 2010 and then increased to 5.0% in 2011 (Figure 9), though the increase was not statistically significant. The same trend was noted for the two age subgroups (15-19 and 20-24 years) in both urban and rural settings. Using these data as a proxy for new HIV infections, the figures seem to contradict the preliminary findings of the 2011 UAIS and, instead, indicate a slight increase in HIV occurrence. However, this result needs to be triangulated with other sources and eventually corroborated by similar evidence.

Figure 9: Median HIV Prevalence Among 15-24 Years ANC Clients from 15 Sites, 2009-2011



Challenges

Stock outs of ARVs for PMTCT created a severe problem for several facilities, especially during the transition from one regimen policy to the next. Organizational weaknesses affected both the facility-based process of timely ordering of the right quantity of items from the central store and the regular availability of sufficient stocks to procure all needed drugs at National Medical Store level.

The frequent change in the national PMTCT policy guidelines had a negative influence on both implementation and reporting of PMTCT activities across the region. This was particularly felt when the training of health workers was conducted in several lots within a long time frame. While the trained facilities adopted the recently recommended prophylaxis regimens and new reporting formats, the yet-to-be trained facilities lagged behind, thus generating logistical and reporting setbacks.

Lessons Learned

In lower-level units, which were NUMAT's main focus of intervention, health workers responsible for providing ART services also offered other vital and related services, including PMTCT. This promoted a deeper level of service integration and higher demand for and utilization of the available services within the community.

Although the initiative was realized only during NUMAT's last implementation year, the use of Peer Mothers was recognized as a promising practice for the future. They were well accepted in their communities, inspired confidence and trust among their fellow mothers and were instrumental in disclosing HIV status within their clients' families and promoting better adherence to PMTCT intervention.

Providing CD4 Count Tests to All HIV-infected Pregnant Mothers Ensures a More Effective PMTCT Intervention

Four ART-accredited facilities in Apac district (one hospital, two health centers grade IV and one health center grade III) offered regular provision of CD4 testing for pregnant women and health workers were encouraged to include CD4 testing for newly identified HIV-positive pregnant mothers.

In the last two years, 469 HIV-positive mothers were enrolled in CD4 testing, although CD4 test results and WHO staging were available only for 339. When CD4 test results were compared with WHO clinical staging statuses, it was evident that some mothers eligible for highly-active ART (HAART) due to their advanced degree of immuno-depression (as revealed by low CD4 count) would not receive treatment if clinical judgment was based only on their clinical assessment (see table below).

Specifically, 50% of mothers whose CD4 count result is below 350/mm³ (thus eligible for HAART) were found to be of clinical stage one or two, which would have made them ineligible for a more efficacious PMTCT regimen. These data indicate that use of clinical staging for deciding whether to prescribe HAART has a high specificity (93%), but a very low sensitivity (50%).

Association between WHO staging and CD4 cell count test in 339 pregnant mothers

		WHO STAGING		TOTAL
		1 & 2	3 & 4	
CD4 CELL TEST RESULT	<350	57 (50%)	57 (50%)	114 (100%)
	>350	209 (93%)	16 (7%)	225 (100%)
TOTAL		266 (78%)	55 (22%)	339 (100%)

Utilizing CD4 test for choosing the PMTCT drug regimen is a more reliable approach and helps identify those clients with advanced immunological depletion whose clinical conditions are still well preserved.

PROGRAMME HIGHLIGHTS

- ✓ **16,575** active ART clients supported
- ✓ **75,299** CD4 tests carried out
- ✓ **50,777** PLHIV provided with septrin

CARE, TREATMENT AND SUPPORT SERVICES FOR PLHIV

People living with HIV can lead relatively normal, productive lives if they can access appropriate health care. The care should include on-going psychosocial support, opportunistic infection prophylaxis and management, pain and symptom management, referral services for other needs and, most importantly, highly active antiretroviral therapy. It was only after WHO/UNAIDS launched the three by five initiative that Ugandans were able to access free antiretroviral treatment.

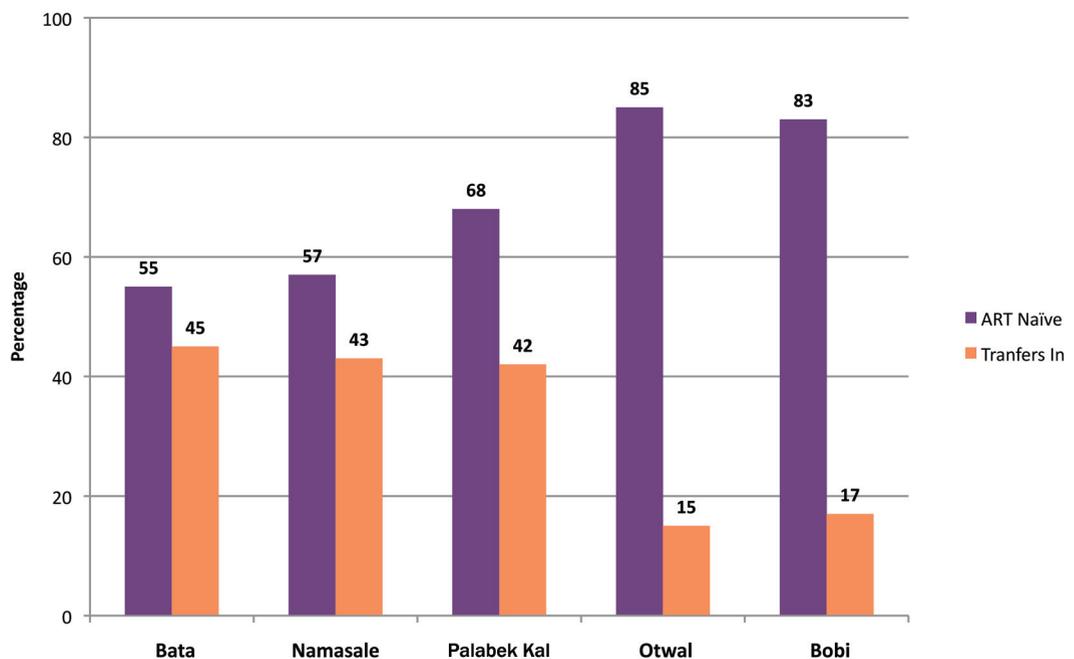
By 2005 HIV care services in Northern Uganda were available at the two referral hospitals of Lira and Gulu, at the district hospitals of Kitgum, Anaka and Apac, and at five missionary hospitals. By 2006, the AIDS Control Programme had accredited 11 Health Centre IVs in Northern Uganda. Most of the health units providing HIV services were peri-urban and served mainly IDP camp dwellers. At the time, HIV services were heavily supported by relief organizations whose programming was implemented within the context of crisis management and would not necessarily follow the National HIV treatment guidelines. Therefore, within the same geographical area, various HIV treatment and care protocols were used, different training curriculum for health workers was administered, and a variety of standards of care were followed. Again, the confirmation of eligibility and prescription of HAART, clinical assessments, and follow up were the responsibilities of a doctor. The doctor also chaired a vetting committee that would select patients for the limited slots available for HAART. Vetting used a set of criteria that included clinical staging (CD4 tests were barely available) as well as the potential of an individual to adhere to medication.

NUMAT commenced in October of 2006 with an objective of enhancing access and quality of HIV treatment and care for the people of Northern Uganda, a majority of whom were returning to their homes following a lull in the prolonged conflict. The Programme had the intention of taking HIV care services to the remotest of places while maintaining the quality of the services provided. The proximity of clinics to the communities they served was to be utilized to enhance care, dispel stigma and discrimination, and promote adherence to treatment and retention among clients. Achieving these objectives would be a daunting challenge, given that services were to be offered primarily through the crippled public health care system: many lower-level health facilities were far flung, dilapidated years of abandonment, lacking in space for additional services, and deficient in human resources and functional administrative structures. The quality of ART services in government-run health facilities was characterized by frequent stock outs of ARV drugs and other essential supplies, lack of CD4 monitoring, and inadequate client counseling, follow-up, and adherence support.

In collaboration with the MOH, NUMAT responded to the situation by working with HIV focal persons from the nine DHT to select existing and potential lower-level ART sites for support from the NUMAT programme. In the early stages, the potential/new sites still required accreditation by the AIDS Control Programme. Many of the new sites selected were HCIIIs—health units that, in general, were situated at sub-county level with an average population of about 20,000 individuals. Once accredited, sites would co-opt select staff members for site HIV treatment teams. The team members would then undergo training and subsequent mentorship in MOH-compliant HIV treatment and care inclusive of HAART management, logistics, and data management. The programme would provide the clinic with diagnostic instruments and treatment guidelines.

The new HIV clinics were officially launched by with a NUMAT-run “integrated service camp”, a community event that featured music, dance and drama performances, at which communities in the catchment area were sensitized about the newly-available ART services in the vicinity, and were provided HCT, PMTCT, and malaria services alongside HIV prevention messages. The occasion was characterized by a number of men, women, and children testing for HIV and receiving results. Pregnant women would also access PMTCT and malaria services and a number of people would register at the HIV clinic for treatment. A significant proportion of the clients registering at the new clinic on the day of launch and for the next couple of months were transfer-ins, coming from other ART clinics (Figure 10).

Figure 10: Percentage of ART Naïve and Transfer-in Clients at Newly Accredited HC IIIs, 2009



Before the advent of NUMAT, the proper running of HIV services in the region was hampered by frequent stock outs of ARV drugs, cotrimoxazole, and other drugs used for opportunistic infection management. USAID had planned for the NUMAT programme to buffer the ARV drug supply by the government-run NMS. However, from 2010, due prolonged shortages of cotrimoxazole at the clinics, USAID granted a request by NUMAT to extend the buffer arrangement to cover cotrimoxazole as well. Three rounds of PEPFAR-sourced cotrimoxazole supplies for HIV prophylaxis were distributed to all the NUMAT-supported sites over the last two years.

The handling of the PEPFAR-sourced ARV drugs was guided by an elaborate procurement and distribution plan put together by NUMAT after extensive consultations with MOH, SCMS, NMS, JMS and other stakeholders. The plan guided the collaboration between SCMS, JMS, and NUMAT in the near-flawless handling of PEPFAR-sourced ARVs from April 2008. The NUMAT procurement and distribution plan was deliberately designed to mirror the system adopted by the government-run

NMS, which predetermined the drug formulations, logistics management systems, reporting and supply cycles. This was a calculated attempt to ensure that the government supply chain system was strengthened rather than denuded by NUMAT's involvement. To this end, a NUMAT in-house drugs logistician teamed up with other pharmacists from the MOH to provide on-going training and mentoring for health workers.

As NUMAT approached its close, a transition strategy has been adopted to ensure the continued supply of ARV drugs for PLHIV in Northern Uganda. The NMS is to assume a central role in providing ARV drugs to all government run ART sites that were previously supported by PEPFAR through the NUMAT project. However, the only private-not-for-profit ART site supported by NUMAT at PAG HCIV in Lira will continue receiving PEPFAR supplied ARV drugs through the Joint Medical Stores. NMS has opened a regional coordination office in Gulu to ensure that it plays this critical role more efficiently. In the same vein, the 15 districts have strengthened their supply chain management activities by developing an active drug logistics teams at DHT level that can now promote, support and improve ARV drug supply chain management at the ART sites, also collaborating with SURE in the four of the region's districts where it operates.

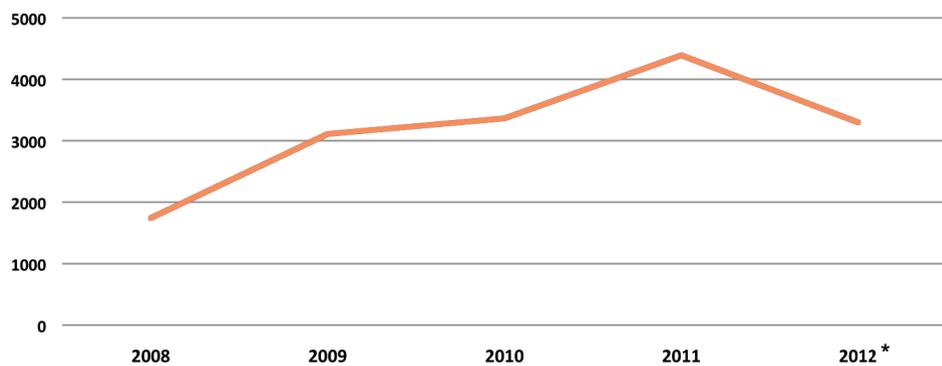
The ARV drugs provided through NUMAT were adult formulations and the training and mentorship curricula focused primarily on HIV management in adults. NUMAT, therefore, had to make special considerations for HIV-positive children. In 2009, through collaboration with the Baylor College of Medicine, children less than 14 years were provided tailored HIV treatment, care and support. The collaboration also ensured that 250 health workers received specialized training in pediatric HIV care.

However, in 2010, PEPFAR spearheaded a nationwide rationalization process that saw NUMAT take on a more central role in pediatric care in Northern Uganda. NUMAT continued mentoring health providers in pediatric care, and provided playground equipment for the sites. NUMAT worked with The Clinton Foundation to ensure that ARV formulations for children as well as reagents for free CD4 testing for children were availed. NUMAT also offered small grants to select community-based organizations in order to ensure consistent follow-up for children living in more remote communities. By the end of the project, NUMAT was supporting 8,663 children below 18 years of age in care (13% of all clients in care within NUMAT-supported sites) and 1,001 children with ARV treatment, a number that represents 6% of all clients in treatment.

In 2006, most clients were initiated onto HAART after clinical staging. At the time, only about 11% had received a baseline CD4 test. The MOH had a long-standing plan to buy CD4 machines for the ART treatment sites that had yet to become reality. However, the region was already in possession of a few functional CD4 machines at the referral hospitals, but, due to poor maintenance, erratic supply of reagents, and unreliable power, the machines were not being put to optimal use. As an interim solution, NUMAT designed the NUMAT CD4 outreach project, a private-public partnership between NUMAT and a private laboratory services company. CNAPSIS was contracted to make scheduled visits to 34 ART sites to take patients' blood samples, transport samples to laboratories for analysis, and return results. By end of project a total of 75,299 CD4 had been carried out.

Due to the widely available CD4 testing and the change of the MOH policy for initiating ART at a higher level of CD4 count, the number of new clients enrolled by NUMAT-supported sites increased steadily during the programme life (Figure 11).

Figure 11: Trend of New ART Clients Enrolled in NUMAT-supported Sites, 2008-2012



*Data for first 6 months of 2012.

In the HC IIIs, a single health worker had to multi-task, manning the HIV clinics as well as supporting several other critical health facility duties. The HIV treatment guidelines changed continuously, requiring clinicians and their mentors to be regularly retrained. Support supervision was another integral part of the process, and NUMAT regularly collaborated with pundits from the AIDS Control Programme and the district local government to conduct quality assurance visits at treatment sites. Human resource constraints were generally addressed by task-shifting and offering various forms of motivation. Because medical officers were not readily available, technical tasks were transferred to clinical officers and senior nursing staff. More menial duties like patient triage, counseling and data management were shifted to nursing assistants and PLHIV volunteers.

Expert clients became a reliable constituency of health care providers supporting HIV care through the years; they were able to offer prevention services, general care, psychosocial, and spiritual support to patients at their homes. Formal referrals were made for HIV services that home-visitors could not provide.

Network Support Agents were also crucial to programme operations; agents were selected by the PHA forums at sub-county level and relieved the few overburdened health workers manning the ART sites by taking on patient triage and basic group counseling. NSAs would also provide follow-up care with clients in their homes. The success of the CD4 outreach project relied heavily on the involvement of NSAs to ensure that clients returned to the treatment sites to access their test results and receive appropriate care (Odaga, 2010). Over the course of the project, approximately 46,000 clients have been reached with HIV services by NUMAT-deployed expert clients and Network Support Agents.

To ensure that the health workers worked in concert with medical staff at the clinic, NUMAT directed the formulation of a Treatment Support Team. The team was developed as a resource for quality improvement and brought together network support agents, health workers and other health providers to discuss and improve the quality of care at health facilities. The collaboration was designed to effectively synthesize the data collected by the different factions: the NSAs provided up-to-date reports on the status of clients in their respective communities, which included information on people not adherent to treatment, those transferring out of treatment, and those that had died; health workers provided updates on action points previously identified for redress; and NUMAT provided logistical and technical guidance for these meetings. These meetings were crucial in harmonizing the efforts of the various treatment providers in the catchment area.

Challenges

The lack of a stable team of health workers at the clinics was a constant challenge throughout NUMAT's six-year existence. Health workers deployed to man the HIV clinics were offered an expensive 14 day training package followed by on-going mentorship. However, high attrition rates at clinics ultimately affected the quality of services

NUMAT's mandate was to provide a buffer of ARV drugs to the treatment sites. However, due to the greater efficiencies of ARV drug procurement and distribution by NUMAT, health facilities became reluctant to make orders to the national medical stores. The transition to NMS supply is expected to be wrought with hiccups that need to be tacitly addressed.

Lessons Learned

Through effective collaboration between partners, NUMAT was able to provide efficient, uninterrupted services to HIV-positive clients in Northern Uganda. Lower-level health facilities proved to be the most efficient conduit through which to reach remote populations with integrated services. The key to the success of these community-based facilities was delegating the responsibility of service referrals to expert clients, health workers, and NSAs. Scaling up HIV services at the lower-level health facilities also eased the burden on high volume sites, permitting them to concentrate on serving more complicated referral cases.

Bringing Antiretroviral Treatment to the Most Remote Populations: NUMAT-supported ART Service Scale-up at HC IIIs Level

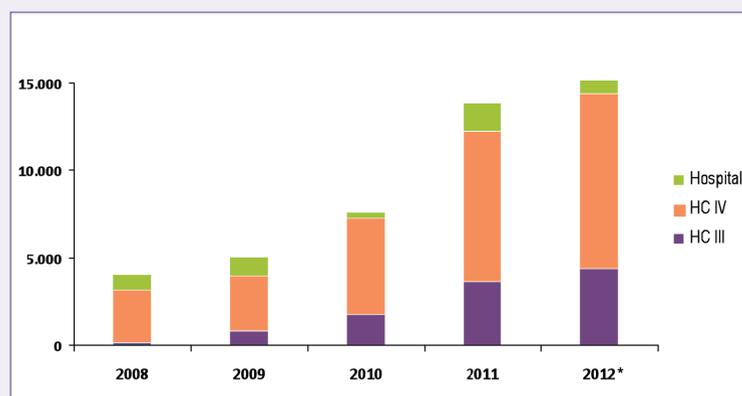
Starting in early 2008, NUMAT assisted selected HC IIIs to receive government accreditation for ARV distribution through on-site visits and assessment conducted by MOH officials. To ensure a consistent supply of ARVs, NUMAT procured ARV drugs to health centers directly. ARVs were completely free of charge for the patients, irrespective of drug regimen and combination.

Health workers at the facilities were trained on clinical management of HIV patients, including ART initiation and follow-up; and on ARV supply chain logistics and data management. NUMAT furnished the facilities and supplied needed equipment and materials to properly store ARVs and keep appropriate records.

Between October 2008 and April 2012, more than 24,000 CD4 tests were conducted across the 14 HC IIIs in the region. Availability of CD4 tests resulted in increased uptake of testing, improved clinical care, and more accurate timing for ART initiation. During the same period, 4,071 new ARV clients were enrolled, of which 244 (6%) were pregnant women and 326 (8%) children below 14 years of age.

The proportion of clients active on ART followed at HC III level increased from just 3% in 2008 to 26% in 2012 (see Figure).

Trend in ART Active Clients by Level of Facility, 2008-2012



Both ARV enrolment and CD4 testing numbers indicate that the clinics at HCIII level steadily increased service provision. At the same time, through staff training, health workers felt more knowledgeable, useful, and better equipped to address the needs of their community.

*Data for first 6 months of 2012.

PROGRAMME HIGHLIGHTS

- ✓ Refurbished **28** laboratory units
- ✓ Sponsored **26** students for pre-service lab course
- ✓ Supplied equipment to **75** facilities

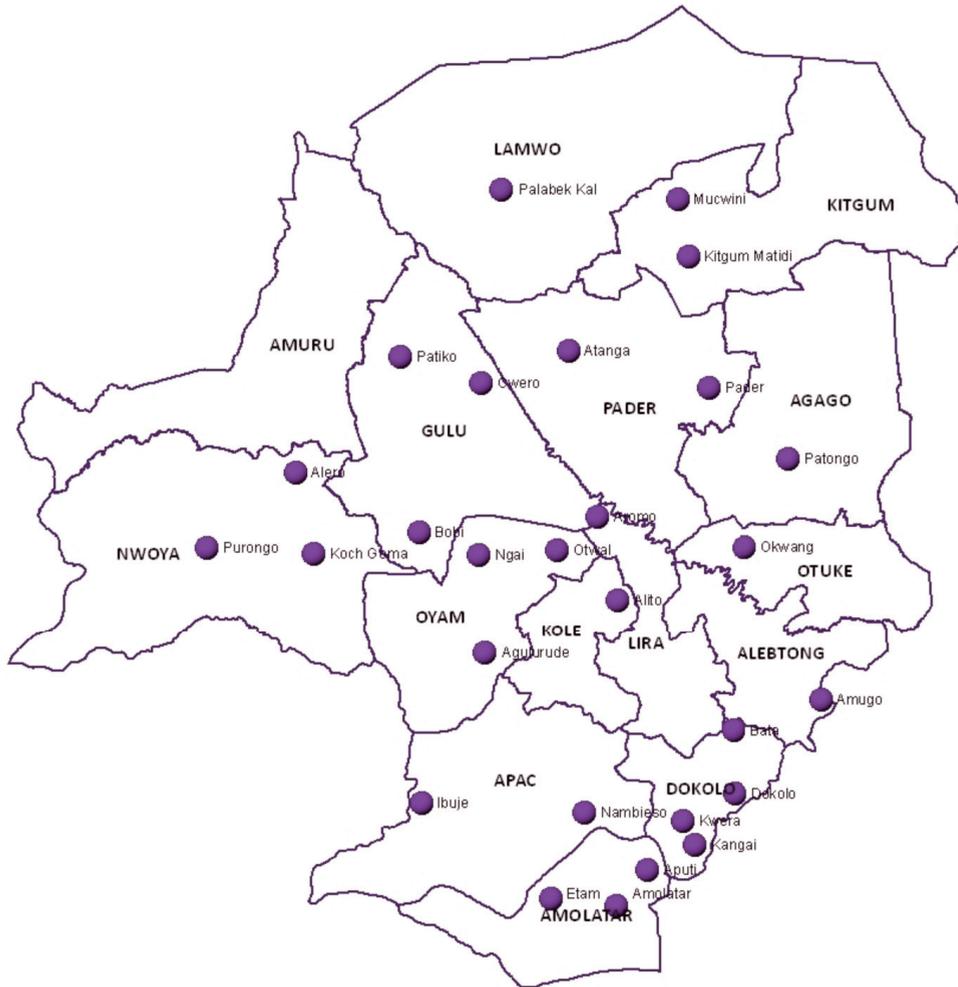
LABORATORY SERVICES

Accurate and reliable diagnosis is paramount for appropriate treatment. Laboratory services play a critical role in disease control programs by providing the bulk of available diagnostic techniques and are indispensable in health care delivery. A reliable and well-organized laboratory not only generates timely and accurate information for individual patient management but also to disease surveillance and control. In the delivery of the Uganda Minimum Health Care Package that includes services for HIV, TB, and malaria, laboratory services are the most easily available and cost-effective diagnostic techniques.

NUMAT's interventions in improving laboratory services focused broadly on infrastructure development, provision of essential equipment and consumables, training, and quality assurance activities.

After conducting an initial assessment of the existing laboratory infrastructure in 2007, NUMAT identified 28 health facilities (26 HC grade III and two HC IV, Figure 12) to benefit from renovation and expansion of laboratory infrastructure and provision of counseling rooms to ensure space, privacy and confidentiality as well as to decongest the frequently crowded outpatient department. All essential amenities like water, power, and adequate ventilation were incorporated in the refurbishment works.

Figure 12: Distribution of the 28 Laboratory Units Refurbished by NUMAT

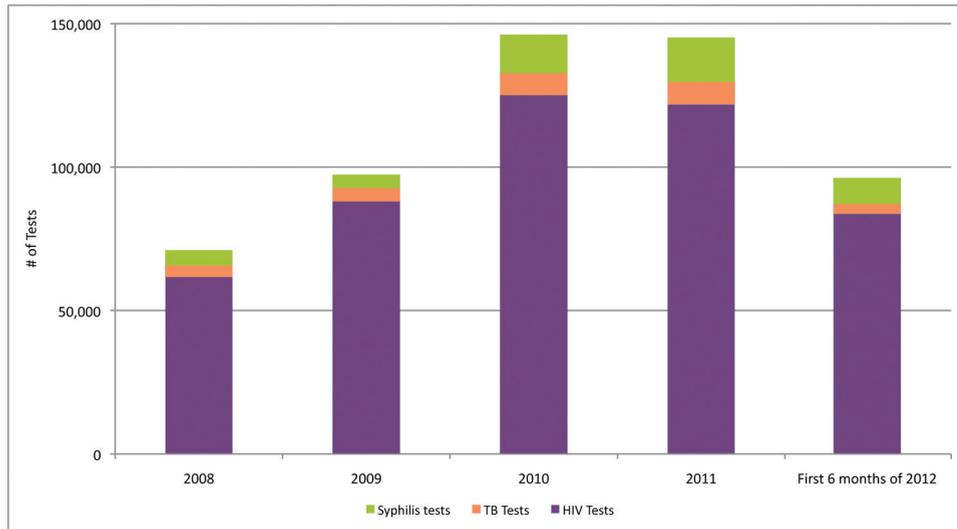


Essential selected equipment including microscopes, centrifuges, refrigerators, autoclaves, hematology and chemistry analyzers, stoves, water filters, and assorted glassware were provided to 75 facilities to meet the minimum standards set by the MOH. In-service training for laboratory personnel and other health workers, and pre-service training in laboratory courses, as well as laminated standard operating procedures (SOPs) to enhance performance of laboratory tests were distributed to 68 health unit laboratories together with other reference text materials.

Twenty-six students were sponsored for a pre-service laboratory course to increase the availability of qualified laboratory personnel in peripheral health units. After successfully completing their course, they were expected to be absorbed into the workforce and retained for two to three years as per the bond agreements signed with the districts before sponsorship. Of the 26 students, 22 were contacted nine months after completion to determine their employment status. The majority (77%) was found to be working at their original sites, though some as mere volunteers; conversely, only six of them had applied for the few vacant laboratory positions that were advertised so far and were still waiting for short-listing and interviews.

Among training activities, extensive in-service training of laboratory personnel was used to keep them abreast with laboratory techniques and procedures, while clinicians were also orientated on rational utilization of laboratory services to encourage them making more accurate diagnosis with the help of laboratory tests. The orientation of clinicians was critical in saving the health system from drug wastage and sparing patients the consequences of unnecessary treatments.

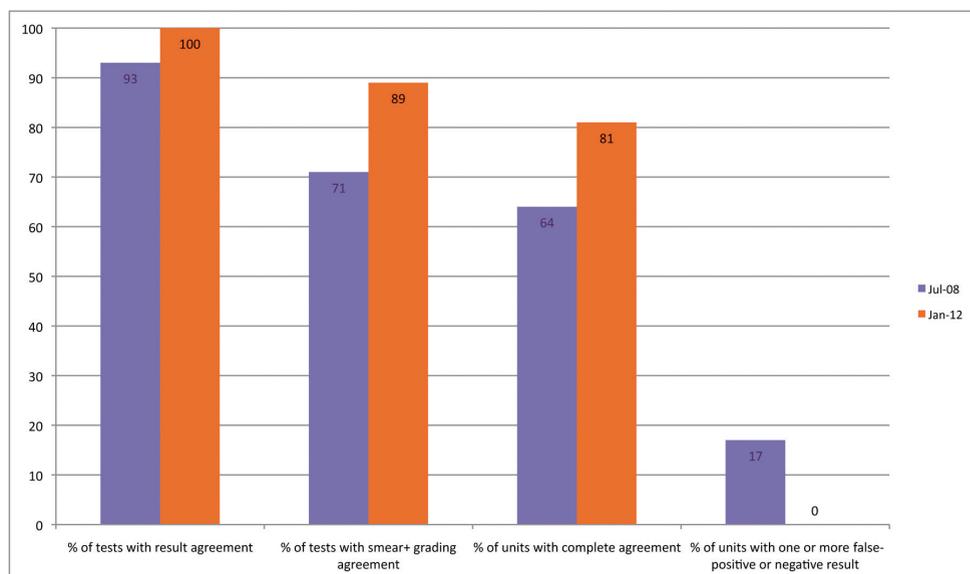
As a result of this comprehensive intervention, the provision of laboratory tests by the NUMAT-supported HC IIIs—which benefited from most of the programmatic investments—increased steadily as shown by Figure 13 (the 2012 data are for 6 months only).

Figure 13: Number of Basic Laboratory Tests Performed at HC III Level, 2008-2012

Comprehensive, integrated quality assurance (QA) activities were conducted throughout the NUMAT lifespan using support supervision, on-site training and mentorship, proficiency testing of quality control materials, and blinded re-checking of stored slides and samples. This was initially conducted by central supervisors from the Central Public Health Laboratory of MOH, accompanied by the respective district Laboratory Focal Person; subsequently, the latter assumed more responsibilities and in the last two rounds of support supervision they took lead, thus enhancing the sustainability of this intervention.

When compared with July 2008 when the activity started, the final round of support supervision conducted in 2012 saw the number of participating laboratories increasing from 36 to 112, of which almost 80% were lower level facilities. Some of the main findings of the proficiency test activities conducted on TB samples are summarized by Figure 14. Overall, a marked improvement in the general performance of the laboratories was registered; particularly noteworthy is the absence of samples whose reading gave either a false-negative or false-positive result. This demonstrated that better techniques were now employed in preparing slides as well as an improved ability to read them.

Figure 14: Comparison of TB Proficiency Indicators at First and Last Round of Supervision



After creating awareness among health staff and district official on the crucial issue of safe medical waste disposal, NUMAT provided 100 health units (HC III and above) with consumables for health care waste management (HCWM), such as color-coded bins and liners, heavy duty gloves, aprons, gumboots, and wheelbarrows. In addition to that, waste pits were built in ten facilities and incinerators installed in five high-volume facilities (Anaka and Apac hospitals, and Orum, Dokolo and Amolatar HC IVs), where health workers were mentored in their use.

Challenges

Stock-outs of laboratory supplies and reagents—particularly HIV test kits—due to weaknesses in the operation of the MOH-based credit line system for laboratory supplies has severely affected the performance of laboratory services within the whole region.

Despite NUMAT's efforts, inadequate staffing levels still afflict the majority of facilities, as also demonstrated by the low rate of absorption of the 26 sponsored students. Most districts are unable to fund the recruitment process for qualified laboratory staff despite the availability of vacancies.

Lessons Learned

Regular laboratory-specific support supervision visits were a useful way to assess laboratory functionality, monitor the existence and functionality of basic equipment, the availability and supply of reagents, and review the submitted data. Constantly using the District Laboratory Focal Persons helped in standardizing the approach, building a meaningful rapport between supervisors within the district health team and peripheral staff, and promoting greater district ownership and involvement in strengthening laboratory services.

Disposing of Medical Waste through NUMAT-installed Incinerator at Anaka District Hospital

Management of medical waste has been a serious public health dilemma for health facilities in Northern Uganda; the increasing amount of medical waste has overburdened the few sites available for adequate, safe disposal.

Medical waste includes infectious materials (blood and other body fluids), harmful objects (syringes and sharp objects), and any toxic chemicals. NUMAT recognized the need for controlled disposal of waste through improved storage, collection, treatment, and disposal of medical waste. On 17 March, 2012, NUMAT presented the Anaka Hospital in Nwoya district with a new incinerator for quick, safe disposal of medical waste.

Okello Francis, the custodian in charge of medical waste, collects and safely disposes over 8 kilos of hazardous medical waste from the hospital's seven departments. Before the incinerator was installed, Okello disposed of medical waste by burning it in a dug-out pit—an environmentally unsound method that produced uncontrolled, sometimes toxic smoke. Furthermore, the hand-built fire pit did not burn hot enough to turn waste completely to ash, meaning that even after undergoing the unsafe method of disposal, some waste still existed.

The new incinerator allows burning at scheduled days and provides storage in a lockable cage, which makes the waste inaccessible to wild animals. Okello says that the incinerator has made his job much easier. Now, he is able to safely collect and store the waste, and burn it completely into ash in just two hours.

Overall, NUMAT installed incinerators in five high-volume sites to better manage collection and disposal of hazardous medical waste.



TB SERVICES AND TB/HIV COLLABORATIVE ACTIVITIES

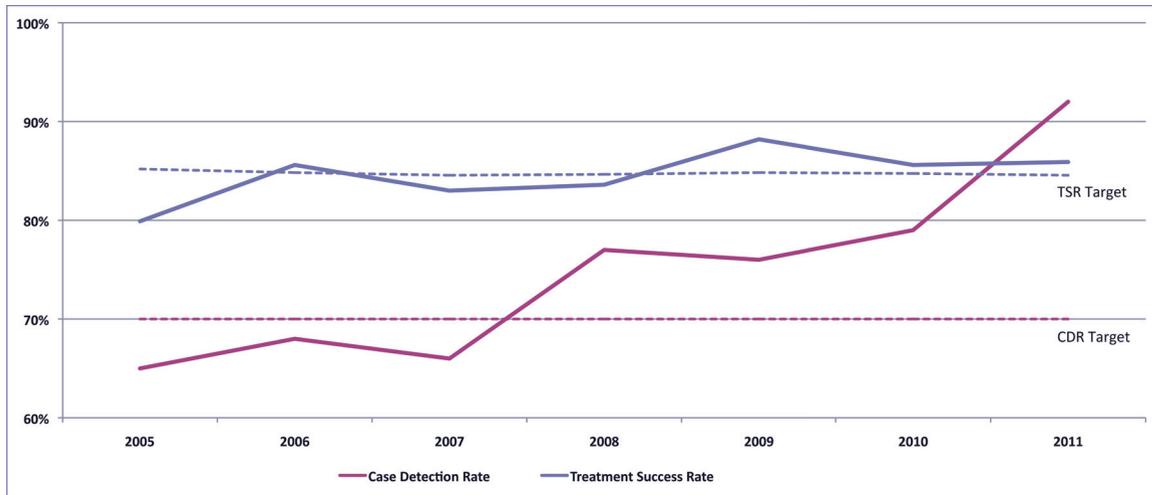
In Northern Uganda, almost 8,500 new tuberculosis (TB) cases are expected to occur every year, of which 50% are smear-positive. Support to creating a network of reliable sputum microscopy is one of the five components of the DOTS strategy recommended by WHO to combat TB. Since adoption of this strategy, Uganda has been working hard to improve the quality of the community-based (CB) DOTS and to develop a system whereby a TB Diagnostic and Treatment Unit (DTU) would be placed at every HC III.

With programme activities focus mainly on lower level facilities, NUMAT embraced the National TB/Leprosy Control Programme (NTLP) structure at district level, comprising of the District TB/Leprosy Supervisor (DTLS) as the reference person of all district-based TB activities; the Sub-County Health Workers (SCHWs) as the link between TB patients and the facilities; and the TB treatment volunteers as the village-based implementers of CB-DOTS. Furthermore, at regional level NUMAT worked side-by-side with the Zonal TB/Leprosy Supervisor (ZTLS), who received adequate logistic support to conduct regular support supervision and quarterly meetings. The supervisory role of the zonal office gained more relevance through review of district performance in TB/HIV integration, re-distribution of drugs to facilities nearing stockouts, and delivery of TB/HIV integrated service IEC materials. Also, the presence of all zonal stakeholders the review meetings allowed for greater harmonization of approaches, eased transfer of patients, tailored-approach to challenges, and quick identification and tracking of defaulters.

Initially, NUMAT was mainly involved in the training of health workers in CB-DOTS and logistics management system, combined with regular support supervision. Later, additional emphasis was placed on sensitization of community members to increase participation in active TB case finding through early detection and referral of TB suspects. This was achieved while sustaining supervision and providing technical assistance on data recording and reporting. Subsequently, NUMAT efforts went on to include training on TB/HIV collaborative activities, including co-management of the dual infection and TB/HIV data collection and analysis.

As a result of its intervention, NUMAT achieved some notable achievements. Out of the 133 health facilities supported by the Programme, all 92 HC IIIs are now DTUs for TB services. TB control indicators for the region have consistently been near or above the nationally-set targets for notification and treatment of cases (Figure 15).

Figure 15: TB Case Detection Rate and Treatment Success Rate in the Northern Region, 2005-2011



Regarding TB and HIV co-infection, an estimated 50-60% of TB patients in Uganda are living with HIV. Therefore HIV prevention, diagnosis, and care should be a concern for the NTLP, while TB care and prevention should be a priority for the National AIDS Control Programme (ACP).

Before 2006, in Uganda TB and HIV were vertically managed by two distinct programs within the MOH, with different funding sources, different staff operating in detached departments, different schedules of drug orders and procurement, and different recording systems. Although the national TB/HIV policy guidelines were introduced in 2006, implementation of integrated TB/HIV activities was minimal. Most of the recommended services were implemented at the discretion of different clinicians attending to TB and TB/HIV co-infected patients, many of whom were not confident in managing the co-infection.

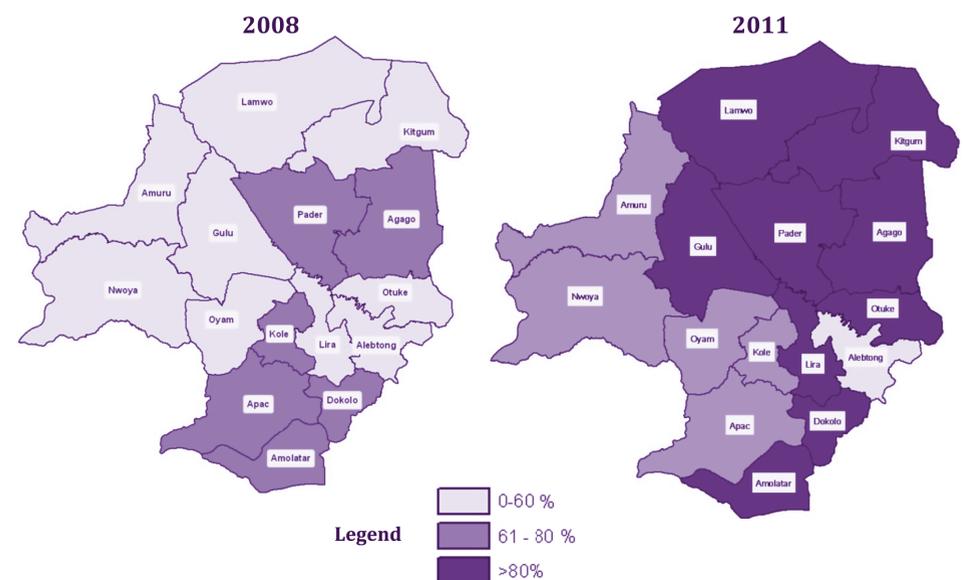
The need to integrate TB/HIV services was critical in order to address TB infection and disease in HIV patients and HIV burden among TB patients. As an entry point into strengthening TB/HIV

collaboration, NUMAT understood the need to bring on board the political, religious, technical, and PLHIV leadership. In total, 320 district leaders participated in sub-regional dissemination workshops to sensitize on the TB/HIV guidelines and communication strategy documents, newly developed by the MOH.

In addition to social mobilization, TB/HIV integration practices were put into place in health facilities. District-based trainings were held for 270 clinicians on TB/HIV co-management, documentation of TB/HIV data using predetermined monitoring tools, and implementation of TB infection control practices at health facilities. Intensified TB case detection was subsequently introduced in all NUMAT-supported HIV clinics through administration of a TB symptom questionnaire to waiting patients and TB suspects were then fast-tracked to minimize time spent at the health facilities and the likelihood of TB transmission to PLHIV and health care providers.

NUMAT provided support to strengthen drug logistics management at district level through the training of 75 health workers from the 15 districts in drug logistics management and the delivery of cotrimoxazole orders to NMS on behalf of the facilities. It also dramatically improved laboratory services—including TB laboratory diagnosis—through capacity building, infrastructure development, provision of equipment and supplies, and quality assurance activities recently taken over by the District Laboratory Focal Persons who became responsible for conducting support supervision and TB proficiency testing to all their sites.

This intervention has consistently contributed to making HIV counseling and testing services widely available at all TB diagnostic and treatment units and increasing the rate of TB patients tested for HIV across most districts and well beyond the national target of 80%, as shown by data derived from the district TB quarterly reports (Figure 16).

Figure 16: Percentage of TB patients Tested for HIV by District in 2008 and 2011

Moreover, the proportion of TB/HIV co-infected patients put on cotrimoxazole preventive therapy and of those initiated on ART, as recommended by the current TB/HIV co-management guidelines, increased from 50% and 13% in 2008 to 93% and 35% in 2011, respectively.

Equal emphasis was given to prevention, identification, and proper management of TB cases among PLHIV receiving HIV chronic care at NUMAT-supported facilities. Policy documents on ART provision were subsequently revised by the MOH and TB patients were recognized as a priority group eligible for ART enrolment, even in the absence of a CD4 test count result.

The effect of this continuous improvement in service delivery may persist even after NUMAT phases out because sufficient technical capacity has been built at both the district and facility level. Also, the involvement of all stakeholders, especially local leaders, the community members, other partners, and sub-county health workers will strengthen the sustainability of TB/HIV services.

Challenges

Uninterrupted supply of good quality anti-TB drugs is one of the five pillars of the DOTS strategy. However, Northern Uganda, like the whole country, has suffered from acute shortage of anti-TB drugs that jeopardized both the enrolment of new patients and the adherence of current patients to treatment. Additionally, insufficient or erratic supply of other essential items like HIV test kits, laboratory reagents, and cotrimoxazole has partially hampered the efforts of testing all TB patients and protecting the co-infected ones with CPT.

The standardized coding used in compiling the TB register is hardly ever error-free, especially at facilities with large caseloads. This makes data collection and patient cohort analyses challenging. High staff turnover rates and the few instructions given to low-level personnel delegated to fill in the registers are among reasons for inadequate record keeping.

Lessons Learned

Support of district and zonal-level performance review meetings provided an avenue for tracing and harmonizing TB patient transfers across TB treatment centers in the 15 NUMAT-supported districts and inter-district health facilities, respectively, optimizing patient follow-ups and treatment adherence.

The revised National ART Treatment Guidelines provided greater consideration for the co-management of TB and HIV and was simpler for health workers at lower level health facilities (e.g., HC IIIs) to comprehend and implement in that setting. Additionally, the availability of both TB and ART services at lower-level health facility found fertile ground for service integration in units where multitasking was already common place.

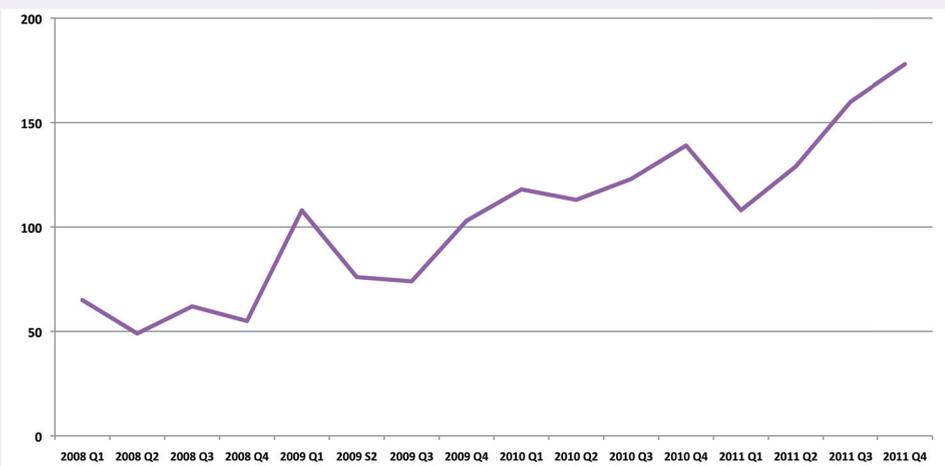
Increasing TB Re-treatment Cases May Pose a Threat to Successful TB Control Programme in Northern Uganda

TB re-treatment cases are known to pose a significant challenge to TB control programmes due to clinical complexity, challenges related to treatment default, potential drug resistance, and poor- outcomes.

In Northern Uganda, re-treatment cases have surged from 231 in 2008 to 575 in 2011—an increase of 150% ($p < 0.001$). The ratio of re-treatment cases to new TB cases also increased from one TB re-treatment case for every 19 new cases to one for every 13. Overall, 54% of all re-treatment cases were relapses/re-infections, while defaulters comprised 40% of re-treatments and treatment failure cases comprised the remaining 6%.

Special attention should be placed on pattern, trend and causes of TB re-treatment, which need to be further analyzed and closely monitored. These cases may end up jeopardizing the efforts of TB control programmes and also suggest that multi-drug TB resistance is on the rise in the region.

Annual Trend of TB Re-treatment Rate of Total TB Cases, 2008-2011



PROGRAMME HIGHLIGHTS

- ✓ Supported **21** sites on SMC
- ✓ Trained **74** health workers on SMC
- ✓ Served **25,706** people with SMC

SAFE MALE CIRCUMCISION (SMC)

The World Health Organization recommended safe male circumcision (SMC) to become a component of a comprehensive package of HIV prevention services for men, based on findings from scientific studies that revealed a protective effect of about 60% associated with the intervention. In September 2010, the MOH launched its SMC policy paving the way for rollout of this important HIV prevention intervention.

Such an intervention was not among the preventive activities initially stipulated under the Programme. At the beginning of PY5, USAID worked with NUMAT to roll out SMC in the region. A 2005/2006 survey indicated that in Northern Uganda only 2.4% of males aged 15-49 were circumcised. This made Northern Uganda the least circumcised region in the country.

NUMAT commenced activities by enlisting support of key stakeholders. DHTs, surgeons and influential opinion leaders were sensitized about the importance of SMC. It was necessary to prepare the population for this new intervention—one that was not in keeping with local tradition. Radio announcements and talk shows on popular radio stations began running messages mobilizing clients to participate in planned SMC camps. Messages also focused on creating demand for the service that would afterward be offered at the lower level units.

The MOH had not yet launched a training curriculum but recommended to adopt the Rakai Health Sciences Program (RHSP) curriculum already piloted in lower level health facilities in South Western Uganda. This was designed for scaling up SMC in resource limited settings and was therefore suitable for Northern Ugandan health facilities that were challenged with poor infrastructure and limited human resources, drugs, supplies and equipment.

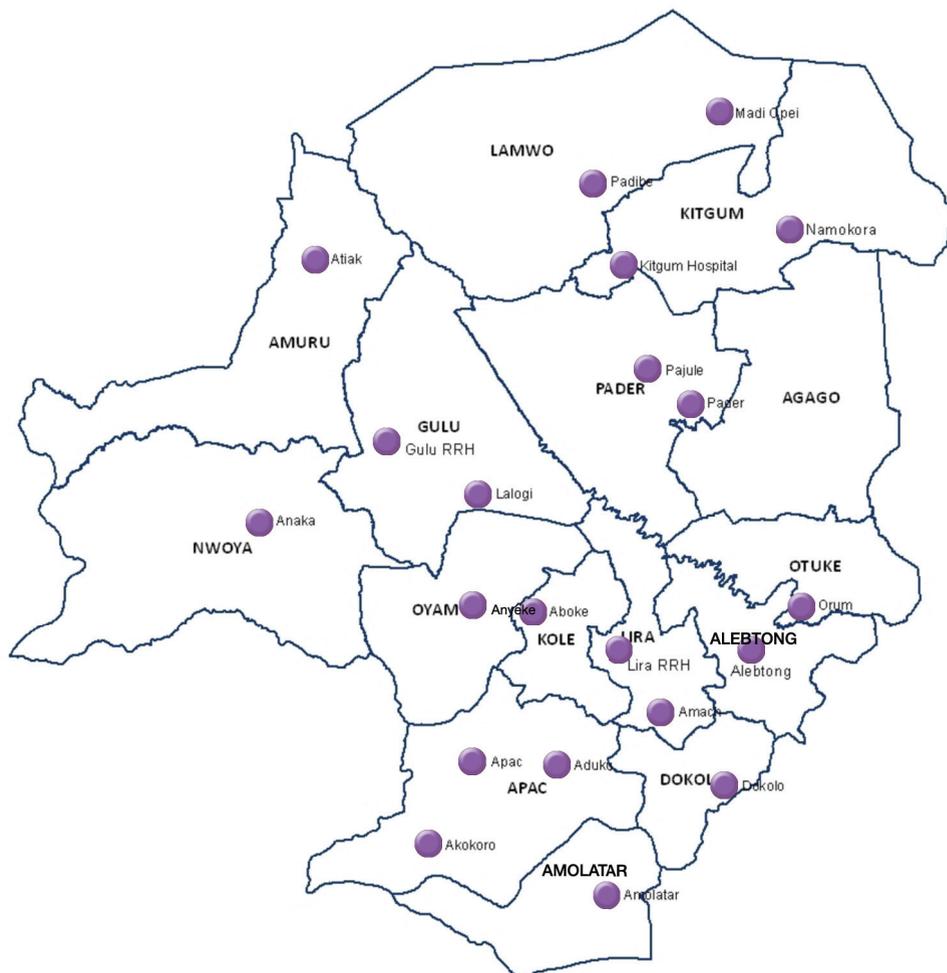
In November 2010 a team of 11 specialist surgeons from Gulu and Lira Regional Referral Hospitals and from Apac District Hospital, with support from NUMAT, made a two-day orientation visit to RHSP in Western Uganda. They learned the science behind SMC as an HIV prevention intervention and were appraised on recommended SMC surgical techniques as well as vital prerequisites including HIV counseling and testing, good operating theatre practice, infection control, and comprehensive HIV behavioral prevention. Trained surgeons then carried out a field assessment of selected lower level health facilities in Northern Uganda gauging their respective infrastructure, equipment and supply, and human resource capacities for SMC. Training also targeted clinical officers, theatre attendants and nurse counselors; the trainees were involved in a SMC camp as part of a practicum during the last three days of the training.

In April 2011, PEPFAR provided additional clarifications on SMC implementation. There was a need to accelerate the pace and coverage; focusing initially on males of reproductive age, if the intervention was to effectively reduce new HIV infections by up to 25% by 2016. In response to these recommendations, NUMAT planned to scale up circumcision services to 26,000 men between July 2011 and March 2012. NUMAT's scale up plan was to be carried out through 21 existing public health facilities (Figure 17) using a combination of routine and special SMC camps held at hospitals and health centers as well as outreach camps held at remote lower level health centers and congregate settings such as tertiary institutions and prisons.

The procurement of essential drugs, equipment, and consumables commenced during this period, following approval from USAID. However, some of the crucial surgical requirements like long acting local anesthetic and suture material were not easily accessible and this required using multiple suppliers to source all the items.

In October 2011, NUMAT expanded its SMC technical team and started receiving the USAID-provided more easy-to-use disposable SMC kits. All the selected sites were supported to conduct weekly circumcision activities while at least three high volume camps were conducted on a weekly basis at the same sites. In addition, SMC at institutional settings commenced with the first congregate camp successfully conducted at Gulu University.

Figure 17: Location of the NUMAT-supported 21 SMC Sites in the Region

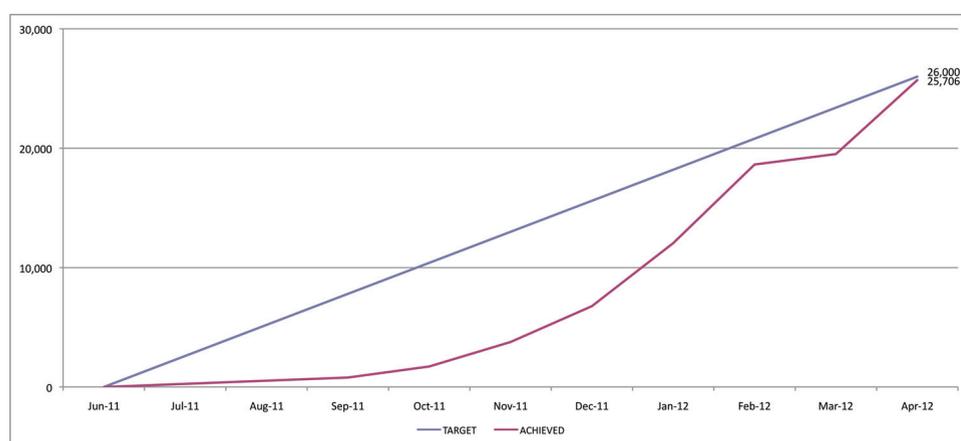


As SMC was gradually scaled up, the need to involve women became apparent. There was need to enhance female involvement to ensure compliance to post-operative sexual abstinence. NUMAT also sought a way to provide integrated services, addressing the health needs of both men and women. Drawing parallels from the relationship between cervical cancer and male circumcision, NUMAT liaised with specialists from regional referral hospitals and from Reproductive Health Uganda to offer cervical cancer counseling and screening at a convenient point at the SMC grounds.

In addition, the population was encouraged to come in for couples HIV counseling and testing during which they were sensitized on the advantages of male circumcision for both gender. The men continued being screened for STI before accessing circumcision while women moved into their own area for STI and cervical screening.

To date, NUMAT has provided circumcision services to 4,797 men through routine circumcisions and 20,909 through camps and outreaches, making a total of 25,706 individuals circumcised (Figure 18); and 74 health workers have been trained while 21 health facilities are actively engaged in SMC activity.

Figure 18: Time Trend in Uptake of SMC at NUMAT-supported Sites, June 2011-April 2012



Challenges

Maintenance of a stable surgical team is challenged by high turnover and by other conflicting needs for human resources at the health facilities. NUMAT liaised with the medical school at Gulu to provide additional surgeons to support those from the health centers and hospitals. Task shifting and sharing has been exploited to a greater degree with nurses taking on a larger role in conducting SMC surgery and patient follow up. However the National Nurses Council is yet to give formal permission for nurses to perform surgery.

Lessons Learned

The integration of cervical screening to SMC has had a multiplier effect, increasing the number of men accessing SMC and adhering to post-operative requirements. It has also promoted screening for cervical cancer and sexually transmitted infections (STI) as important components of reproductive health services.

SMC represents a critical entry point for HIV-related services, mainly HIV counseling and testing, for men, a category that commonly shuns attending health services particularly preventive ones and whose involvement and participation has often represented a challenge for a comprehensive family-centered provision of health services.

Accelerating Safe Male Circumcision (SMC) through Combination of Static Sites, Surgical Camps and Outreach Activities

Gulu Regional Referral Hospital is one of the safe male circumcision (SMC) sites supported by NUMAT to promote SMC. Through rotation of trained health workers, the hospital provides SMC using three approaches: static sites, 'camps', and outreaches.

At the static site (located in the hospital's surgical theatre), SMC is offered on request and performed by any available surgeon when needed. Camps are conducted at the same site but are held once a week on a designated day. During camps, to meet the demand of the large turnout, the hospital deploys 14 health workers, including six surgeons, six nursing assistants and two counselors. Lastly, outreaches are offered to lower level units, where the hospital deploys one surgeon and co-opts health workers from the visited unit to assist.

Providing SMC through these three approaches has increased the number of men accessing health services. Additionally, men who receive go to clinics, hospitals, and outreaches for SMC procedures are also offered HCT, screening for sexually-transmitted infections, and general health education services.

Since July 2011, Gulu Regional Referral Hospital has provided SMC to 5,225 men total, 369 men through the static site, 1,650 through outreaches, and 3,206 through camps.



MALARIA SERVICES

Strengthening Malaria Case Management Services

The backbone of malaria case management is the prompt administration of efficacious drugs in appropriate dosage and for the required duration of time to suspected and confirmed malaria patients, according to national guidelines. In accordance with this premise, community case management for uncomplicated malaria using the home-based management of fever (HBMF) approach was one of the major malaria interventions supported by NUMAT. The Programme implemented several activities within HBMF, notably: community mobilization and sensitization through local leaders; training of district trainers and supervisors of HBMF services; sensitization of health workers in HBMF services; selection and training of village health team (VHT) members as Community Medicine Distributors (CMDs); follow up and supervision of CMDs through quarterly review meetings. However The HBMF strategy has been saddled with daunting challenges, stemming from the inability to meet the demand of anti-malarials at the community level. Due to the chronic shortage of ACTs and the need to first supply the facilities with this essential commodity, the plan to have ACT at the disposal of CMDs volunteers remained largely unfulfilled.

During the fourth project year, NUMAT's approach was revised and refocused on strengthening malaria laboratory diagnosis and case management at health facilities in order to improve the quality of treatment and to rationalize the use of ACT. Training of 71 district trainers from 12 districts in the use of rapid diagnostic tests (RDT) for laboratory diagnosis was conducted with facilitators from the National Malaria Control Programme and cascaded to health workers at peripheral facilities with no availability of laboratory services. Distribution of RDT users' manuals and job aid wall charts for reference and quality assurance accompanied training at facility level. Finally, a total of 75,000 RDT kits were procured and supplied by NUMAT to 131 health facilities (mostly HC IIIs and IIs) to promote laboratory confirmed diagnosis of malaria cases.

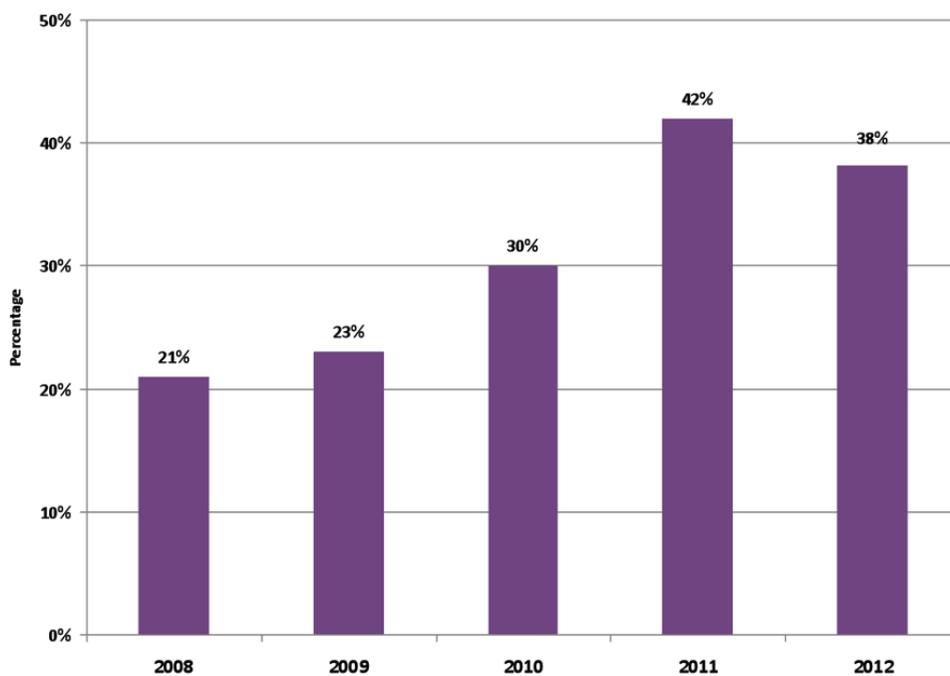
The RDT supply should have been taken over by the MOH with financial support by Global Fund; however, their procurement and distribution to the Northern districts are limited to a few districts and is erratic. Nonetheless, there has been an increasing trend in referring clinically-diagnosed malaria cases from the outpatient department to the laboratory for more certain diagnosis (Figure 19). This shows the recognition by health workers of the need to correctly ascertain cases of malaria in a scenario where malaria incidence in the region might be declining and presumptive

PROGRAMME HIGHLIGHTS

- ✓ **75,000** RDT kits supplied
- ✓ **195,000** nets distributed to pregnant mothers
- ✓ **75%** of households owning a net

diagnosis could no longer be a suitable option. The slight reduction recorded in 2011/12 may be partly attributed to a reversed attitude in malaria diagnosis by health workers from those facilities with no functional laboratory when they ran short of RDTs.

Figure 19: Proportion of Malaria Cases sent for Laboratory Confirmation, 2007-2012



*Data for first 6 months of 2012.

Malaria in Pregnancy Services (MIP)

Programme support for malaria in pregnancy services supported the provision of IPTp, integrated in broader reproductive health services. In line with the directly observed treatment strategy of IPTp, NUMAT procured and replenished essential commodities like clean water vessels, water treatment tabs and water dispensing cups that were delivered to 150 ANC-providing health facilities within the region.

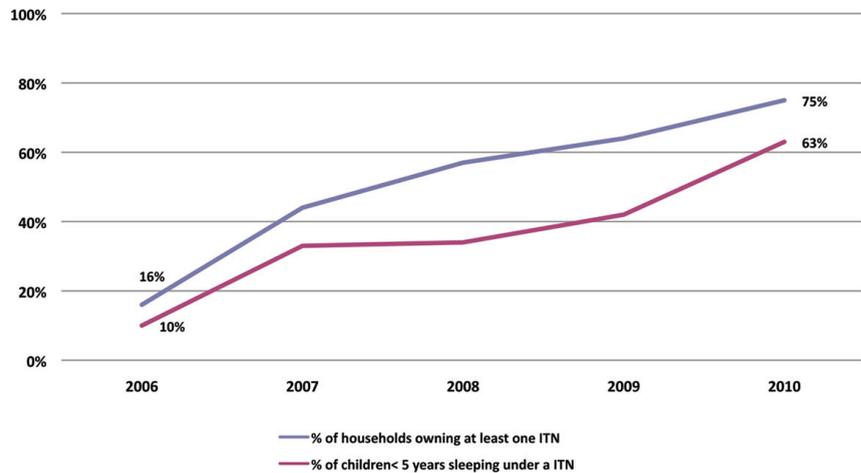
NUMAT also assisted all districts to conduct quarterly support supervision, hence visiting all health units that deliver antenatal care (ANC) and reproductive services. The purpose of these monitoring visits was to improve the quality of service delivery through regular assessment of the capacity of health facilities to deliver quality malaria in pregnancy (MIP) services. Support supervision was coupled with in-service training and mentoring of health workers, who were updated on current policies and practices that yield best results.

MIP services were expanded to include distribution of long-lasting insecticide-treated nets (ITNs) to pregnant women through ANC clinics. Over the last two project years, NUMAT received a consignment of 195,000 ITNs from the President's Malaria Initiative (PMI) for distribution to pregnant women at their first encounter with ANC clinics. The distribution was made based on the estimated number of annual pregnancies occurring in the region and taking into consideration also existence of other partners involved in net distribution; and the current district coverage in nets ownership by households.

The distribution of ITNs was accomplished by the district teams and supervised by the NUMAT technical staff that provided logistical and technical support. Tracking of ITNs use was done through proper documentation of the nets given to pregnant women by using the integrated reproductive health registers. As a precaution to avoid diversion of the nets, ITNs covers were removed before the nets were handed over to the beneficiaries. Tallying of the ITNs covers was tabulated against the beneficiaries and ITNs quantities delivered at the health facility.

As a result of the concerted efforts of nets distribution and sustained health education on their use as a preventive measure against malaria, household's ownership of ITNs and their utilization by children less than 5 years of age have increasingly improved in the region, as shown by the specific results of successive survey conducted (Figure 20).

Figure 20: ITN Ownership and Utilization by Under-5 Children in the Northern Region, 2006-2010



There has been also a progressive improvement in the utilization of MIP preventive services from NUMAT's inception, as indicated by HMIS data (Figure 21). In particular, the missed opportunities for pregnant mothers to receive their second dose of IPTp have steadily reduced, as the gradually lower drop-out rate shows. This could be attributed to consistent stocks of anti-malarials for IPTp, incentives for pregnant mothers to attend ANC more consistently, sustained health education and improved attitude of health workers towards prevention of MIP.

Figure 21: IPT2 Coverage and IPT1-2 Drop-out Rates in the Northern Region, 2007-2012

Challenges

Malaria case management at the community level through the HBMF approach faced significant obstacles in its implementation mainly due to the ACT shortage. In the absence of anti-malarial medicines, the trained CMDs—also members of the VHTs—were left redundant and could not be re-utilized as valuable community resources. From NUMAT's perspective, this was an investment that gave few returns; more generally, it also damaged the credibility of health interventions that aim at employing village-based extension workers by exposing the long-term shortcomings of this model.

Lessons Learned

At times when malaria control interventions have started showing their beneficial effects, it is vital to possess a better tool for accurately monitoring trends and measuring programme effectiveness. The presumptive approach of malaria clinical diagnosis seems no longer practicable with the fast-changing malaria epidemiological profile. A more consistent use of laboratory tests, being microscopy or RDTs, should be encouraged in both the clinical management of fever cases and the monitoring of the actual burden of malaria.

Comprehensive Malaria Control Achieved Remarkable Results in a Highly-endemic Setting: the Trend of Malaria Morbidity in Apac District

Although they are somewhat inaccurate and incomplete, regular HMIS data provide the only available direct measure of malaria occurrence across the region. In particular, comparing malaria proportional morbidity (MPM) and slide positivity rates (SPR) provides helpful estimates of malaria incidence.

NUMAT has analyzed the trend of these two indicators among children <5 years by comparing monthly data from Apac district (characterized by a very high malaria transmission) with analogous data from the malaria sentinel surveillance site of Aduku HC IV, also located in Apac.

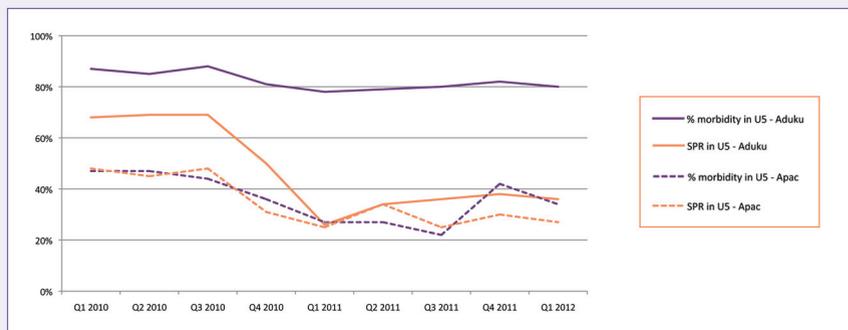
While the MPM—based on presumptive diagnosis of fever—did not change in the Aduku HC and declined insignificantly in Apac district, the SPR recorded at Aduku and in the whole district decreased dramatically. In just two years, SPR in Aduku HC decreased from 68% to 36%.

These results seem to indicate a considerable reduction in malaria burden in an area with one of the highest recorded entomological inoculation in the country. The dramatic drop in the number of anaemic children in the region (as measured by two consecutive surveys) seems to further corroborate this inference.

A likely explanation may be the concerted and multipronged malaria control intervention employed in the region, which included ITN distribution, sustained IRS, detection and treatment of cases with more efficacious ACT-based regimens.

If this is confirmed, it will add more weight to the intent to shift from the presumptive malaria diagnosis approach to a more accurate laboratory-confirmed diagnosis process.

Malaria Proportional Morbidity and SPR in Aduku HC IV and Apac District, 2010-2012



HUMAN RESOURCES DEVELOPMENT FOR HEALTH (HR-H)

Having a competent and dedicated health workforce with the required skill mix, number and distribution is crucial for providing quality HIV, TB and malaria services at all levels of service delivery. However, Uganda is suffering from a shortage of qualified health workers, particularly in peripheral health facilities where nursing assistants manning the unit is a common finding. In Northern Uganda, the workforce situation was made worse by the 20-year conflict and instability that not only displaced the health workers but also destroyed the existing health infrastructure.

At its inception, NUMAT conducted a rapid assessment on the status of human resources for health (HR-H) which revealed an average of only 34% of the required staffing level, with conspicuous disparities among districts. The most critically needed cadres of health workers were medical officers, enrolled nurses and midwives, orthopedic assistants, public health nurses, and laboratory personnel. The difficult working conditions in the region that was slowly recovering from the prolonged conflict were coupled with scarcity of staff accommodation; lack of basic equipment and supplies; and delayed access to payroll.

Additionally, costly recruitment exercises, incomplete composition and facilitation of the District Service Commissions and failure of districts to induct newly recruited staffs were recognized as health system-related causes of low staffing levels in the region. NUMAT assisted the districts of Gulu, Kitgum, Agago, Amuru, Apac and Oyam to recruit 987 health workers and to orient them to civil service work ethics, terms and conditions for a smooth entry into the system.

Closely working with district personnel and records officers, NUMAT also helped to establish in four sites the Human Resource Information System (HRIS), an electronic database for storage and use of human resource data. A recently conducted review of the HRIS revealed its benefits in enabling districts to produce various human resource reports such as staff records; staff probation, deployment, confirmation and retirement, training, disciplinary actions, performance, retention, and vacancies.

NUMAT organized a quick survey to identify the existing and potential systemic obstacles to health workers' recruitment and access to payroll in lieu of support to districts in terms of health workers recruitment. A sample of 228 health workers from five districts who had been recruited at least one year prior to the survey was interviewed. Some shortcomings were found happening at different stages of the district "recruitment cascade". Almost half of the respondents had not reported to the

PROGRAMME HIGHLIGHTS

- Deployed **502** students under COBES
- Established **HRIS in four sites**
- **90** health workers trained to manage HR

duty station within the following month from receipt of their appointment letter. Of those who were in the payroll at the time of the interview, only 7% had accessed it within the stipulated three months, while half of them started receiving their salary over six months from their appointment. Given the negative consequences the delayed access to payroll may have on work motivation and attitude, these findings required districts to examine the structural causes of delay and improve in the efficiency of their personnel offices.

In the quest of having capable managers at both the district and lower health facility level, 90 in-charges and members of district health teams participated in a training program on leadership and human resource management organized by NUMAT and the Uganda Management Institute. The training was well attended and an evaluation of its outcome was conducted by the very trainers to assess both the comprehensiveness of the training curriculum and the extent to which participants were using the skills acquired in their respective jobs. The evaluators noted a marked improvement in staff appraisal, delegation of duties, and planning and budgeting; while performance management; ethics and code of conduct and staff motivation continued to be some of the challenges.

NUMAT also instituted an innovative approach to address human resource shortage by partnering with Makerere and Gulu Universities and with district authorities under the Community-based Education Services (COBES) Program in which medical students were deployed in peripheral health units within the region for periods of 4-6 weeks. This model also helped to prepare health professionals for clinical practice and acclimatizes students to rural stations. During their placement, students got engaged in routine facility-based activities like clinical assessment of patients, maternal and child health activities; laboratory practice; health education, and drugs and records management, while they are also trained, mentored and supervised by site tutors, technical staff from NUMAT and their lecturers.

In total, 502 students were deployed in 20 health units within the region. Their number increased in 2010 and 2011 with 187 and 152 students deployed, respectively. Of the participating students, 65% were medicine students, 23% clinical officers school students, 7% pharmacy students, 2% medical radiology students, 2% nursing students and 1% dentistry students.

Anecdotal evidence indicated that student's placement reduced the workload of existing health workers in the participating sites. Patients' waiting time at service points was reduced while service uptake was reported to have increased in most participating facilities. The placement program also provided a more practical opportunity for learning by exposing the students to the reality of working in a rural setting.

Challenges

There has been a marked improvement in the health workforce level to more than 60% of staff positions filled but there remains much to be done, especially in improving staff remuneration, creating incentives for staff retention, developing leadership and management skills of health managers, and conducting effective support supervision of the deployed staff.

Access to learning materials—especially in the remote rural areas that lack electricity, library facilities, and internet—has been a huge setback for the COBES program, affecting students' ability to consult textbooks and various medical literature and to conduct their operational research.

Lessons Learned

The cost of staff recruitment can be remarkably reduced by having joint advertisements for more districts; reducing the number of days for staff induction by focusing on core ethics and procedural issues and also conducting the induction at the time of staff reporting and deployment.

Leadership and management skills training for health managers at all levels is not only a motivating factor but leads to considerably improve health facility performance especially in the area of planning and budgeting, report writing and client care.

The COBES model demonstrated that such approach is a feasible short-term solution for the human resource crisis. Health training institutions have also shifted in their training system from a lecture-based approach to one that is aimed at solving real health problems at community level. Most students interviewed on their COBES experience indicated that the 'hands-on approach' used by the model enabled deeper understanding of disease management and greater appreciation of how the health system functions.

Placement of Medical Students to Peripheral Facilities is a Successful Model to Tackle Workforce Crisis

The COBES approach helped address staff shortages in the region's peripheral health units by deploying 3rd, 4th and 5th year medical students from Makerere University and Gulu School of Medicine to these underserved sites. The field placement complemented the undergraduate program and exposed students to community-based public health work while addressing the staff shortage.

One COBES student, Alex Bakenga, narrates his experience:



"As a 4th year student, I worked at Padibe health center IV during my internship. This provided me with the opportunity to practice much of my undergraduate training. I was engaged in assessing patients in the clinics and laboratories, conducting community outreaches, supporting health management information systems and carrying out immunization. Through my experience at the HC, I was able to develop my skills in medical core competencies and to elaborate the information learned in the classroom.

I was also able to reach out to vulnerable people, including HIV-positive infants. I examined quite a number of them for opportunistic infections and monitored their adherence to ARV treatment. Working with these children has been quite a life changing experience and turning point in my life."

INFORMATION, EDUCATION & COMMUNICATION (IEC) & BEHAVIOR CHANGE COMMUNICATION (BCC)

The NUMAT IEC & BCC was activities cut across all programme areas and was implemented as an integrated activity guided by a specifically designed communication strategy that was adapted based on needs and emerging issues.

The NUMAT IEC & BCC strategy objectives were to: (1) improve the accuracy of information about transmission, prevention and treatment of HIV & AIDS, TB, and malaria; (2) increase the level of awareness and self-perception of risk regarding HIV transmission among the target groups; and (3) contribute to reduction of HIV related stigma and discrimination among PLHIV. To achieve these objectives, NUMAT adopted a multi-channel approach for creating awareness and disseminating behavior change messages. This included use of use mass media (both radio and print), printed materials, music, dance and drama, participation to special community events and special days (the International World AIDS and candle light days, TB and malaria World Days), as well as peer to peer health education.

Radio programs carried the bulk of the messages as it is the only easily accessible source of information among the rural population. The IEC & BCC interventions developed new messages for addressing some of the emerging issues on ART, TB/HIV, treatment adherence, and HIV discordance, targeting PLHIV, TB patients and their caretakers, youths, religious and community leaders, and the general population. Using live phone-in radio talk shows—where listeners could ask questions to the experts invited in studio—supplemented by short radio spots messages and public service announcements, the programs reached targeted audience with new breed of information. A total of 160 hours of radio talk shows on different subjects (see Table 4) and 902 radio spot messages were aired over eight FM radio stations spread across the region, which were selected based on their coverage, reach, programming innovations and community preference. Among the topics covered by the radio talk shows, almost 40% were on malaria-related topics, one third on HIV-related subjects including positive living and HIV stigma and discrimination, while 23% were on TB-HIV association.

NUMAT conducted a quick small-scale assessment to determine the degree of radio ownership and the profile of the average listener as well as the coverage and reach of radio health programs. Among the results, health related programs were found to be the most listened to, being preferred by 78% of respondents. People had widespread access to radio and were more likely to listen

PROGRAMME HIGHLIGHTS

- ✓ Used **160** hours of radio talk shows
- ✓ Supported **6** local drama groups
- ✓ Distributed **298,842** assorted printed IEC material

to programs in the evening hours. The most recalled messages were those on use of ITNs, benefits of ART, and promotion of condoms for HIV prevention, all mentioned by more than 60% of respondents.

In addition to radio programs, several IEC & BCC materials including posters, leaflets, booklets, and flip charts for use as teaching aides as well as take home materials for community reading were developed and widely disseminated. These materials were adopted from MOH and other partners such as Health Communications Partnership, Malaria Consortium, and Raising Voices International. The major processes undertaken by NUMAT included soliciting and adapting essential IEC & BCC materials, translating messages into Luo and pre-testing them with local communities and the technical IEC & BCC working groups in the sub region.

Also the use of drama was employed by the Programme as an educative and entertaining approach in creating awareness and demand for services. Six community drama groups were selected, received training on drama show performance and were utilized to conduct drama out reaches in 12 parishes from five selected districts (Gulu, Amuru, Nwoya, Kitgum and Oyam). Basic messages focused on encouraging people to test for HIV; informing them on ways of HIV transmission; and behaviors that protect from acquiring HIV infection. Other messages included: advantage of disclosing one's HIV status to the partner, benefits of ART, and the need for testing for TB among PHAs so to get early treatment. Through the drama outreaches, and during animated community discussions after the shows, the community raised a number of questions which were responded to by the health educators and other health officials.

Radio drama series to reinforce actual drama performances were also developed and aired on one radio station in Lira targeting the fishing communities in the shores of Lake Kyoga, Amolatar district. In total, 20 radio drama series with specific themes on HIV transmission, prevention, treatment, care and support were aired on a weekly basis.

NUMAT used innovative social mobilization events—some of which were code named 'Malaria Run' and 'Malaria Football Gala' to mobilize the community and specifically the youth and raise their awareness on malaria, TB and HIV & AIDS. These community events engaged the community to participate not only for their fitness or enjoyment but also to access related services made available during the events. Additionally, NUMAT actively supported and participated in activities to commemorate the AIDS, TB, and Malaria respective International World Days. Service beneficiaries and health workers were facilitated to participate at the different district functions where they presented educative songs, testimonies, music, dance and drama on various topics.

These were combined with HCT outreach services conducted on site, as well as with SMC and cervical cancer screening camps.

Integrated services camps were an innovative initiative NUMAT used for social mobilization and for taking health services nearer to the returning communities. At selected sites—usually in conjunction with the official launch of newly established ART clinics—NUMAT staff worked over five consecutive days with health facility staff, district health officials and other partners to conduct integrated services camps where children, youths and adults received HIV counseling and testing, screening and testing for TB and detection and treatment for malaria.

Other IEC activities included running supplements in the leading daily newspapers with key striking beneficiaries' success stories on positive living, improving HIV and AIDS services for the deaf and supporting TB/HIV services in remote areas. A total of four supplements were published in the two leading daily English newspapers in and others in local weekly tabloids.

Challenges

Despite the routine and constant attempts to create awareness on HIV transmission and prevention, recent surveys found that comprehensive knowledge about HIV & AIDS was sometimes lacking and that some misconceptions about HIV transmission are still persistent among the general population.

It is very challenging to evaluate the true results of an IEC campaign and—in view of the high costs of IEC activity implementation—to assess its value for money. With regard to this, measuring the reach, coverage and even the understanding of health messages is a feasible venture; linking exposure to health messages with behavior change is a thorny issue for any evaluation activity.

Lessons Learned

Radio continues to be the major source of information to the rural and urban folks. This is owing to the emergence of several FM radio stations that communicate majorly in the local language. Consequently, understanding key aspects of radio programming is critical in implementing a radio-based IEC & BCC intervention and for achieving the desired results.

Using the structure of the IEC working group to coordinate and run the talk shows proved successful by both engaging the districts and bringing together a team of expert health educators who capably communicate the correct message to the community in their mother language.



OBJECTIVE 3: Decreased Vulnerabilities for Specific Groups to HIV & AIDS and other Infectious Diseases

The patterns of HIV transmission are dynamic and change over time. This implies that the risk factors and drivers of the epidemic changed over time as evidenced, for instance, by the occurrence of a significant proportion of new infections among discordant couples in mutually monogamous union rather than with casual partnerships as was the case earlier on in the epidemic.

In order to adapt prevention strategies to changing patterns of risk, the NUMAT HIV prevention strategy sought to regularly understand the behaviors that put people at risk of infection and how new infections were distributed among risk groups. Thus the priority areas were: counseling and testing and disclosure to one's partner; promoting protection of vulnerable populations from social, cultural and economic risk; and ensuring integration of HIV prevention activities into care, treatment and support services.

NUMAT recognized the urgency of attending to primary prevention. The Programme built prevention efforts into all its activities, strengthening district capacity to design and implement effective prevention strategies, and reinforcing messages through small group and peer interaction. The NUMAT prevention strategy, therefore, primarily targeted the following groups for HIV prevention: girls and women at risk of transactional sex, commercial sex workers, adults in long term relationships, discordant couples, mobile male populations including fishing communities, long distance truck drivers and boda boda riders, incarcerated populations, youth aged 15-24 years who are out of the school system, PLHIV, and young positives.

PROGRAMME HIGHLIGHTS

- ✓ **351,797** individuals reached with ABC prevention messages
- ✓ **324** SGBV survivors provided with PEP
- ✓ **1,800,000** condoms distributed

ADULT PREVENTION

NUMAT intervention for HIV prevention among adults intended to reach strategic groups that drive the HIV epidemic and the most-at-risk populations (MARPs). These include high-risk groups such as: commercial sex workers (CSWs), boda-boda drivers (often acting as intermediaries in the commercial sex transactions), fishermen, truck drivers, hotel/lodge workers, and other groups more difficult to categorize and identify like young single mothers, people with disabilities, and people at risk of engaging into transactional sex due to poverty, breakdown of social structures and safety nets.

The NUMAT approach required HIV prevention messages to be accurately customized to the different recipient groups. Ahead of conceiving preventive messages, NUMAT conducted consultative meetings with representatives of the target groups, which revealed that there are few appropriate interventions and specific messages targeting most of these groups. The following step was training selected volunteers from the target groups as behavioral change agents (BCA) with a central role in sensitizing their communities, peers and other MARPs on HIV prevention messages. These included information on issues of HIV discordance, sexually-transmitted infections, correct and consistent use of condoms as well as provision of HCT services and referrals to other HIV-related wrap around services when necessary.

When evidence showed that the mutually monogamous heterosexual couples were the group where most recent HIV infections were occurring in Uganda, NUMAT also shifted its main prevention focus by rapidly scaling-up activities targeting couples and addressing the gender disparities that intensify impact among women. These couples were reached through couples' conferences, couples' focus group discussions and couples' HCT in partnership with faith-based institutions. Topics covered during these conferences included couples testing, HIV sero-discordance, ways of HIV transmission, identification and treatment of STIs and partner communication. These couple-centered interventions aimed at equipping persons in stable relationships with skills and knowledge for negotiating safe sex and adopting social norms that could prevent domestic violence. Also the importance of condoms for dual protection among discordant couples was emphasized. Couples HCT was offered in most of couples' conferences. In total, 1,519 couples attended the conferences and 1,170 couples (77%) were tested; the proportion of discordant couples among those who tested was less than 5%.

NUMAT also identified traditional and non-traditional condom distribution outlets and stocked them with condoms. Community education on correct and consistent use and distribution of condoms was carried out with the help of the district health educators and some NUMAT sub-grantees. The District PHA Networks were also engaged in condoms distribution among their members to help prevent infection in discordant couple and reduce incidence of re-infections. In total, over 600 condom outlets were established and over 1,800,000 condoms distributed within the 15 districts.

HIV prevention could not be effectively implemented outside the context of widespread poverty, seen as one of the main epidemic drivers. In the second half of its programme lifetime, NUMAT included activities meant to provide economic empowerment to women groups in order to address economic disparities that put women and girls at risk of HIV infection. Financial security was deemed as critical in empowering women to manage their lives and make positive health decisions that decrease their vulnerability to HIV. The Programme assisted women's and other community-based groups in establishing Accumulative Saving and Credit Association (ASCA) and village savings and loan associations (VSLA), to start alternative economic activities and adopt a saving attitude. After training the group members and providing them with saving kits, NUMAT conducted a sustained follow up of these groups in combination with implementation of HIV prevention activities.

The economic empowerment strategy served as an entry point to social and economic support for the group members and created a built-in system for survival alternatives among the beneficiaries.

Integrating HIV Services with Poverty Reduction Programmes among Fishing Communities in Post Conflict Northern Uganda

In many African countries, fishing communities are at higher risk for HIV infection. This high vulnerability is largely due to the migratory lifestyle of fishermen coupled with the availability of daily income alongside collateral trades and businesses, including commercial sex. NUMAT has been targeting fishing communities with prevention, treatment, and care services and is integrating a Village Saving and Loan Association (VSLA) model for poverty reduction.



Initially, the Programme conducted VSLA trainings intended to complement HIV treatment and care activities by equipping the fishermen with money saving skills that would empower them financially and therefor further reduce their vulnerability to HIV infection.

The integration of VSLA in prevention work among the fishing communities has proven effective: preliminary data collected from 13 VSLA groups indicated that between January 2010 and April 2011, members were able to save about 52 million shillings (corresponding to almost 25,000 US\$). Of this amount, about 28 million were shared by group members to solve personal needs (feeding, school fees, household requirements and alternative income generating activities), while about 24 million were currently held by the groups as cash savings at hand.

Members of these groups also received training in various HIV prevention packages and went on to serve as home-based care providers, behavior change agents, peer educators and community animators against gender-based violence.

HIV/AIDS interventions targeting most-at-risk populations, such as fishing communities, can be more effective if they integrate socially appropriate, economically viable and sustainable poverty reduction programs. VSLA, in particular, is a saving model that has proved to be extremely effective in promoting self-empowerment among the community members it serves. Replication and adaptation of this model in similar communities is highly recommended.

YOUTH PREVENTION

Of the HIV-infected global population, about half became infected between the ages of 15 and 24, making young people who are not yet sexually active or who have just embarked on their sexual lives to be one of the main targets for HIV prevention. The NUMAT component of prevention among youth concentrated on raising awareness among the young people on the complexity of HIV & AIDS with the aim of promoting behaviour change. The preventive messages have not only provided the youth with a better understanding of HIV transmission and prevention but have also raised the level of awareness about their responsibilities, and possible consequences of risky behaviours. NUMAT employed media campaigns, peers counseling, life skills training, and tailored interventions for particularly vulnerable individuals to reach mainly young people out of school, young people in higher institutions of learning and the young positives.

Out-of-school youth have been a high priority target group for the whole Programme lifetime. NUMAT used a range of youth-friendly outlets to reach this group of young people, which included integrated sports tournaments, youth risk reduction camps, and youth-parents' dialogue meetings. Young people were trained as peer educators to reach their peers with messages on HIV risk reduction, HIV transmission, and family planning. Where needed the peer educators referred youth to services available in the local community, including HIV & AIDS treatment. Through them, young people out of school were informed with vital prevention messages on the risks related to alcohol and substance abuse, transactional sex, concurrent multiple partnerships. They were also told about the benefits of sexual abstinence and HIV testing and disclosure, and were also equipped with life planning skills to enhance behavioral practices that reduce the risk of infection.

NUMAT trained peer educators from five nursing and teaching colleges—namely Uganda College of Commerce Aduku, Gulu University, Lira Nursing School, Canon Lawrence Parent Teaching College, Lira Technical School, Loro Technical, and Loro Modern—to assist their peers with HIV prevention education. This included also information on condoms and mobilization for HCT outreaches conducted by NUMAT partners at the institutions. Small group discussion sessions integrated HCT services in all nursing and teaching colleges. These sessions provided an opportunity for students to know their HIV status and to practice relevant risk reduction skills. They were also useful in promoting partner reduction among the students, promoting correct and consistent use of condoms and encouraging faithfulness among the student community.

NUMAT also contributed to reducing stigma and discrimination among young people by engaging school leaders and teachers to encourage supportive environments for HIV-positive students. Teachers were sensitized on the needs and rights of their students living with HIV. They were then assisted to create a conducive learning environment; to encourage school enrollment and retention of HIV-positive youth; to provide better school-based services, such as psychosocial support, counseling and nutrition; and to help give positive youth more confidence. School administrations were challenged to provide a supportive environment for young positives adherence to ARV treatment while at school.

In a quest to reach-out to more young people, NUMAT also employed the strategy of youth camps where activities like sports, games and video shows were combined with a package of prevention services including HIV counseling and testing. This aimed at integrating dissemination of HIV risk reduction messages with awareness of HIV sero-status. Almost 20 youth camps were organized where over 3,000 young people participated. During the 12 camps where HCT was offered, 417 youth were tested for HIV and 16 of them tested HIV-positive (3.8%).

Noticeable progress on knowledge and attitude toward HIV by youth was assessed by the LQAS surveys conducted in 2008 and 2010, where young people 15-24 years old were a sub-group of interest. Of the interviewed youth during the 2010 survey, 93% knew where to get tested for HIV and 78% had ever taken a test as compared with 86% and 64% in 2008, respectively. Also, 70% of youth respondents knew the location of a condom distributing outlet and 57% were able to mention all three main ways to prevent HIV infection.

SEXUAL AND GENDER-BASED VIOLENCE (SGBV)

NUMAT adopted a multi-sectoral and community mobilization approach to tackle SGBV and its intersection with HIV. The Programme's main components of the comprehensive response to SGBV were the emphasis on broad community engagement and the provision of the whole range of services for SGBV survivors including provision of post-exposure prophylaxis (PEP) for HIV. The crucial element of NUMAT approach to SGBV was represented by the community animators (CAs). These were selected and trained volunteers responsible for community sensitization, identification of SGBV-affected individuals and families, referral to the government agencies handling case management of SGBV survivors and follow-up of cases to ensure the survivors are ably cared for.

Affected families were rarely prone to pursue for legal process but rather tended to settle SGBV cases through local compensation by the perpetrator or his family, hence delaying the due medical care for the survivors. NUMAT's community engagement focused on tackling gender inequalities that perpetuate SGBV and which in turn increases the risks of HIV transmission in the community. The dialogues looked at root causes and contributing factors of SGBV thus focusing on behavioral and attitudinal change. The dialogues were facilitated by the CAs through focus group discussions in all districts. In addition, community drama groups were supported to stage shows to create awareness and educate communities about SGBV and HIV issues.

NUMAT also improved the delivery of clinical services to SGBV survivors by training 73 health workers on clinical management of sexual violence, PEP and delivery of timely and appropriate care to the survivors. NUMAT provided seven health facilities with appropriate medical equipment, including speculums, examination lamps, emergency contraception, HIV test kits, examination gloves, and data storage materials. As a result, the health facilities demarcated separate and convenient rooms for SGBV survivors which facilitated confidentiality, respect, and privacy during service delivery. Community linkages were strengthened to increase prompt referral of SGBV cases to the seven designated sites.

After the new national PEP policy guidelines were produced and released, NUMAT oriented 142 people from ART sites, police, judiciary and NGOs working on SGBV on the principles of the new policy. In response to health workers having a challenge with extraction, storage, provision of forensic evidence and testifying in court as witnesses in SGBV related cases, NUMAT with other partners co-facilitated a medical legal training, whose training manual was tailored to the target group and availed to all partners intending to train health workers. In total, 324 female SGBV survivors received PEP from NUMAT-trained service providers.

District-level coordination meetings brought together SGBV implementing departments and organizations to share experiences to ensure effective collaboration. A referral pathway was mapped out and developed so that survivors can get appropriate and timely services to reduce the risk of HIV infection as a result of sexual violence. Due to the efforts of the community animators and various service providers, there was a more widespread knowledge at community level on the importance of seeking care for SGBV survivors and on where to get SGBV prevention and response services.

NUMAT utilized all possible opportunities for promoting advocacy on women's rights and SGBV-related issues like celebration of the 16 days of activism, World AIDS Day, International Human Rights Day, Women's Day and the Day, of the African Child.

REDUCTION OF STIGMA AND DISCRIMINATION

Religious leaders have always played an important role among the communities they serve as influential opinion leaders. Historically, their attitudes and actions in regards to HIV prevention and PLHIV were often negative and adverse. Overall, congregation leaders viewed PLHIV as immoral and sinners and the same attitude applied towards condoms and their use. This led to refusal to disclose their status by PLHIV within religious settings for fear of being stigmatized and rejected.

NUMAT felt that those same faith-based organizations (FBOs) that used to instigate discrimination against PLHIV could lead the fight against stigma and advocate for HIV prevention. FBOs normally operate health and care facilities, schools, community centers and other social support programs. In bringing them on board, NUMAT endeavored to make of FBOs reliable and vigorous actors in the field of HIV prevention, care and support.

Using the Channels of Hope methodology, NUMAT started its engagement of faith-based organizations (FBOs) by training their leaders on HIV transmission and prevention as well as HIV-related stigma and discrimination. The training dispelled myths while addressing human rights issues and care for PLHIV. The curriculum for the orientation used religious texts and examples to promote acceptance and support of PLHIV in line with religious doctrine. After the training, FBO leaders in turn chose selected members of their congregations and created groups so-called congregational HIV/AIDS task teams (CHATTs). These teams were oriented on providing HIV education within their place of worship through small group discussions and educational talks and referring congregation members for HIV testing other health services.

CHATTs became the engine of FBOs' intervention towards HIV & AIDS. They supported faith leaders to consistently speak about HIV & AIDS and created an open environment for members to discuss HIV-related topics. CHATTs also coordinated couples' seminars, youth activities, HIV & AIDS sensitization meetings and in some congregations mobilized fellow members for HIV counseling and testing.

Accounts by participating religious leaders have been enthusiastic and supportive of their involvement in HIV prevention. Noticeable positive changes in attitude towards PLHIV have been registered in many congregations and most faith leaders have become more active and vocal in defending the rights of PLHIV.

Challenges

Success of SGBV services was negatively affected when the survivors opted to first pursue the legal redress before seeking medical attention. By the time they are finally referred, the 72 hours for effective PEP have already elapsed. When the survivors are living with relatives, their families sometimes exploited the situation for economic gains. Many SGBV cases were not pursued as long as the perpetrators were willing to pay what the family demanded from them.

There were a lot of expectations in terms of material and monetary motivation from the trained community resource persons. Their unmet demands affected their performance and ultimately their retention.

Lessons Learned

Integration of SGBV clinical services with other out-patients services helped ensuring that survivors could access services at all times when they visited the units. Knowledge of availability SGBV services improved reporting of cases and seeking of appropriate services for survivors. Hence increased reporting was likely to be due to improved access to services.

Engaging faith-based institutions demonstrated that partnering with an already organized group ensured a broader range of prevention activities undertaken. The CHATTs strategy enhanced HIV prevention knowledge, encouraged couple HIV counseling and testing, promoted abstinence, faithfulness to one partners and condom use, and offered the education on how to fight stigma and discrimination in the community.

Muslim Leaders in Gulu Integrate HIV Prevention into Friday Prayer



Muslim religious leaders are commonly perceived as being too conservative to promote safe sex as a preventive measure against HIV infection. However, Imams of Baraka mosques in Gulu municipality, Northern Uganda have broken the mold, taking measures to influence behavior change among their followers and helping to provide care and support to PLHIV.

Mohammed Abdullah, one of the trained Imams, volunteered

as a behavior change agent at the Inter-Faith Channels of Hope workshop organized by NUMAT. The workshop empowered leaders from different faiths to use their influential positions to reduce stigma and discrimination and elicit positive responses towards HIV & AIDS from their congregations.

Using the information he learned at the workshop, Abdullah incorporated the topic of HIV into his Jumma (Friday prayers) and engaged worshippers in discussions on HIV & AIDS. When explaining why he got involved, Abdullah used quotes from the Quran: 'khair-un-naas,' which means doing good to others and 'khidmat-e-khalq,' indicating service to mankind.

Muslim leaders also targeted HIV & AIDS interventions towards married people; for men with more than one wife, the leaders preached faithfulness and transparency among all the wives. They also encouraged men to get tested for HIV and bring their wives to be tested, as well.



OBJECTIVE 4: Increased Access by People Living with HIV & AIDS and their Families to Wrap-around Services

PROGRAMME HIGHLIGHTS

- ✓ Supported **152** PLHIV networks
- ✓ Trained and deployed **183** network support agents
- ✓ Distributed **12,524** basic care package kits to PLHIV

Comprehensive care and support for PLHIV and their families through provision of broad services ultimately leads to improve their quality of life. Some of these services include wrap-around services, non-clinical services contributing to the social safety nets of PLHIV, including: access to nutrition and food support, family planning, safe water and sanitation, spiritual and psychosocial support, general counseling, support to orphans and vulnerable children, non-food item distribution, income generating activities, legal assistance and human rights protections.

NUMAT did not directly provide wrap-around services but it created effective linkages to these services through USAID and non-USAID implementing partners, local government, civil society organizations (CSOs) other NGOs, and the private sector operating in the region. As a start-up, the Programme conducted a rapid assessment to determine an inventory of wrap-around services in all sub-counties of the original nine districts. District-specific findings of the assessment were mapped and disseminated to service providers, PLHIV groups and other stakeholders.

NUMAT's approach in this area also involved building the capacity of PLHIV networks to ensure active participation and promotion of access to wrap-around services through advocacy and strengthening of referral networks in the region.

STRENGTHEN PLHIV GROUPS IN ADVOCACY FOR SERVICES

NUMAT contributed to strengthening the capacity of PLHIV networks and groups at both district and sub-county levels. To date, this has resulted in 152 functional PLHIV networks, 15 at district level and 137 at sub-county level.

After contributing to their establishment and mobilization, groups were linked to NUMAT-supported facilities and guided by the district forum of PLHIV networks. Every three to five years, PLHIV groups

elect their leaders to spearhead the mobilization of other PLHIV within their communities, to link them to care and support networks, and to coordinate activities. NUMAT worked closely with the National Forum of PLHIV Networks in Uganda (NAFOPHANU) and with district local governments to provide technical assistance to all PLHIV networks through regular support supervision; which in turn has been part of the networks' sustainability plan towards the end of the programme lifetime.

The next step in NUMAT's collaboration with the PLHIV networks has been the creation of the Network Support Agents (NSAs). These are PLHIV selected from network who were trained to expand their knowledge about several HIV-related topics to act as a direct link between the community and the health care setting. In total, 183 NSAs (90 female and 93 male) were trained and subsequently attached to 68 selected facilities where they offer information, advice and support in the use of health facilities on issues related to HIV, TB and ARV treatment to their peers. They discuss with fellow PLHIV such issues as starting on ARVs, lifetime adherence to treatment, disclosure, issues of discordant couples, nutrition, positive living, prevention for self and others, PMTCT, HCT and psychological support. Their central roles were to facilitate entry of PLHIV and support individuals into the network of services; and to perform selected duties at the facilities under a definite task shifting strategy.

NSAs and PLHIV network leaders were also involved in radio talk shows to discuss on prevention with positives, managing HIV-discordant relationships, ART adherence, and access to care and support services. The programme also helped PLHIV in commemoration events, especially World AIDS Day, Philly Lutaya Day and Candle Light Day to share their personal testimonies and sensitize the community through music, dance, and drama.

NUMAT provided all NSAs with a bicycle to help in their field work and with a monthly lunch allowance. An assessment conducted towards the end of NUMAT showed that 94% of the previously trained NSAs were still alive and 72% were actively engaged in their duties. Their role in supporting activities both at the health facilities and in their community is well recognized and appreciated. The major challenge for the future is how to sustain their motivation to continue working as volunteers.

Coordinated referral for services is also critical in the delivery of comprehensive wrap-around services to PLHIV and their families. Various service providers need to know each other and agree on a mechanism which facilitates service linkages for their clients through a coordinated referral system. NUMAT helped in holding regular district coordination meetings that brought together all

stakeholders to harmonize referral system, involve PLHIV in aiding the referral network and ultimately improve access to and utilization of HIV-related services. Referral registers and forms were designed, adopted and distributed to community-based HIV service providers to track and record clients for services and allow monitoring trends in service availability and coverage. Comprehensive referral directories were also made available to assist the adequate choice of where to refer special cases.

In an effort to strengthen the advocacy skills of PLHIV, NUMAT supported the training of young PLHIV (Young Positive Ambassadors) from Lira district in advocacy and mobilization. The training was organized by Uganda National Young Positive Ambassadors (UNYPA). Participants were equipped with advocacy and communication skills to help them mobilize HIV-positive young people to have a role in HIV prevention, care, and treatment responses in their communities.

INCREASED ACCESS TO BASIC COMMODITIES AND LIVELIHOOD SUPPORT SERVICES

In collaboration with Programme for Accessible Health Communication and Education (PACE), NUMAT distributed free basic care package (BCP) commodities to 12,524 PLHIV households. The use of the BCP helps to reduce HIV-related morbidity and mortality due to malaria and to other opportunistic infections (OIs) and HIV transmission among sexual partners. The commodities include: two long-lasting ITNs for malaria prevention; a safe water system comprised of one 20-liter water vessel; filter cloth and four bottles of water treatment products; 60 male condoms; and a brochure on the benefits of cotrimoxazole prophylaxis and on ways to prevent HIV transmission to partners and other family members.

A study to follow-up on the use of BCP commodities by PLHIV household recipients was conducted aiming at evaluating the appropriateness and the level of utilization of the commodities distributed; and assessing the perceived benefits from the PLHIV and members of their households. The study established that utilization of commodities included into the BCP by their recipients was generally high; and that there was widespread appreciation by the survey participants of the benefits derived from the BCP commodities for PLHIV and their families.

Livelihood support was considered as a vital element in the quest for self-reliance and self-determination of PLHIV and their families. NUMAT, while not directly providing livelihood support, invested significantly in building the capacity of PLHIV networks towards this. Collaboration

with various organizations has made possible for HIV-positive people and their households to access livelihood support, mainly focusing on improved household food production, provision of seeds, and opening agricultural land.

In addition, PLHIV leaders were trained in livelihood support skills by National Agricultural Advisory Services (NAADS) and Northern Uganda Social Action Fund (NUSAF) II; and PLHIV households and individuals were also linked to Food and Nutrition Intervention for Uganda, Agricultural Cooperative Development International/Volunteers in Overseas Cooperative Assistance, Canadian Physicians for Aid & Relief and Northern Uganda Rehabilitation Program for food and nutritional support. In total, 17 PLHIV groups, including four women groups, benefited from livelihood support from USAID and non-USAID implementing partners, civil society organization, and government programs.

Challenges

The availability of wrap-around services in Northern Uganda remained inadequate and inequitable, being often concentrated in few districts and urban settings where most providers and other partners operated. The coverage in the provision of Basic Care Packages commodities to improve the quality of life of PLHIV was found to be insufficient, excluding a large portion of potential beneficiaries. Due to the current economic hardships in Uganda, many NSAs are unable to devote adequate time to conduct their vital roles in the community, as they have to work on other activities to provide for themselves and their families.

Lessons Learned

The use of expert clients—and in particular of NSAs who are well regarded by both fellow clients and health workers—contributed to strengthening community linkages with the health system and to effectively conducting follow up at community level. This ultimately led to good treatment adherence and higher retention of patients in care.

Additionally, the regular involvement of the NSAs in carrying out precise tasks during clinic days have significantly availed health workers with ample time to attend to clients, reducing the workload of the clinical teams thus securing better patients' management.

Living Positively Together: NUMAT Increased People's Access to Prevention, Care, and Support Services

Dickens Alyao—a NUMAT-trained network support agent (NSA)—is no stranger to the fear and uncertainty associated with HIV: ten years ago, he tested positive while on active duty in the military. Today, at 47, Dickens—a father of six children (all of whom are HIV-negative)—is an NSA leader active in both his community in Aloi sub-county and the nearby Alebtong Health Center IV in Alebtong district.



“I came back to Lira in 2004 and organized a small support group for 27 HIV-positive people. But this was before NUMAT, and we could only advise people about living with HIV,” says Alyao. “There were no ARV drugs and no health services available in our area. Now, people can be tested and drugs are available. When people started coming back after the conflict stopped in 2006, we knew we had to tell the community about HIV and we were very happy that NUMAT could support us.”

“We are well-trained in counseling and referrals, and people trust us. When we speak to communities, we introduce ourselves as people living with HIV, we tell them why it is important to get tested, that there is treatment available, and how we are living positively with the virus. When they come to the health facility, we are there and that makes them feel comfortable. We counsel them about the test and the drugs. If we need to, we see them in their homes.”

Clinic days are Tuesday, Thursday, and Friday at the facility, which is the only health center currently providing ART in the new district of Alebtong. The number of clients has quickly doubled from 1,100 to 2,274. The facility also serves clients from neighboring districts that cannot easily be followed up, so there is a need to train more NSAs to support the many people who come to the clinic seeking treatment.

“Life is still very difficult, but we are very grateful for the health services. I am very happy that I am making a difference for other people who, like me, are living with HIV. I expect to live another 40 years and I will keep working for my community as long as I can.”



Objective 5: Improved Use of Strategic Information

PROGRAMME HIGHLIGHTS

- ✓ Procured HMIS tools to **15** districts
- ✓ Conducted **3** LQAS surveys
- ✓ **89** abstracts accepted at conferences

NUMAT recognized the critical importance of supporting high-quality data collection and contextual data analysis and interpretation to track changes in the HIV & AIDS, TB, and malaria regional epidemiological profiles, in the provision of and access to services and to measure progress and identify gaps in programme implementation. They also supported the internationally-accepted move to integrate project M&E systems with existing host-country routine health information systems, as opposed to creating parallel systems. Under these premises, NUMAT has been building its own Monitoring and Evaluation (M&E) system in partnership with the districts, in order to translate the raw data into useful information that can be used to inform programming. The programme's main approaches were assisting districts to provide timely and quality information for their planning and decision making; and sharing lessons learned with broad audiences.

IMPROVED DISTRICT MANAGEMENT OF STRATEGIC INFORMATION

The Health Management Information System (HMIS) is an integrated reporting system used by the MOH and its partners with the purpose of generating information which will improve health care planning and decision making at all levels of the health system. It is also a routine monitoring system in both internal and external monitoring and evaluation processes. HMIS forms the backbone of Uganda's health sector information system.

In its pursuit of strengthening the health system through supporting HMIS activities and processes, NUMAT adopted the HMIS framework set by the MOH of providing quality information to support decision-making at district and facility level; assisting in assessing performance; and enhancing information use at all levels. By doing this, NUMAT endeavored to align its activities to the datasets, data tools and performance indicators stipulated and approved by MOH, in order to support the "Three Ones" concept¹⁶, hence preventing the creation of unsustainable parallel information systems.

¹⁶UNAIDS "Three Ones" key principles, Conference paper 1, Washington 2004
http://data.unaids.org/una-docs/three-ones_keyprinciples_en.pdf (accessed on 12th May 2012).

A functional and reliable HMIS is a powerful tool for managing and planning of health services. Building the skills of district staff in HMIS is then a critical step to improving the quality, effectiveness, and efficiency of health care delivery, particularly in a conflict-affected area such as Northern Uganda where the healthcare management system has been either extremely weak or nonexistent.

NUMAT support towards sustained functionality of the HMIS included among others:

- An HMIS *needs assessment* at the programme's inception and later for newly established districts to identify HMIS gaps and areas for immediate action.
- An extensive *capacity building* intervention that included district biostatisticians, HMIS focal persons at health sub district and record assistants from facilities on use of HMIS tools for data collection and analysis.
- A close *link* with MOH and other regional partners actively involved in supporting HMIS to coordinate HMIS strengthening activities like review meetings and to encourage districts to include HMIS activities into their health sector plans.
- The provision of office and IT *equipment* like computers, printers, external hard drives for data storage and management, external modem coupled with internet subscription and up to date antivirus software.
- The *supply of HMIS* manuals and data collection tools, such as registers, summary reports, inventory forms, client cards, requisition vouchers and tally sheets that were printed and distributed to health facilities; this has been systematic and was further reinforced after the MOH-led revision of HMIS tools introduced in late 2011.
- Logistical *facilitation* for all HMIS staff to collect timely data from all health facilities on a routine basis.

As NUMAT neared its end, the programme continued to support biostatisticians but made a significant shift from formal training to coaching and mentorship. The coaching approach was complemented by quarterly meetings of biostatisticians aimed at building their capacity in making elaborate presentations on data management subjects; and discussing relevant issues in the execution of their day-to-day tasks. Also, in ensuring that reported data meet the required quality standards of timeliness, reliability and validity, district biostatisticians were encouraged to move from mere data collection to data collection and validation. This was done through orienting them on data validation processes and available tools; reviewing and discussing results from their validation exercises; and increasing their knowledge and understanding of areas of health service delivery—specifically tuberculosis control and antiretroviral treatment services—traditionally outside their specific domain.

NUMAT has also helped districts to cope with increasing requirements to establish electronic data management and analysis by designing simple electronic templates for data entry and analysis that are customized for the existing paper tools, easy to use and helpful in producing information to disseminate through automatically-generated charts and tables.

NUMAT's efforts on improving utilization and dissemination of health information at all levels were sustained by assisting districts to organize regular review meetings where the biostatisticians play a leading role and district statistics are shown and discussed by district health team members, representatives from facilities and local leaders.

Several meetings dedicated to data review were held across the districts through NUMAT support. By using these meetings as an avenue for sharing successes and challenges, districts officials discussed their results and proposed strategies to improve performance and to overcome HMIS setbacks. Biostatisticians also utilized these forums to provide feedback on their mentorships and data validation activities; and to prepare detailed district reports in preparation for the annual District and National Health Assembly.

The Use of District Review Meeting to Monitor the Performance of the Health Sector: the Case of Agago District



In February 2012, managers of the Agago district health office conducted a semi-annual health sector performance review meeting, to which they invited district, HSD and sub-county officials, unit in-charges and partners. The main objective of the meeting was to assess the performance of the district Health Centers between the months of July and December 2011 and to rank them based on the resources allocated to each.

Inspired by the concept of a district league table, all 33 facilities were given a similar composite score on based on the health care outputs they produced versus their pre-set targets for essential indicators, including: DPT3 coverage; deliveries at the facilities; HIV-exposed infants tested for HIV; TB cure rate; latrine coverage; and IPT2 coverage.

The five highest and five lowest-ranking health facilities were identified, gaps in service delivery were recognized, and recommendations were made for urgent actions. The presence of sub-county leaders among the participants ensured political commitment towards improving performance and tackling the identified challenges in service provision.

DISSEMINATION OF PROGRAMME LESSONS

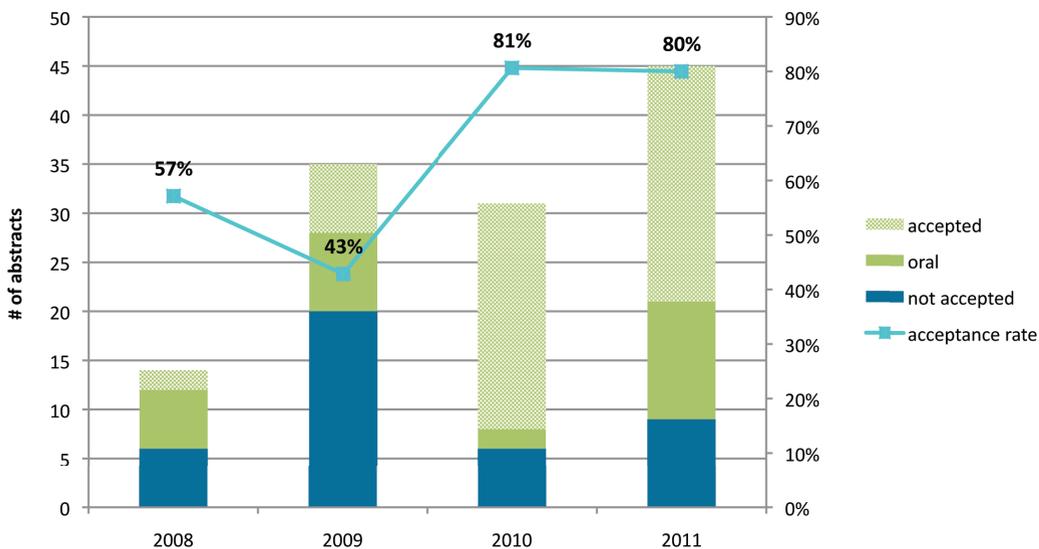
Publications and Abstracts

To share experiences of important lessons learned during NUMAT programme implementation and to ensure first-hand availability to best practices from similar settings, NUMAT has consistently endeavored to participate at national, regional, and international conferences. In addition to the visibility granted to the programme and its successes, conferences offered an invaluable learning opportunity, useful exposure to other experiences, and a tremendous amount of networking across the scientific community.

Participating actively in many conferences throughout the life of the project has positioned NUMAT as an authoritative actor in comprehensive HIV and AIDS programs in post-conflict settings, by showcasing its overall expertise, innovations, and achievements to a broad and specialized international audience.

Overall, 130 papers were submitted between 2008 and 2012, of which two-thirds were accepted and 21% featured as oral presentations (Figure 22).

Figure 22: Outcome of NUMAT Abstracts Sent to International Conferences, 2008-2011



For a comprehensive list of publications and abstracts, refer to Annex 5.

Lot Quality Assurance Sampling (LQAS) Surveys

Monitoring changes in behavior and in access to services provides the measure of success of HIV & AIDS programs and suggest ways to improve efficiency and coverage. While facility-based HMIS is the best source of routine health statistics, their usefulness for programme evaluation is limited by the lack of precise denominators and incomplete data recording. Simple small-scale surveys are useful to overcoming this limitation and can be executed in obtaining important population-based information.

NUMAT adopted the LQAS survey methodology to measure indicators of knowledge, attitudes, accessibility and utilization of services in its supported districts.

NUMAT conducted three LQAS surveys, at its inception (2006), midway (2008) and towards the end (2010) of the project. After comprehensive data analysis, survey reports were compiled and disseminated during district-specific review meetings; results at both regional and district level were compared and trends examined; areas with poor performance were identified and recommendations for prompt action were made.

Additionally, tools were improved with inclusion of relevant indicators; and a core group of district officials were trained and utilized in data collection, thus creating a capable workforce usable for future surveys.

NUMAT Website

In its continued efforts to disseminate lessons learned and best practices to a large audience within Uganda and the greater global public health community, NUMAT developed and built a project website. This site is accessible on the internet and hosted on jsi.com, so it will continue to exist even after NUMAT ends. The site contains project documents (such as quarterly and annual reports), various programme information and resources and external links to web pages from partners or NUMAT-related relevant documents. On 30th January 2012, the NUMAT website, <http://numat.jsi.com>, was officially launched. From its launch until the end of May 2012, there have been 656 visits to the website and 1,963 total page views from 517 unique visitors, making about 50 visits per week and an average of three pages viewed per visit.

MONITORING & EVALUATION (M&E)

NUMAT uses M&E as a management tool to measure effective and efficient programme implementation. Its Performance Monitoring Plan (PMP) was designed and approved; and subsequently revised with addition of new indicators and complemented with the PMP indicators table and the performance indicators reference sheets (PIRS).

Programme results were routinely monitored through activity reports, reports from grantees and special studies and surveys, while the HMIS was used for facility-based health monitoring. These reports to a great extent provided a lucid and accurate account of the extent to which targets were achieved and the activities undertaken contributed to programme outcomes. Regular review of the monitoring indicators and results from these studies served as an early warning system to determine whether NUMAT was on track to achieve its intended goals. When data suggested that it was not on track, corrective actions were discussed and taken to adjust programme activities and ensure that NUMAT would accomplish the stipulated targets.

In the course of the programme lifespan, NUMAT submitted all its required reports including quarterly and annual reports, Country Operational Plan (COP), annual workplans, PEPFAR semi-annual and annual reports, Presidents Malaria Initiative (PMI) reports and periodic reports to the Uganda Monitoring and Evaluation Management Services (UMEMS). All contractual deliverables were submitted on time and complete.

The NUMAT M&E database—the storing system of all data generated from programme activities—was conceived and built on an SQL internet-based platform with the capacity to absorb an unlimited bulk of data. Over the years, the database has gone through updating and redesign, due to change in indicators and required level of data disaggregation. Data were kept protected through security systems that allowed restricted user rights to only members of the Strategic Information department. Routine maintenance checks were done every quarter to ensure accurate reporting. Every end of quarter, the database generated summaries of data for each programme area by district and service outlets for each indicator, thus making management of data easier, quicker and better for the programme users.

Evaluation Studies

The following operational research studies were carried out on crucial programmatic approaches, activities and intervention's strategies.

Table 2: Evaluation Studies Conducted by NUMAT

Title	Year
Retention of HIV Positive Persons in Antiretroviral Therapy Programs in Post-Conflict Northern Uganda-Baseline Survey of 17 Health Units	2008
Relevance and Effectiveness of the Health Sector Training Activities in Northern Uganda	2009
Utilization of Basic Care Package Commodities Among People Living with HIV/AIDS in Northern Uganda	2009
Cost-effectiveness Analysis of the CD4 Outreach Testing for Hard-to-reach Communities in Northern Uganda	2010
Health Care-related Delays in an Early Infant Diagnosis Program among HIV-exposed Infants in Northern Uganda	2010
Attitudes and Perceptions of Health Workers in ART Units towards Changes of ART Data Management System in Northern Uganda	2010
Challenges in Implementation of Recommended Feeding Options among HIV-positive Mothers in Northern Uganda	2010
Health Workers' Recruitment Cascade and Access to Payroll in Selected Districts of Northern Uganda	2011
ART Service Expansion to HC III Level Facilities in Northern Uganda: a Quantitative and Qualitative Assessment	2012

Also, several success stories were collected from outstanding field experiences and shared, some of which also featured in the USAID website. A video documentary was shot with interviews to service providers, partners and beneficiaries to showcase main achievements NUMAT accomplished. Finally, seven technical papers on best practices were produced at the end of the Programme life to document some of the most remarkable programme successes, uploaded into the NUMAT website and distributed to all participants during the NUMAT End of Project Conference.

Challenges

Frequent changes of HMIS tools disorient most health workers who do not grasp immediately the newly introduced indicators and how to track and collect the data. Also, printing and distribution of the new HMIS tools is an expensive undertaking, which districts cannot manage with their meager funds. Human resource capacity is still scarce especially in some newly-established districts, hence hampering the completeness of health statistics collected and the utilization of available data.

Lessons Learned

Investing in developing confidence and broad-range competencies of the district HMIS focal persons is an imperative approach though energy-consuming and time-demanding. Having a competent and dedicated district biostatistician is an invaluable asset for the benefits that spill over onto both the record staff in the facilities, who can be supervised, nurtured and supported; and the district health team that can more assertively use the available data for programming and monitoring their activities.

Conceiving and writing abstracts for participating to international conferences provided a structured way for the NUMAT team to systematically reflect about strategies and achievements; and to evaluate more objectively the work done and identify relevant lessons worthy of a wide dissemination.



ANNEX 1: BASELINES, SET TARGETS & END-OF-PROGRAM ACHIEVEMENTS

PROGRAMME AREA	INDICATOR	BASELINE	EOP TARGET	ACHIEVED BY EOP
OBJECTIVE: IMPROVED COORDINATION OF HIV & AIDS, MALARIA AND TB RESPONSES				
Coordination	Number of functional PHA groups established in the program area (§)	-	158	158
Coordination	Number of health facilities with functional referral system between community and clinical services	-	90	90
OBJECTIVE: INCREASED ACCESS TO AND UTILIZATION OF QUALITY HIV & AIDS, TB, AND MALARIA PREVENTION AND TREATMENT SERVICES				
HCT	Number of individuals who received Testing and Counseling for HIV and received their results (*)	-	635,880	975,704
PMTCT	Number of pregnant women with known HIV status at entry (*)	-	412,363	413,085
PMTCT	Number of HIV-positive pregnant women who received antiretrovirals to reduce risk of MTCT (*)	-	24,360	18,218
PMTCT	Number of HIV-positive pregnant women assessed for ART eligibility (‡*)	-	16,735	6,377
PMTCT	Number of infants provided with a complete course of antiretroviral prophylaxis (*)	-	18,600	11,528
Pediatric HIV	Number of infants born to HIV-positive women who received an HIV test within 12 months of birth (‡*)	-	14,171	16,913
Pediatric HIV	Number of infants born to HIV-positive pregnant women who are started on CTX prophylaxis (‡*)	-	8,415	5,013
Care	Number of HIV-positive persons receiving cotrimoxazole prophylaxis	-	40,000	50,777
ART	Number of adults and children with advanced HIV infection newly enrolled on ART	-	7,385	15,412
ART	Number of pregnant women with advanced HIV infection newly enrolled on ART	-	833	443
ART	Number of adults and children with advanced HIV infection currently receiving ART	-	12,600	16,575
Laboratory	Number of HIV tests performed at NUMAT-supported laboratories (*)	-	736,660	997,085
Laboratory	Number of TB tests performed at NUMAT-supported laboratories (*)	-	98,000	89,181
Laboratory	Number of syphilis tests performed at NUMAT-supported laboratories (*)	-	126,000	129,595
Laboratory	Number of HIV monitoring tests performed at NUMAT-supported laboratories (*)	-	83,000	124,069
Laboratory	Average population per USG-supported TB microscopy laboratory	1:70,000	1:40,000	1:37,400

SMC	Number of locations providing MC surgery for HIV prevention	-	21	21
SMC	Number of men 15-54 years provided with MC surgery for HIV prevention	-	26,000	25,706
TB	Percentage of new smear-positive TB cases detected among the total estimated number of cases	68%	70%	82%
TB	Percentage of new smear-positive pulmonary TB cases that were successfully treated	86%	85%	88%
TB/HIV	Number of HIV-positive patients in HIV care or treatment who started TB treatment	-	15,128	6,026
TB/HIV	Percentage of all registered TB patients who are tested for HIV through USG-Supported programs	43%	80%	82%
Malaria	Proportional morbidity due to malaria over the total OPD attendance	35%	32%	33%
Malaria	Percentage of households owning a treated mosquito net	44%	75%	70%
Malaria	Percentage of under-5s sleeping under a treated mosquito net	33%	63%	65%
Malaria	Percentage of mothers received two or more doses of IPT2	38%	60%	61%
Malaria	Percentage of malaria cases confirmed through lab diagnosis	31%	45%	38%
Quality assurance	Percentage of service delivery points complying with national laboratory standards	90%	98%	100%
Quality assurance	Percentage of service delivery points complying with ART national standards	64%	90%	63%
Quality assurance	Percentage of service delivery points complying with TB national standards	51%	70%	60%
OBJECTIVE: DECREASED VULNERABILITIES FOR SPECIFIC GROUPS TO HIV & AIDS AND OTHER INFECTIOUS DISEASES				
Prevention	Number of persons provided with post-exposure prophylaxis	-	105	103
Prevention	Number of Health facilities with HIV Post exposure Prophylaxis available	-	35	34
Prevention	Number of the targeted population reached with ABC preventive interventions	-	9,000	10,359
Prevention	Number of the targeted population reached with AB preventive interventions	-	5,500	6,377
Prevention	Number of MARP reached with preventive interventions	-	3,500	3,351

OBJECTIVE: INCREASED ACCESS BY PEOPLE LIVING WITH HIV&AIDS AND THEIR FAMILIES TO WRAP-AROUND SERVICES				
Wrap-around services	Number PLHIV and their family members using wrap around services	-	44,000	51,295
Prevention	Number of PLHIV reached with a minimum package of Prevention with Positives (*)	-	30,000	19,579
OBJECTIVE: IMPROVED USE OF STRATEGIC INFORMATION				
M&E	Number of individuals trained in strategic information from within the program area (*)	-	222	355

Legend:(§) No baseline value available

(*) Targets and achievements are cumulative for the whole Programme lifetime

(‡) Indicator introduced in 2009

ANNEX 2: FACILITIES SUPPORTED BY NUMAT

District	Facility	Level	Areas of support						
			HCT	PMTCT	TB	ART	Malaria	SMC	LAB
AGAGO	ACHOLI-PII--HC III	III			X		X		
	ADILANG--HC III	III	X		X		X		
	KALONGO--HOSPITAL	H	X	X	X		X		X
	LIRA-KATO--HC III	III	X	X	X		X		X
	LIRA-PALWO--HC III	III	X	X	X		X		X
	LUKOLE--HC III	III		X	X		X		X
	PAIMOL--HC III	III			X		X		
	PATONGO--HC III	III	X	X	X	X	X		X
	WOL--HC III	III			X		X		X
ALEBTONG	ABAKO--HC III	III	X	X	X		X		X
	ALEBTONG--HC IV	IV	X	X	X	X	X	X	X
	AMUGO--HC III	III	X	X	X		X		X
	APALA--HC III	III	X	X	X		X		X
	OMORO--HC III	III	X	X	X		X		
AMOLATAR	AMAI--HOSPITAL	H			X		X		X
	AMOLATAR--HC IV	IV	X	X	X	X	X	X	X
	APUTI--HC III	III	X	X	X		X		X
	ETAM--HC III	III	X	X	X		X		X
	NAMASALE--HC III	III	X	X	X	X	X		X
AMURU	AMURU--HC III	III	X	X	X		X		X
	ATIAK--HC IV	IV	X	X	X	X	X	X	X
	AWER--HC II	II			X		X		
	BIBIA--HC III	III	X	X	X		X		X
	KALAGIMA--HC III	III	X	X	X		X		X
	LABONGOGALI--HC II	II			X		X		
	OLWAL--HC III	III	X	X	X		X		
	PABBO (GOVT)--HC II	II		X	X	X	X		X
	PABBO (NGO)--HC III	III	X	X	X		X		X
PARABONGO--HC II	II			X		X			
APAC	ABONGOMOLA--HC III	III	X	X	X		X		X
	ADUKU--HC IV	IV	X	X	X	X	X	X	X
	AKOKORO--HC III	III	X	X	X	X	X	X	X
	ALENGA--HC III	III	X	X	X		X		X
	APAC--HOSPITAL	H	X	X	X		X	X	X
	APOI--HC III	III			X		X		

District	Facility	Level	Areas of support						
			HCT	PMTCT	TB	ART	Malaria	SMC	LAB
	CHEGERE--HC III	III			X		X		
	IBUJE--HC III	III	X	X	X		X		X
	INOMO--HC III	III	X		X		X		
	NAMBIESO--HC III	III	X	X	X		X		X
	TEBOKE (GVT)--HC III	III	X	X	X		X		X
DOKOLO	AGWATA--HC III	III	X	X	X	X	X		X
	BATA--HC III	III	X	X	X	X	X		X
	DOKOLO--HC IV	IV	X	X	X	X	X	X	X
	KANGAI--HC III	III	X	X	X		X		X
	KWERA--HC III	III	X	X	X	X	X		X
GULU	AWACH--HC IV	IV	X		X	X	X		X
	AWOO--HC II	II			X		X		X
	AYWEE--HC III	III	X	X	X		X		X
	BAR-GEDE--HC III	III			X		X		
	BOBI--HC III	III	X	X	X	X	X		X
	CWERO--HC III	III	X	X	X		X		X
	GULU INDEPENDENT-- HOSPITAL	H	X	X	X		X		X
	GULU PRISON--HC II	II			X		X		X
	GULU--REGIONAL REF HOSPITAL	H	X	X	X		X	X	X
	KAL-ALII--HC II	II			X		X		X
	LABWOROMOR--HC III	III	X	X	X		X		X
	LALOGI--HC IV	IV	X	X	X	X	X	X	X
	LANENO-BER--HC III	III			X		X		
	LAPAINAT--HC III	III	X	X	X		X		X
	LAROO--HC III	III			X		X		
	LAYIBI TECHO--HC III	III	X	X	X		X		X
	ODEK--HC III	III	X	X	X		X		X
	ONGAKO--HC III	III	X	X	X		X		X
	OPIT--HC III	III	X	X	X		X		X
	PATIKO--HC III	III	X	X	X		X		X
KITGUM	AKUNA LABER--HC III	III	X	X	X		X		X
	KITGUM--HOSPITAL	H	X	X	X	X	X	X	X
	KITGUM-MATIDI--HC III	III	X	X	X		X		X
	MUCWINI--HC III	III	X	X	X		X		X

District	Facility	Level	Areas of support						
			HCT	PMTCT	TB	ART	Malaria	SMC	LAB
	OKIDI--HC II	II		X	X		X		
	OROM--HC III	III	X	X	X		X		X
	PAJIMO--HC III	III	X	X	X		X		X
	ST. JOSEPH'S KITGUM-- HOSPITAL	H	X		X		X		X
KOLE	ABOKE--HC IV	IV	X	X	X	X	X	X	X
	AKALO--HC III	III	X	X	X		X		
	ALITO--HC III	III	X	X	X		X		X
	BALA--HC III	III	X	X	X	X	X		X
LAMWO	AGORO--HC III	III	X	X	X		X		X
	LOKUNG--HC III	III	X	X	X		X		
	MADI-OPEI--HC IV	IV	X	X	X		X	X	X
	PADIBE ST. PETER & PAUL-- HC III	III	X	X	X		X		X
	PADIBE--HC IV	IV	X	X	X	X	X	X	X
	PALABEK OGILI--HC III	III	X	X	X		X		
	PALABEK-GEM--HC III	III	X	X	X		X		X
	PALABEK-KAL--HC III	III	X	X	X	X	X		X
	PALOGA--HC II	II			X		X		
	POTIKA--HC II	II			X		X		
LIRA	AGALI--HC III	III			X		X		
	ALIK--HC II	II			X		X		
	AMACH--HC IV	IV	X	X	X	X	X	X	X
	AMUCA SDA--HC III	III	X	X	X		X		X
	AROMO--HC III	III	X	X	X		X		X
	AYAGO--HC III	III			X		X		
	BARAPWO--HC III	III	X	X	X		X		
	BARR--HC III	III	X	X	X		X		X
	BOROBORO--HC III	III	X	X	X		X		X
	LIRA-REGIONAL REF HOSPITAL	H	X	X	X		X	X	X
	NGETTA--HC III	III	X	X	X		X		X
	OBER--HC III	III	X		X		X		
	OGUR--HC IV	IV	X	X	X	X	X		X

District	Facility	Level	Areas of support						
			HCT	PMTCT	TB	ART	Malaria	SMC	LAB
	ONYWAKO--HC II	II			X		X		
	PAG MISSION--HC IV	IV	X	X	X	X	X		X
NWOYA	ALERO--HC III	III	X	X	X		X		X
	ANAKA--HOSPITAL	H	X	X	X	X	X	X	X
	KOCH GOMA--HC III	III	X	X	X	X	X		X
	LANGOL--HC II	II	X		X		X		
	PURONGO--HC III	III	X	X	X		X		X
OTUKE	ALIWANG--HC III	III	X	X	X		X		X
	OKWANG--HC III	III	X	X	X		X		X
	OKWONGO--HC III	III	X	X	X		X		X
	OLILIM--HC III	III	X	X	X		X		X
	ORUM--HC IV	IV	X	X	X	X	X	X	X
OYAM	ABER--HOSPITAL	H	X	X	X		X		X
	AGULURUDE--HC III	III	X	X	X	X	X		X
	ANYEKE--HC IV	IV	X	X	X	X	X	X	X
	ICEME NGO--HC III	III	X	X	X		X		X
	MINAKULU NGO--HC III	III	X	X	X		X		X
	NGAI--HC III	III	X	X	X		X		X
	OTWAL--HC III	III	X	X	X	X	X		X
PADER	ACHOLI-BUR--HC III	III	X	X	X		X		X
	ATANGA--HC III	III	X	X	X	X	X		X
	AWER--HC III	III	X	X	X		X		X
	KILAK--HC III	III		X	X		X		
	LAGUTI--HC III	III		X	X		X		
	LATANYA--HC II	II			X		X		
	PADER--HC III	III	X	X	X	X	X	X	X
	PAJULE--HC IV	IV	X	X	X	X	X	X	X
	PURANGA--HC III	III		X	X		X		X
	RACKOKO--HC III	III			X		X		X

ANNEX 3: PARTNERS AND GRANTEEES

ORGANIZATION	AREAS OF INTERVENTION
CONSORTIUM PARTNERS	
John Snow Inc. (JSI)	Overall lead in program design, implementation and monitoring; technical assistance in both the programmatic and administrative fields; direct support in the NUMAT external communication strategy (2006-2012)
World Vision Uganda	HIV behavioral prevention activities, including fighting Sexual Gender Based Violence (SGBV), involvement of Faith-based organizations in preventing HIV and scale up home-based care activities (2006-2012)
AIDS Information Center (AIC)	HIV counseling and testing through static and outreach sites, TB/HIV collaboration and laboratory services in Lango sub/region (2007-2010)
OTHER PARTNERS	
Baylor College of Medicine Uganda	Pediatric HIV care and support (2008-2010)
CNAPSIS	Provision of CD4 count tests to ART sites through an outreach model (2007-2012)
GRANTEES	
Associazione Volontari per lo Sviluppo Internazionale (AVSI)	Prevention of mother to child transmission in Acholi sub/region, technical support to Kitgum Government Hospital and Patongo HC III (2007-2012)
Straight Talk Foundation, Gulu & Kitgum Youth Centers	HIV counseling and testing and HIV prevention among youth in Acholi sub/region (2007-2008 and 2009-2010)

ORGANIZATION	AREAS OF INTERVENTION
GRANTEES	
AIDS Care Education & Training (ACET)	HIV prevention among couples in Kitgum and Lamwo districts (2010-2011)
Marie Stopes	HIV prevention among most-at-risk populations (2010-2011)
Samaritan Purse	Follow up and referral of HIV+ children for care and treatment in Lira district (2010-2011)
Health Alert	Follow up and referral of HIV+ children for care and treatment in Gulu district (2010-2011)
Child Fund (Acenworo)	Follow up and referral of HIV+ children for care and treatment in Apac district (2010-2011)
Medical Team International (MTI)	HIV counseling and testing in Lango sub/region (2010-2011)
Food for the Hungry	SGBV prevention and referral services in Pader and Agago districts (2010-2011)
Christian Children Fund (CCF)	Protection of women from gender-based violence (2007-2008)
National Guidance & Empowerment Network of PLHIV (NGEN+)	HIV counseling and testing in Acholi IDP camps (2008-2009)

ANNEX 4: PUBLICATIONS AND PRESENTATIONS

Publications in Scientific Journals

1. "Assessing the knowledge and behavior towards HIV/AIDS among youth in northern Uganda: a cross-sectional survey" Ciccio L., Sera D. *Italian Journal of Tropical Medicine* Vol. 15, N. 1-4, 2010, pp. 29-34.
2. "An evaluation study on the relevance and effectiveness of training activities in Northern Uganda" Ciccio L., Makumbi M., Sera D. *Rural and Remote Health* 10 (online), 2010: 1250. Available from: <http://www.rrh.org.au>
3. "Are the appropriate tools used for monitoring malaria trends in Uganda? A proposal for more meaningful indicators" Ciccio L., Tumukurate E. *Health Policy and Development*, Vol. 7, No. 2, 2009, pp. 101-104.

Abstract presented at International Conferences

XIX International AIDS Conference, Washington 22-27 July 2012

1. Increasing access to antiretroviral services in Northern Uganda through its scale-up to lower level facilities. L. Ciccio, A. Ocerro, K. Beal, SP Akena
2. A gender-based approach for expanding and integrating Male Medical Circumcision in Northern Uganda. A. Ocerro, G. Kisebo, L. Ciccio, K. Beal, A. Fullem
3. Scaling up medical male circumcision for HIV prevention in a non-circumcising community. A. Ocerro, G. Kisebo, A. Fullem, K. Beal, L. Ciccio
4. Enhanced efficiency of provider-initiated HIV counseling and testing in detecting HIV infection among the youth. L. Ciccio, A. Ocerro, SP Akena, K. Beal, W. Oloya
5. Are all fishing communities a most-at-risk population for HIV infection? The case of Amolatar district in Northern Uganda. W. Oloya, L. Ciccio, A. Ocerro, K. Beal, A. Fullem

16th International Conference on AIDS & Sexually Transmitted Infections in Africa (ICASA), Addis Ababa 4-8 December

6. Integrating HIV services with poverty reduction programmes among fishing communities in post conflict Northern Uganda. S. Odipo, B. Adong, J. Otim, A. Muhereza, L. Ciccio
7. Task Shifting for Scale-up of HIV Care: Evaluation of a Nurse-centered Antiretroviral Treatment Clinic in Northern Uganda. SP Akena, A. Arach, A. Ocerro, A. Muhereza, L. Ciccio
8. Integrating Information, Education and Communication interventions with health service delivery camp: an innovative approach for increasing access to HIV and AIDS prevention, care and treatment in Northern Uganda. M. Ochora, H. Nassur, D. Wanglobo, A. Ocerro, L. Ciccio

9. Estimating the association between Tuberculosis treatment outcome and HIV status in the TB/HIV high-prevalence setting of Northern Uganda. H. Nassur, JP Otuba, E.R. Ogang, A. Ocerò, L. Ciccìo
10. Providing CD4 count tests to pregnant mothers for a more effective PMTCT intervention in Northern Uganda. B. Kabogoza, H. Nassur, A. Ocerò, L. Ciccìo
11. Scaling up Provider-initiated Testing and Counseling in Northern Uganda. B. Kabogoza, SP Akena, A. Arach, A. Ocerò
12. Providing CD4 Cell Count Tests to Hard-to-reach Communities in Northern Uganda: Cost-effectiveness of an Outreach Delivery Model. A. Ocerò, SP Akena, JP Otuba, L. Ciccìo

42nd Union World Conference on Lung Health, Lille 26-30 November 2011

13. HIV co-infection prevalence among different TB classification types in Northern Uganda. L. Ciccìo, JP. Otuba, E. Ogang, A. Ocerò, M. Makumbi
14. The trend in the epidemiological profile of TB re-treatment cases in the high HIV-prevalence setting of Northern Uganda. L. Ciccìo, JP. Otuba, E. Ogang, A. Ocerò, M. Makumbi

6th International AIDS Society (IAS) Conference on HIV Pathogenesis, Treatment and Prevention, Rome 17-20 July 2011

15. Uptake of HIV services in combination with malaria prevention and Family Planning (FP) services at ante-natal care clinics in northern Uganda. D. Sera, L. Ciccìo, M. Makumbi, A. Ocerò
16. Empowering the community to address the needs of HIV positive youth in a district of post-conflict Northern Uganda. SP. Akena, D. Sera, F. Oburu, L. Ciccìo
17. Providing CD4 cell count tests to hard-to-reach communities in Northern Uganda: Cost-effectiveness of an Outreach Delivery Model. A. Ocerò, J. Odaga, L. Ciccìo, M. Makumbi
18. Expanding HIV pediatric care and treatment through community involvement in a district of post-conflict Northern Uganda. SP. Akena, D. Sera, J. Blackham, L. Ciccìo
19. Combining HIV counseling and testing with comprehensively tailored prevention interventions for couples in Northern Uganda. B. Adong, L. Ciccìo, A. Ocerò, R. Kanwagi

6th International Conference on HIV Treatment and Prevention Adherence, Miami 22-24 May 2011

20. The Treatment Support Team: Linking the health facility based and community based health care systems in post-conflict Northern Uganda. A. Ocerro, J. Arica, L. Ciccio
21. Involving People Living with HIV/AIDS to support their peers for access to improved HIV-related services in Northern Uganda. L. Ciccio, A. Ocerro, J. Arica
22. Bringing ART services to peripheral level health facilities in Northern Uganda. L. Ciccio, A. Ocerro, J. Arica

137th American Public Health Association (APHA) Conference, Denver 6-10 November 2010

23. Prevalence & response to sexual & gender-based violence among people living with HIV in Lira District, Uganda. C. Achar, L. Ciccio, D. Sera

41st Union World Conference on Lung Health, Berlin 11-15 November 2010

24. Improving the coordination and performance of TB and HIV interventions in Northern Uganda. L. Ciccio, E. Tumusherure, A. Ocerro, M. Makumbi, D. Sera
25. Improving the laboratory diagnosis of TB through proficiency testing in Northern Uganda. L. Ciccio, M. Pedun, D. Sera, A. Ocerro
26. Adherence to national guidelines in the diagnosis of sputum-negative tuberculosis. JP. Otuba, L. Ciccio, A. Ocerro, M. Makumbi

XVIII International AIDS Conference, Vienna 18-23 July 2010

27. HIV prevalence among fishing communities in Northern Uganda. L. Ciccio, Q. Okello, A. Arach, D. Sera
28. Assessing quality of ART data among ART-providing health facilities in Northern Uganda. D. Sera, L. Ciccio, A. Ocerro, J. Arica, M. Makumbi
29. Engaging and mobilizing uniformed forces for HIV prevention in post conflict Northern Uganda. D. Sera, G. Adiyu, L. Ciccio, M. Makumbi
30. Challenges in implementation of recommended feeding options among HIV-positive mothers in Northern Uganda. D. Sera, L. Ciccio, A. Ocerro, B. Musana, M. Makumbi
31. Factors associated to PMTCT uptake among pregnant women in a rural district of Northern Uganda. P. Okello, L. Ciccio, A. Ocerro

32. Barriers to accessing and utilization of post exposure prophylaxis to minimize HIV infection among sexual violence survivors in post-conflict Northern Uganda. R. Kanwagi, A. Muhereza, D. Sera, F. Aliba, L. Ciccio
33. Integrated camps for HIV-related risk reduction and HIV counseling and testing among young people in post-conflict Northern Uganda. R. Kanwagi, D. Sera, M. Odipo, L. Ciccio, J. Otim
34. Enhancing health security in sexual unions through HIV counseling and testing among people in long-term monogamous relationships in Northern Uganda. R. Kanwagi, D. Sera, M. Opio, L. Ciccio, J. Otim
35. Improving the integration and performance of TB and HIV interventions in Northern Uganda. L. Ciccio, D. Sera, E. Tumusherure
36. Adherence to the national guidelines in the diagnosis of sputum negative tuberculosis: a case of Gulu Regional Referral Hospital in Northern Uganda. J.P. Otuba, L. Ciccio, E. Tumusherure
37. Improving data management through strengthening the Health Management System (HMIS) in post conflict Northern Uganda. D. Sera, M. Omoro, L. Ciccio
38. Innovative CD4 lymphocyte testing for rural communities in Northern Uganda. A. Ocerro, L. Ciccio, D. Sera, M. Makumbi
39. HIV prevention among young people in nursing and teaching colleges in Northern Uganda. R. Kanwagi, D. Sera, L. Ciccio, J. Otim
40. Utilization of HIV-related services by members of people living with HIV/AIDS networks in Northern Uganda. D. Sera, L. Ciccio, F. Rwekikomo, A. Ocerro, M. Makumbi
41. Mobilizing faith based intuitions to take the lead in fighting HIV-related stigma and discrimination in Northern Uganda. R. Kanwagi, D. Sera, L. Ciccio, J. Otim
42. Community based education services (COBES): an innovative approach to address human resource shortage in post-conflict Northern Uganda. W. Oloya, D. Sera, L. Ciccio, M. Makumbi
43. Retention of HIV-positive patients in ART programs in post-conflict Northern Uganda. A. Ocerro, K. Mugisha, L. Ciccio, M. Makumbi, R. Muwanika, E. Ssemafumu
44. Innovative strategies in improving coordination of HIV/AIDS response by local governments in post conflict Northern Uganda. D. Sera, L. Ciccio, W. Oloya
45. Scaling up home based care services in post-conflict Northern Uganda. D. Sera, L. Ciccio, M. Makumbi, F. Rwekikomo
46. Attitudes and perceptions of health workers in ART units towards changes of ART data management system in Northern Uganda. D. Sera, L. Ciccio, J. Arica, A. Ocerro

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47. Scaling up of early infant diagnosis in conflict-affected Northern Uganda. E. Kansiime, F. Kagwire, E. Ssemafumu, M. Makumbi, C. Kiyaga
48. Follow up of mothers identified through the PMTCT program and linking them to HIV care services: the Family Support Group model. E. Kansiime, F. Kagwire, E. Ssemafumu, A. Muhereza, M. Makumbi
49. Including Voluntary Counseling and Testing in the prevention package for youth in Northern Uganda. P. Ogen, D. Sera, L. Ciccìo.
50. Access to and uptake of PMTCT services by pregnant women in Northern Uganda: a cross sectional assessment. L. Ciccìo, D. Sera, M. Makumbi
51. HIV prevention among Commercial Sex Workers in a post-conflict setting. B. Adong, L. Ciccìo, D. Sera
52. Sexual and Gender Based Violence in a post-conflict setting. F. Aliba, L. Ciccìo, D. Sera
53. Gender-based violence and HIV: engaging communities to combat the problem in Northern Uganda. F. Aliba, L. Ciccìo, D. Sera

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54. Awareness of HIV sero-status among pregnant women in Northern Uganda: a cross-sectional assessment. L. Ciccìo, D. Sera
55. Integration of TB and HIV interventions in Northern Uganda. L. Ciccìo, E. Tumusherure, D. Sera
56. Assessing the knowledge and behavior towards HIV/AIDS among youth in Northern Uganda: a cross-sectional survey. L. Ciccìo, M. Makumbi, D. Sera

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57. Completeness and timeliness in a post conflict setting. D. Sera, L Ciccìo
58. Using small scale surveys to monitor knowledge and behavior on HIV/AIDS among youth in Northern Uganda. L Ciccìo, D Sera
59. Retention of Patients on Antiretroviral drugs at clinics at 3 levels of care in Post Conflict Northern Uganda. A. Ocerò, S. Pengpid, E. Ssemafumu

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60. Quality Assurance during Scale up of HIV Testing Using Rapid Tests: NUMAT Experience. M. Pedun, E. Ssemafumu

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61. An evaluative study on the relevance and effectiveness of training activities in Northern Uganda. L. Ciccìò, M. Makumbi, D. Sera

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62. Mobilizing Faith Based Organizations to Respond to HIV/AIDS Prevention and Confront Stigma and Discrimination. Author Block. L. Atim, S. Ajedra, J. Otim

63. Challenges to Service Delivery for People Living with HIV/AIDS in a Post-Conflict and Resource Limited Area: The Case of Northern Uganda. F. Rwekikomo, E. Ssemafumu, G. Akena

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64. Gaps in data management: survey of health units in post conflict Northern Uganda. D. Sera, M. Makumbi

65. Piloting of community based family support groups for HIV positive women and their families in post conflict Northern Uganda. F. Kagwire, E. Kansiime, M. Odipo, E. Ssemafumu, G. Otira, M. Makumbi

66. Involvement of people living with HIV/AIDS in the provision of HIV counseling and testing services to the internally displaced people of Northern Uganda. E. Kansiime, F. Kagwire, E. Ssemafumu, T. Takenzire, M. Makumbi







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