

## NUMAT TECHNICAL BRIEFS

### Working with the Existing Health System to Build Capacity & Enhance Tuberculosis/HIV Collaboration

NORTHERN  
UGANDA  
MALARIA,  
AIDS &  
TUBERCULOSIS  
PROGRAMME  
(NUMAT)

#### INTRODUCTION

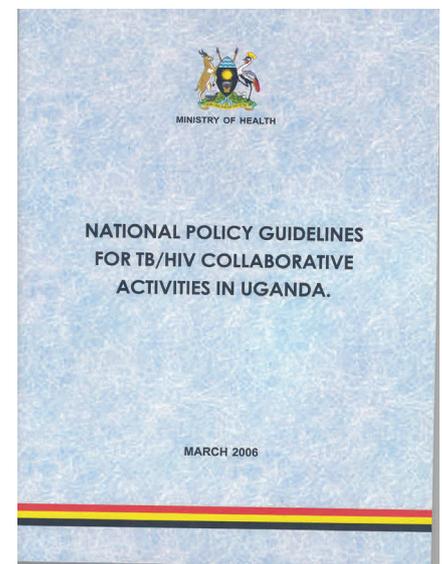
According to the World Health Organization's Global Tuberculosis (TB) Report for 2011, Uganda is one of the 22 countries in the world with the highest burden of this disease. The annual risk of infection (ARI) for TB in Uganda is estimated at 3% with an incidence of 330 cases per 100,000 for all TB cases and 136 cases per 100,000 for smear-positive pulmonary TB. HIV is the single strongest risk factor for reactivation of latent TB infection among persons living with HIV (PLHIVs). HIV-negative individuals with dormant or latent TB infection have a 10% lifetime risk that dormant bacteria will become active and cause TB, whereas persons co-infected with HIV and latent TB infection have a risk for TB reactivation of 7-10% per year.

An estimated 60% of TB patients in Uganda are co-infected with HIV and TB is the leading cause of mortality among PLHIVs, accounting for 30% of all deaths. This highlights the fact that HIV prevention, diagnosis, and care should be a concern for the National Tuberculosis and Leprosy Control Programme (NTLP), while TB care and prevention should be a priority intervention supported by the National AIDS Control Programme (NACP). This is particularly true in Northern Uganda, a region of the country comprised of 15 districts with an estimated population of 3,442,600 and currently recovering from a 20-year armed conflict that caused disruption of social service delivery, including health services. In addition to a weak public health system, the region is burdened with higher disease rates for infectious diseases such as HIV. HIV prevalence in the region is 8.2% compared to the national average of 6.4% (Uganda HIV Sero Behavioral Survey, 2005). No similar survey has ever been conducted in the country to assess regional TB incidence and prevalence estimates.

The need to provide integrated TB/HIV services in health facilities is critical in order to address TB in HIV patients and HIV burden among TB patients. Historically, integrating HIV activities was a challenge for the NTLP. Before 2006, TB and HIV in Uganda were vertically managed by two distinct programs within the Ministry of Health (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 impact was clear from service data recorded in 2006—only 43% of TB patients were tested for HIV and no information was recorded regarding cotrimoxazole prophylaxis treatment (CPT) and antiretroviral therapy (ART) for co-infected patients. Logistical challenges plagued the supply chain, which negatively impacted the flow of cotrimoxazole from the National Medical Stores (NMS) to health facilities.

Supportive supervision of TB/HIV services was dependent on the availability of donor funds, which were irregular. Districts had challenges absorbing and accounting for integration grants. Additionally, the supervisory role tended to be reserved for the zonal TB leprosy supervisor (ZTLS), district TB leprosy supervisor (DTLS), and sub-county health workers (SCHW) who also functioned as clinicians in facilities. As a result, TB and HIV service outlets, arguably sites with the greatest demand, were chronically understaffed. TB screening and treatment for HIV clients accessing TB care and support services remained low, given the erratic supply of drugs and laboratory consumables and equipment. This was further compounded by the fact that the reporting tools in use could not be used to capture TB/HIV service performance indicators.

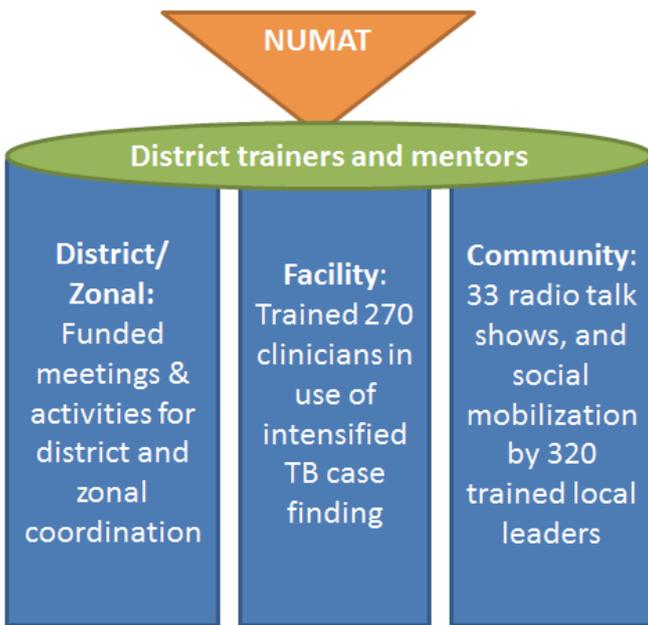


**TB/HIV integrated awareness session at a NUMAT-supported health facility.**

## NUMAT INTERVENTION

The Northern Uganda Malaria, AIDS and TB Programme (NUMAT), a six year USAID-funded program, had the overall goal of increasing access to and utilization of quality malaria, HIV & AIDS, and tuberculosis prevention, treatment, care, and support services in 15 districts of North Central Uganda. Collaborating with the existing district and national structures rather than adopting a direct implementation strategy, NUMAT worked with partners to address the challenges of accessing and delivering integrated TB/HIV and malaria services. NUMAT has focused on supporting a model that ensures all interventions are owned by the districts and builds capacity for sustainability at the community, facility, district, and zonal levels (see Figure 1).

Figure 1: NUMAT has built capacity for TB/HIV interventions at community, facility, and district/zonal levels



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 each district. NUMAT held two dissemination workshops to sensitize 320 district leaders on the TB/HIV Guidelines and Communication Strategy documents, newly developed by the MOH. These documents were distributed to district leaders as well as to health facilities to empower them to speak in one voice on TB/HIV and the benefits associated with seeking care for both diseases. Radio talk shows, hosted by local political leaders, were also used to build demand for TB services and inform communities about TB control policies, programs, and services. All community leaders were trained to further engage society and partners in the Stop TB campaign through use of the messages provided in the Communication Strategy for TB/HIV Collaboration published by Ministry of Health and widely disseminated to districts.

In addition to social mobilization, TB/HIV integration practices were put into place in health facilities. With mentoring and technical assistance from the TB Control and Assistance Program (TB CAP), NUMAT staff and three selected district TB focal persons formed the Northern Uganda regional master trainers' team for TB/HIV integration. Facilitated by this team, nine district 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. Responses were used to triage symptomatic patients for immediate sputum smear. 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 funds for TB/HIV activities and coordination meetings at the district level. Quarterly district-level planning meetings were institutionalized in all 15 districts for review of TB/HIV services and workplan development, under the responsibility of the DTLs. Funds were also provided to the districts for monthly facility level support supervision and mentoring of health workers. At the zonal level, NUMAT funds a zonal TB/leprosy supervisor, as well as a quarterly district review meeting attended by all DTLs. The supervisory role of the zonal office gained more relevance through regular review of district performance in TB/HIV integration, re-distribution of drugs to facilities nearing stockout, and delivery of TB/HIV integrated service IEC materials. Additionally, with all zonal stakeholders present at these meetings, it allowed for greater harmonization of approaches, eased transfer of patients, quick identification of defaulters, and initiation of tracing.

Due to the importance of TB treatment initiation and completion, NUMAT provided support to strengthen drug logistics management at the district level. Ordering cotrimoxazole through the credit line system with the NMS led to persistent delays and stockouts at both at the facility and district level. NUMAT worked closely with the facilities after training 75 health workers from 15 districts in drug logistics management and delivered cotrimoxazole orders to NMS on behalf of the health facilities, ensuring correct NMS-designated ordering cycles by district. An emergency procurement plan was also developed and buffer stock of cotrimoxazole delivered to 30 NUMAT-supported sites, when the country experienced a national stockout of cotrimoxazole delivered through NMS.

Equal emphasis was also given to prevention, identification, and proper management of TB cases among PLHIV receiving HIV chronic care at NUMAT-supported facilities. Capacity was built among clinicians at all health care levels in co-management of the dual infection. Also, at the community level, volunteers were trained in basic skills and engaged in active TB case finding through early detection and referral of TB suspects. Policy documents on ART provision were subsequently revised by the MOH and TB patients were recognized



TB/HIV integrated awareness session at a NUMAT-supported health facility.

as a priority group eligible for ART enrolment, even in the absence of a CD4 test count result.

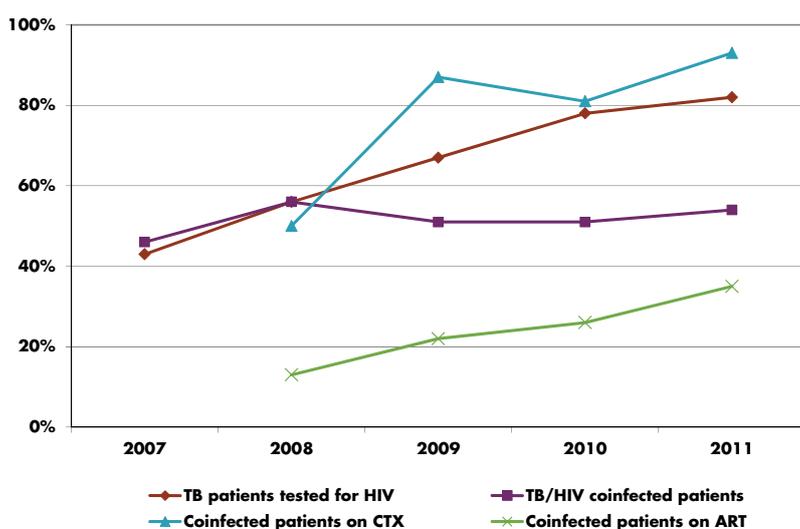
NUMAT also invested heavily in making HIV counseling and testing (HCT) services widely available at all TB diagnostic and treatment sites. The project also improved laboratory services—including TB laboratory diagnosis—through capacity building, infrastructure development, provision of equipment and supplies, and quality assurance activities.

NUMAT’s TB/HIV interventions discussed above are currently ongoing in an effort to strengthen the management of TB/HIV co-infection in Northern Uganda. Through training, technical assistance, and funding to district offices, the capacity to deliver effective TB/HIV services has been increased at the community, health facility, and district levels and can now be maintained in the medium-to-long term with minimal external support.

## RESULTS

The results of NUMAT’s support in TB/HIV integration are reflected in the large improvements seen in the indicators shown in the graph below.

Figure 2: Trend over five project years of TB/HIV performance in NUMAT-supported districts



Project Year 5 registered significant achievement in both the proportion of TB patients tested for HIV and the proportion of TB/HIV co-infected patients put on cotrimoxazole preventive therapy and initiated on ART, in-line with current TB/HIV co-management guidelines, compared to previous years. Nearly 90% of TB patients who were counseled and offered HIV testing accepted to be tested. No differences were found between men and women on the proportion of patients tested for HIV and of the co-infected patients started on CPT and ART.

The percentage of TB/HIV co-infected patients in the region has stabilized between 50% and 60% over the years, with HIV prevalence among female patients slightly but consistently higher than among males (58% and 52%, respectively, in 2011).

A recent analysis conducted with 218 TB/HIV co-infected patients enrolled into treatment in 2010 established that the TB treatment

outcome was remarkably better among those on CPT, who experienced a significantly higher rate of treatment completion and success.

Through the adoption of the community-based directly-observed treatment short course (CB-DOTS) approach, the TB case detection and TB treatment success rates for the NUMAT-supported districts also improved from 66% and 83% in 2007 to 92% and 86% in 2011, surpassing the WHO-recommended global targets of 70% case detection and 85% treatment success for successful control of TB in high burden countries.

## LESSONS LEARNED

- Regional teams of master TB/HIV trainers provided a peer-to-peer supervision model that was more useful than the routine didactic trainings previously conducted. Regional teams imparted knowledge and skills to the health staff during trainings and then continued follow-up mentoring at the facilities.
- 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 use of community leaders and radio broadcasts were critical in garnering local support for TB/HIV service uptake. Politicians were especially eager to participate in radio broadcasts. There was greater community awareness about the need to screen for HIV in TB patients and vice versa. However, this created greater need to address stigma reduction—the downside of increasing community awareness about the relationship between the two diseases.
- NUMAT supplemental funding to the zonal office revived TB/HIV control activities in the districts and enabled fruitful interactions among districts and other actors involved in the TB/HIV control program. Particularly, this highlighted that the quarterly zonal meeting is an important forum in which to compare and discuss outcomes, approaches, and solutions to practical implementation problems. The focus of these meetings has steadily shifted from a review of TB-specific performance to a broader analysis of TB and TB/HIV results.
- The changes that were introduced by NTLF in the quarterly reporting format to accommodate more detailed information on patients started on anti-TB treatment have been well received by the various DTLSs who did not perceive them as an extra burden, but rather endeavored to compile their reports in a timely and comprehensive manner.
- The revised National ART Treatment Guidelines provided greater consideration for the co-management of the two disease conditions (TB and HIV) and was simpler for health workers at lower level health facilities (e.g. HCIIIs) to comprehend and implement in that setting.

## CHALLENGES

- Insufficient or erratic supply of drugs and consumables (e.g. 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.
- Lack of diagnostic equipment and supplies (e.g. radiology equipment) at referral centers, as well as the expense associated with accessing these referral services, remains a significant challenge in the management of more complicated forms of TB.
- There is still inadequate access and availability of diagnostic and treatment services for multi-drug resistant TB (MDR-TB).
- Despite the fact that HIV parameters were included in the TB cohort reporting and HIV information added to the TB registers, the registers currently in use still have some shortcomings. Specifically, the registers have provision for indicating how many patients were started on CPT and ART, but little information is available about those who continue regularly with both treatments throughout the duration of their anti-TB treatment.
- The standardized coding and compiling of the TB register (see picture below) are seldom error-free, especially at facilities with large caseloads. This makes data collection and patient cohort

analyses challenging. High staff turnover rates and the fact that minimal instructions are given to low-level personnel delegated to fill in the registers, are some of the reasons why there is inadequate record keeping.

## CONCLUSION

It is clear from the NUMAT experience in the integration of TB and HIV services that this is a critical component to the reduction of the disease burden for both diseases. The success of this shift from a vertical approach to an integrated collaboration is evidenced by the upward trend in the TB/HIV service performance indicators in Northern Uganda, following the program interventions described here. TB and HIV programs are finally seen as collaborating together toward truly integrated TB/HIV prevention, treatment, care, and support services.

The intervention described was rolled out in collaboration with the district staff and implemented at all levels: community, facility, district, and regional. Working with district staff as trainers and mentors for interventions, as well as establishing district and zonal supervision patterns, has built up district and zonal capacity in a manner that can be affordably maintained and continued by the district TB control program. With adequate emphasis placed by districts on TB activities, regular monitoring of TB performance indicators, and corrective measures to tackle identified challenges, the results accomplished in Northern Uganda so far can be sustained beyond the NUMAT project lifespan.

File Number	Date and results of sputum examination (No. indicate month of treatment)				Date treatment stopped				Remarks	
	2	5	8	11	Completed	Completed	Not Completed	Not Completed		
					Smear Negat.	Smear Positive	Smear result not available	Died	Transferred out Name of Distr. Date	Defaulted
C12							Completed			
C12				11/10						
C12							Completed			
C12				12/09	09	11/21/10				
C12								DIED		
H11									Podew H11 III	(18)
H11										
C12				17/01/10	12/01/10		Comp.			
C12										
C12				10/01/10	10/01/10		Comp.			
C12										
C12				10/01/10	10/01/10		Comp.			
C12										

Sample of TB Unit Register with missing information.

NUMAT is a six-year, USAID-funded project designed to expand access to and utilization of HIV, tuberculosis, and malaria prevention, treatment, and care, and support activities in conflict-affected districts of Northern Uganda.

Over the course of the project, NUMAT has expanded the geographic coverage and populations served through strengthening local government responses, expanding the role of communities in planning implementation and monitoring activities, and building upon existing networks.

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JSI Research & Training Institute, Inc.

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