



Lessons Learned in Scaling Up TB/HIV Collaborative Activities



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Mary Dallao, Family Health International

René L' Herminez, KNCV Tuberculosis Foundation

Benjamin Weil, Consultant





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- **Jeroen van Gorkom**, TB CAP, KNCV Tuberculosis Foundation
- **Mukadi Ya Diul**, TB CAP, Family Health International

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Benjamin Weil, Consultant



Acronyms

AIDS	Acquired immunodeficiency syndrome
ART	Antiretroviral therapy
ARV	Antiretroviral drug
CDC	US Centers for Disease Control and Prevention
COC	Continuum of care
CPT	Cotrimoxazole preventive therapy
DFID	Department for International Development (UK)
DOTS	Directly observed testing, short course
FHI	Family Health International
HIV	Human immunodeficiency virus
IPT	Isoniazid preventive therapy
JICA	Japan International Cooperation Agency
MOH	Ministry of Health
MSF	Médicins Sans Frontières
NAP	National AIDS Program (Malawi)
NGO	nongovernmental organization
Norad	Norwegian Agency for Development Cooperation
NTP	National Tuberculosis Program (Malawi)
OI	Opportunistic infection
PEPFAR	US President's Emergency Plan for AIDS Relief
PICT	Provider-initiated counseling and testing
PLHIV	People living with HIV
SOP	Standard operating procedure
SS-	Sputum-smear negative
SS+	Sputum-smear positive
SWAp	Sector-wide approach
TB	Tuberculosis
TB CAP	Tuberculosis Control Assistance Program
TWG	Technical Working Group (Malawi)
UN	United Nations
USAID	US Agency for International Development
VCT	Voluntary counseling and testing
WHO	World Health Organization

Scaling Up TB/HIV Collaborative Activities in Cambodia, Kenya, and Malawi

The scaling up of joint TB/HIV collaborative activities is a high priority in countries and settings where the two diseases are prevalent, as these activities allow for reducing the impact of the HIV epidemic on TB control and the burden of TB on HIV-infected individuals.

This scale-up is even imperative, given evidence from the small-scale ProTEST Project in Malawi, South Africa, and Zambia showing that implementing joint TB/HIV activities is feasible and cost-effective.¹ The increased level of funding for joint TB/HIV interventions provides the opportunity for scaling up these activities.

Tuberculosis (TB) is known to be especially life-threatening when a patient is also infected with HIV. The two diseases form a lethal combination: TB is the leading cause of death among people who are HIV-positive, accounting for 13 percent of AIDS deaths worldwide.²

During the past 10 years, HIV has been the single most important factor determining the increased incidence of TB in Africa.

International advocacy efforts relating to TB and HIV have been led by the World Health Organization (WHO) and its international partners. They formed the TB/HIV Working Group to make recommendations on how to address the relationship between the two diseases, develop global policy on the control of HIV-related TB, and advise those dealing with TB and HIV on how they can work together.

The WHO's 2004 *Interim Policy on Collaborative TB/HIV Activities* suggests steps for creating collaborative mechanisms between national TB and AIDS programs and reducing the burden of TB among people with HIV and the burden of HIV among TB patients.³ While the policy provides a useful model to countries scaling up TB/HIV collaboration, the rate at which it has been

TB is the leading cause of death among people who are HIV-positive, accounting for 13 percent of AIDS deaths worldwide. During the past 10 years, HIV has been the single most important factor determining the increased incidence of TB in Africa.

adopted and TB/HIV collaborative activities implemented has varied from country to country.

The Tuberculosis Control Assistance Program (TB CAP), funded by the US Agency for International Development (USAID) and managed by eight international organizations active in TB control,⁴ hopes to encourage acceptance of the WHO *Interim Policy* and foster the scale-up of TB/HIV collaboration

Cambodia, Kenya, and Malawi have different disease burdens and HIV epidemiologic patterns, and they all have had some success in scaling up TB/HIV activities.

by publishing these case studies and lessons learned from Cambodia, Kenya, and Malawi.

These countries have different disease burdens and HIV epidemiologic patterns, and they all have had some success in scaling up TB/HIV activities.

The three were selected after ranking TB/HIV coverage and scale-up in every country, as expressed by the number of districts or states implementing collaborative TB/HIV activities and the percentages of HIV-infected TB patients detected, TB patients tested for HIV, people living with HIV screened for TB, and people living with HIV on isoniazid preventive therapy (IPT).

TB CAP consultants traveled to each country to investigate on the

extent to which activities considered important in the WHO *Interim Policy* had been carried out to scale up TB/HIV services. Findings were derived from interviews with key stakeholders from national TB and AIDS programs, community groups, and donor agencies. The case studies explain how mechanisms for collaboration were established in each country and what was done to decrease the TB burden among HIV-infected people and the burden of HIV among TB patients. The studies reflect conditions when data were collected.

Establishing Mechanisms for Collaboration

Governments in each of the three countries facilitated TB/HIV collaboration by forming working groups charged with leading and implementing joint TB/HIV activities that had broad representation of all stakeholders—from national TB and HIV/AIDS program staff to implementing partners and people living with HIV. The working groups met regularly to discuss progress, and they developed policies, frameworks, and standard operating procedures (SOPs) to guide healthcare workers on the ground.

CAMBODIA

Leadership

In 1999, Cambodia's national TB and AIDS programs formed a subcommittee on TB/HIV collaboration. That it was led by the country's secretary of state signaled the government's endorsement of TB/HIV collaborative efforts. Subcommittee members included national TB and AIDS program staff as well as partners and donors working on TB/HIV, including the WHO, the Japan International Cooperation Agency, USAID, and the US Centers for Disease Control and Prevention (CDC).

Policies

In 2005, Cambodia's national TB and AIDS programs released a joint statement on TB/HIV, an important policy document that reaffirms the commitment of both programs to TB/HIV collaboration. The statement details efforts to be made in providing joint care and treatment, including in supplying adequate drugs and test kits, training health personnel, and carrying out monitoring and evaluation.

Cambodia was one of the first countries in Southeast Asia to develop a national policy on HIV

counseling and testing for TB patients, as recommended by the WHO. The national AIDS and national TB programs produced a National TB/HIV Framework that addresses diagnosis and referral, epidemiological classification, monitoring and evaluation, and capacity building.⁵ The framework is supported by Cambodia's *Standard Operating Procedures for Prompt Testing of TB/HIV and Rapid Access to Treatment and Care Services*.⁶

At the same time, the National AIDS Program developed *The Operational Framework for the Continuum of Care for People Living with HIV/AIDS*.⁷ Cambodia's Continuum of Care (COC) supports a successful network of daytime care centers that provide a variety of services, including screening for opportunistic infections (OIs), which is especially relevant for individuals who are co-infected with TB.

Other Measures

Cambodia also worked to improve surveillance by revising district TB registers to capture information about a patient's HIV status. The testing for TB of people living with HIV is less well documented, since the National AIDS Program tracks only OI screening, without

specifying when the infection is TB. In collaboration with the National TB Program, the National AIDS Program is developing a form to standardize TB symptom-screening and TB diagnosis. It will be used within antiretroviral therapy (ART) and OI services for people living with HIV, and may facilitate the collection of more reliable data on co-infection.

KENYA

Leadership and Policies

In 2000, Kenya's national TB and AIDS programs were brought together in the same building to facilitate collaboration. Two years later, the two programs developed proposals and work plans for phased implementation of collaborative TB/HIV activities.

Through a workshop, a TB/HIV Steering Committee was formed with representation from the national TB and AIDS programs, CDC, and implementing partners. A TB Interagency Coordinating Committee also was formed that meets quarterly.

A smaller working group was tapped to draft documents pertaining to TB/HIV collaboration, including the *Policy on HIV Testing*

in Health Care Settings. The formal launch of this policy in 2005 prompted rapid uptake of HIV testing for TB patients all over the country and paved the way for adoption of widespread, routine HIV testing of TB patients through provider-initiated counseling and testing. Kenya also developed policies on cotrimoxazole preventive therapy (CPT) and on ART provision and regimens.

Other Measures

Significant funding from the Stop TB Partnership, the Global Fund to Fight AIDS, Tuberculosis, and

In Kenya, the 2005 launch of the Policy on HIV Testing in Health Care Settings prompted rapid uptake of HIV testing for TB patients all over the country and paved the way for adoption of widespread, routine HIV testing of TB patients through provider-initiated counseling and testing.

Malaria, and the US President's Emergency Plan for AIDS Relief (PEPFAR) enabled Kenya to hire additional staff at provincial and district levels to implement an integrated TB/HIV recording and reporting system. Kenya is the first African country to report TB cases using such a system countrywide, as recommended by the WHO.

The National TB Program adjusted its tools in 2005 so they conformed to WHO guidelines and included TB/HIV indicators as well as information on referrals. The system was fully in place at community, district, and provincial levels within

six months, thanks to close staff supervision and strict data reporting requirements. As a result, the percentage of TB cases tested for HIV increased dramatically—from 32 percent in the third quarter of 2005 to 68 percent in the last quarter of 2006.

The designation of one person as the TB/HIV coordinator was helpful. The coordinator began working in the National TB Program's central unit in 2005, and was mandated to implement the Global Fund plan to initiate TB/HIV in 10 districts and coordinate activities with other partners. Previously, the person in this position had reported to the National AIDS Program, an arrangement that proved less successful in generating results.

MALAWI

Leadership

In Malawi, efforts to integrate TB and HIV activities began through the WHO-supported ProTEST Project, which started in 1997 and focused on scaling up HIV counseling and testing and care for TB patients.

When ProTEST ended in 2002, Malawi's Ministry of Health encouraged continuation of the

project's work by developing the *Three-year Development Plan for the Implementation of Joint TB and HIV Services*.⁸ This plan recommended that TB patients receive routine HIV counseling and testing and that HIV-positive TB patients have access to CPT and ART. The plan was successfully implemented: over 90 percent of TB/HIV co-infected patients had received CPT by the end of 2007.

Malawi's health systems are underpinned by a sector-wide approach (SWAp), which encourages donors to contribute funding to a common pool that finances multiple programs and has helped strengthen TB/HIV collaboration.

Malawi's TB/HIV Technical Working Group (TWG), which includes representatives from national AIDS and TB programs, nongovernmental organizations (NGOs), and TB CAP, meets quarterly to develop policies and discuss national-level TB/HIV coordination. The TWG's secretary is a national TB/HIV officer, a position created by and based at the National TB Program. This has helped to mainstream the integration of TB/HIV activities.

Traditional village chiefs and traditional healers have been involved in

Malawi's TB/HIV Technical Working Group, which includes representatives from national AIDS and TB programs, nongovernmental organizations, and TB CAP, meets quarterly to develop policies and discuss national-level TB/HIV coordination.

TB/HIV awareness-raising activities, and their involvement has helped increase acceptance of integrated services in communities.

Other Measures

A TB/HIV integrated supervision checklist and an integrated client register introduced in 2007 have the potential to greatly strengthen monitoring and evaluation.

Malawi also has worked to strengthen human resources to provide joint services. An important component of these efforts is the training of service providers, who have received capacity building on issues such as TB/HIV interaction, management of OIs, and nutrition. Staff of the National Aids Program have trained ART teams in hospitals and large private clinics in ART management, TB screening, and referrals to diagnostic centers.

Implementing Interventions to Decrease TB Burden among People Living with HIV/AIDS

The WHO *Interim Policy* advises that the burden of TB among people living with HIV can be decreased by screening HIV-infected people

for TB, providing IPT, and practicing good infection control in congregate settings.

The three countries featured in this report are at different levels in implementing these activities. Though screening for TB among symptomatic, HIV-infected people often takes place as part of the routine management of OIs, in many instances, this occurs in the absence of an appropriate recording and reporting system. For this reason, it was difficult to estimate the yield of this activity. Though IPT is recognized as an important intervention for managing the care of HIV-infected people, it was either not implemented or implemented to a very limited degree in the three countries.

CAMBODIA

Decreasing the burden of TB in HIV-infected patients has been facilitated by the COC, an approach spearheaded by the National AIDS Program in 2002. The COC is based on the premise that treatment of a patient's HIV infection is not the sole concern of healthcare providers; rather, the consequences of HIV must be addressed as well, including

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OIs, mental health issues, and social and legal concerns.

Through the COC's network of daytime care centers for people living with HIV (called Mondul Mith Chouy Mith, or Friends Helping Friends), peer support, OI screening (including screening for TB), antiretroviral drugs (ARVs), spiritual support, and counseling and other services are provided.

Although data recording systems do not capture the number of HIV-infected patients being screened for TB as part of the National AIDS Program's COC, it is believed that most are tested as part of routine OI screening provided at the care centers. Many credit the COC for

high referral rates to TB screening for people living with HIV; in Battambang Province, the rate was as high as 99 percent.

Cambodia's national AIDS and TB programs developed SOPs for screening people living with HIV for TB. Training in TB screening is part of the National AIDS Program's curriculum for staff, and TB status is mentioned on each patient's clinical report.

Through initiatives supported by the National AIDS Program, HIV-infected patients cannot begin ART without having been screened for OIs, including TB. Home-based care workers also visit patients regularly who are watchful for signs

Kenya's efforts to decrease the burden of TB in HIV-infected patients are facilitated by the presence of comprehensive care centers at all levels—community, district, and provincial.

of OIs like TB. These workers help ensure that patients can access care, refer them for TB testing, and help provide transportation support if necessary.

KENYA

Kenya's efforts to decrease the burden of TB in HIV-infected patients are facilitated by the presence of comprehensive care centers at all levels—community, district, and provincial—that provide a variety of services, including HIV counseling and testing and TB screening. The co-location of TB and HIV services makes it more likely that patients initially being treated for either disease will be tested for the other.

Although some questions are asked to identify a TB suspect during uptake for ART, there is no routine TB screening system for people living with HIV. In recent discussions between the national TB and AIDS programs, it was suggested that TB health staff be introduced into the comprehensive care centers. If this were to happen, TB staff would be responsible for screening HIV patients and treating those diagnosed with TB. However, infection control could then become a problem,

since known HIV patients would be mixing with known TB patients.

Another suggestion was that the HIV testing of suspected TB cases should occur at the outpatient department or ward level. Kenya will pilot this kind of testing in one or two places.

MALAWI

The main strategy adopted recently for decreasing the TB burden among HIV-infected people has been to screen them by using a simple questionnaire on TB symptoms and signs, then referring them for TB diagnosis and treatment, as necessary. In some locations, much of this work is conducted by community-based organizations, which groups also encourage the use of sputum collection points throughout their districts. Samples collected at these points are taken to community health centers for TB testing.

Implementing Interventions for Decreasing the HIV Burden among TB Patients

In all three countries, there has been major progress in

implementing interventions to decrease the HIV burden among TB patients. Screening for HIV in TB patients increased from 10 to 45 percent in Cambodia between 2006 and 2007, from 60 to 79 percent in Kenya between 2006 and 2007, and from 60 to 87 percent in Malawi between 2006 and 2007. In addition to the increase in uptake of HIV screening among TB patients, access to ART and CPT has also increased in the three countries.

CAMBODIA

In 2006, the percentage of TB patients tested for HIV was low—slightly less than 10 percent—but improvements in testing procedures have resulted in significant gains. In 2007, 45 percent of registered TB patients with unknown HIV status were referred for HIV testing, and 40 percent were tested. Of those found to be HIV-infected, 70 percent received CPT and 30 percent began ART. In addition, the rate of HIV infection among TB patients in Cambodia declined between 2003 and 2007, from 11.8 percent to 7.8 percent.

The testing of TB patients for HIV follows SOPs developed to support the TB/HIV Framework mentioned

earlier. However, difficulties initially ensued when TB patients diagnosed and treated at the community level were referred for district-level HIV counseling and testing located a long distance away. Often, patients did not have the time, will, or means to travel to these facilities, and transportation support, provided by home-based care workers, has been inconsistent in parts of the country.

More recently, HIV testing has been greatly scaled up because staff followed one of the recommended SOPs relating to HIV testing for TB patients: the testing is promoted, blood is drawn from the TB patient at the health center, then it is sent to the nearest HIV counseling and testing site for analysis.

In other instances, particularly at a pilot TB/HIV site in Phnom Penh Province, healthcare workers provided mobile HIV counseling and testing services and visited health centers. While not yet widely implemented, mobile HIV-counseling and testing services significantly increased HIV testing among TB patients. In the province, 71.3 percent of newly registered TB patients were tested for HIV by means of this system; about 80

In Cambodia, HIV testing has been greatly scaled up because staff followed one of the recommended standard operating procedures relating to HIV testing for TB patients: the testing is promoted, blood is drawn from the TB patient at the health center, then it is sent to the nearest HIV counseling and testing site for analysis.

percent of HIV-infected TB patients received CPT; 76.8 percent were referred to home-based care teams; and 12.5 percent began ART.

KENYA

In the early days of TB/HIV collaboration, TB patients received at pilot sites were referred for HIV testing to freestanding counseling and testing centers; however, only one in eight referred actually sought testing, and none were put on ART or CPT.

Kenya's current TB/HIV policy states that provider-initiated counseling and testing (PICT) should be offered to all TB patients. In practice, TB patients are diagnosed by medical or clinical officers anywhere they obtain care, and counseling and HIV testing is offered at these points.

Most settings have adapted their outpatient departments to accommodate PICT, and its rapid onsite testing provides immediate results. HIV-positive patients are referred to the nearest comprehensive care center for intake into an ART program.

At larger centers such as district and provincial hospitals, transportation is not a major concern because ART

programs are located on the same premises as TB clinics. However, referring HIV-positive TB patients from decentralized, HIV-testing, TB diagnostic clinics to centralized ART programs still results in considerable delay and default.

All HIV-positive TB patients are provided with CPT through the services of the National TB Program. HIV-negative patients are referred to the nearest voluntary counseling and testing clinic for further counseling.

Since 2005, the National TB Program has based the training of peripheral healthcare workers on modules developed by the WHO that emphasize the tasks the workers are expected to carry out in TB control programs. There has been increasing inclusion of TB/HIV issues in traditional TB training.

Reportedly, 28 percent of TB patients found to be HIV-infected accessed ARVs in 2007. However, the actual percentage was lower, since a considerable number of "referred patients" who had not yet started ART were recorded as "patients on ART". On the other hand, the reporting system being used in the second half of 2007 (when information was collected)

did not report cases that start ART during the second and third quarter of TB treatment. The average uptake into ART takes four to six weeks, and many patients started ART too late to be included in the notification report.

Other factors have contributed to low ART access among HIV-infected TB patients. First, it is fair to say that the ART program is small but expanding. The limited number of comprehensive care centers providing ART—210 as of December 2006—contribute to a low level of ART provision.

While most TB diagnostic centers, including more peripheral ones, provide PICT, patients who tested HIV-positive at these sites needed to invest in travel and laboratory services, and they often have not been able to do so. Standard laboratory tests (such as CD4 and liver function tests) are often expensive, although some facilities subsidize or waive these fees for the very poor. Local shortages of test kits and ART may also be a factor.

MALAWI

Malawi's system features provider-initiated HIV counseling and testing of every TB patient. District TB

In Kenya, referring HIV-positive TB patients from decentralized, HIV-testing, TB diagnostic clinics to centralized ART programs still results in considerable delay and default.

officers have been trained to promote HIV counseling and testing, and this, along with the placement of lay counselors in TB clinics, has helped increase uptake.

Central hospitals were the initial sources for TB/HIV joint services, but they are now available at all 28 districts and in mission hospitals, with some community health centers providing joint services—or at least counseling and referrals—to larger facilities. Laboratory testing for TB, once available only at the district level, has been decentralized to a number of community health centers over the past several years.

At community levels, community-based organizations offer HIV counseling and referrals for HIV testing to TB patients. The organizations also help instruct others on the need for HIV and TB testing and on how to manage TB patients, including drug adherence and nutrition.

As a result of the systems in place, more TB patients are being counseled and tested for HIV, the uptake of CPT has been very good, and the uptake of ART among TB patients has increased from 4 to 34 percent.

When TB/HIV integration first began, ARVs were not widely available. However, their increasing availability has been one of the greatest successes in Malawi's efforts to mitigate the effects of HIV/AIDS. Increased access to free ARVs has reduced HIV-related deaths by 75 percent over the past four years. In turn, the greater availability of ART and CPT has increased the effectiveness of joint services.

Overall Lessons Learned and Moving Forward

The following summarizes some key findings of the case studies.

Offering TB patients provider-initiated counseling and testing for HIV significantly increases the number of patients who are tested. Client-initiated counseling and testing for HIV—voluntary counseling and testing (VCT)—is not as effective among TB patients, particularly if the service is not conveniently accessed and located outside the health facility they visit for TB care. This is more likely in rural areas.

Through PICT, a trained healthcare professional in Kenya routinely advises that a TB patient be tested for HIV, provides counseling, and ensures that testing occurs right away—ideally by the same staff in the same location.

Through PICT, a trained healthcare professional in Kenya routinely advises that a TB patient be tested for HIV, provides counseling, and ensures that testing occurs right away—ideally by the same staff in the same location. Through this approach, more than 95 percent of TB patients were tested for HIV at Eastern Deanery and Blue House Clinics in Nairobi, the first centers in Kenya to offer PICT routinely to all TB patients.

Cambodia's early VCT program that required TB patients to sometimes travel significant distances to other facilities for HIV testing

resulted in far lower testing rates for TB patients.

Recent attempts to transport blood samples to labs from community health centers have resulted in much higher rates of testing. Whatever system is in place for sending patients for TB or HIV testing, it must ensure that testing is conveniently located for patients.

All study informants considered it absolutely critical to invest resources in cross-training staff in TB/HIV, especially those at community health centers. Many staff on the ground were concerned that implementing TB/HIV collaborative activities would significantly increase staff

Whatever system is in place in Kenya for sending patients for TB or HIV testing, it must ensure that testing is conveniently located for patients.

workload and possibly impact service quality. Some thought it would be necessary to seek additional staff, especially during scale-up.

TB cases are normally first detected and treated at community-level health centers, and their staff need to be trained to provide HIV counseling and testing onsite.

Training in TB screening and diagnosis is also very important in ensuring early case-detection and prevention of TB infection in the health facility, as well as in minimizing TB morbidity and mortality, especially among HIV-positive individuals. Refresher training is also valuable.

Of course, such training does not come without cost, and national TB and AIDS programs are often sorely underfunded. More financial resources need to be invested in national TB and AIDS programs, particularly in the hiring and training of additional staff.

Gradually scaling up joint TB/HIV activities by starting with three or four pilot projects has proved to be a successful way to build collaboration.

Malawi and Cambodia began their TB/HIV collaborations with activities in a few pilot sites, and these paved the way for greater expansion. Most pilot sites were chosen based on high HIV prevalence in the area.

Later, expansion sites were chosen based on their capacity to handle additional responsibilities. Scale-up, of course, is contingent on the availability of funding to support it.

Despite knowledge about its efficacy, IPT was not provided to HIV-infected individuals with latent TB infection in Cambodia, Kenya, and Malawi, even though these countries have maintained relatively good TB/HIV collaborative interventions.

In Cambodia, a lack of confidence in the ability of healthcare providers to exclude active TB in HIV-positive individuals resulted in reluctance to provide IPT.

Though many persons interviewed stated that introducing IPT is a high priority, in 2006 only a small number of TB patients in Cambodia were receiving IPT and there were no reported cases in Kenya and Malawi.

Healthcare providers interviewed stated that improved diagnostic algorithms for excluding active TB, increased resources, and staff training in accurately diagnosing TB in HIV-infected people are critical in enabling countries to confidently introduce IPT for those who need it.

Joint monitoring and evaluation is very important in TB/HIV collaboration, as is the training of staff in these joint systems.

Monitoring and evaluation needs to be better integrated and data collection more standardized, and both need to be combined with training.

All three countries introduced a revised recording and reporting system capturing TB/HIV, as proposed by the WHO. Still, more attention needs to be paid to collecting data on TB testing among patients first known to be HIV-positive.

National TB programs in all three countries recorded the number of TB patients tested for HIV or with an already known HIV test result, but national HIV/AIDS programs did not track the number of HIV-positive patients tested for TB. This makes it difficult to state definitively that TB

testing is taking place. Though this testing is most likely being done as part of routine OI screening, TB is not being tracked separately.

The lack of data in this area could also suggest that TB case-finding among HIV patients is inadequate and needs to be improved.

Healthcare officials in Malawi believe more needs to be done to make TB services available to HIV-positive individuals.

There needs to be greater access to ART for TB patients who test positive for HIV infection.

Even in the countries where most TB patients are being tested for HIV, a low percentage of those eligible for ART receive treatment in a timely manner.

In Kenya, less than 28 percent of eligible TB patients accessed ARVs in 2007; in Malawi, the percentage was 34. In Cambodia, TB patients are not tracked separately, so it is impossible to know how many are on ART.

Though sometimes ART services are too centralized and difficult for patients to reach, the reasons for TB patients not receiving ART are

Healthcare providers interviewed stated that improved diagnostic algorithms for excluding active TB, increased resources, and staff training in accurately diagnosing TB in HIV-infected people are critical in enabling countries to confidently introduce IPT for those who need it.

complex, and more investigation is needed.

Implementing TB/HIV collaborative activities can be challenging for countries if their national TB and AIDS programs have evolved separately.

In Cambodia, Kenya, and Malawi, collaborative efforts were led by national TB programs, with some participation and investment in TB/HIV by national AIDS programs. Joint collaborating bodies were established, but they often ended

up meeting infrequently or not at all. Joint policy documents were prepared stating the importance of TB/HIV, but these were often vague.

More detailed SOPs are needed to help healthcare staff in their daily work. The designation of one staff person as TB/HIV coordinator facilitated collaboration in Kenya and Malawi, but this was more effective when that person was affiliated with the National TB Program, rather than with the National AIDS Program. ●

Notes

- 1 http://whqlibdoc.who.int/hq/2004/WHO_HTM_TB_2004.336.pdf
- 2 Corbett EL, Watt CJ, Walker N, et al. "The growing burden of tuberculosis: Global trends and interactions with the HIV epidemic," *Arch Intern Med* 2003 (163): 1009–1021.
- 3 www.who.int/hiv/pub/tb/en/Printed_version_interim-policy_2004.pdf
- 4 TB CAP aims to decrease morbidity and mortality from TB and HIV by increasing TB case-detection and treatment in USAID-supported countries: Botswana, Brazil, Cambodia, Costa Rica, Democratic Republic of Congo, Djibouti, Dominican Republic, El Salvador, Ethiopia, Ghana, Indonesia, Kenya, Malawi, Mexico, Mozambique, Namibia, Nicaragua, Nigeria, Panama, Philippines, South Africa, South Sudan, and Zambia.
- 5 www.who.int/hiv/HIVCP_KHM.pdf
- 6 [www.nchads.org/SOPs/SOP%20TB%20and%20HIV%20\(ENG\).pdf](http://www.nchads.org/SOPs/SOP%20TB%20and%20HIV%20(ENG).pdf)
- 7 www.who.int/hiv/HIVCP_KHM.pdf
- 8 www.who.int/hiv/3yr-development-plan.pdf

Scaling Up TB/HIV Collaborative Activities in Cambodia

By Mary Dallao

Family Health International

Cambodia is considered one of the poorest and least developed countries in Asia. Agriculture is the main economic output, gross national income per capita is estimated at US\$430, and 35 percent of households live below the poverty line. Life expectancy in is about 57 years, and the infant and maternal mortality rates are high: 68 deaths per 1,000 live births and 437 maternal deaths per 100,000 live births.¹

Cambodia's new government set out to rebuild the health system after the fall of the brutal Khmer Rouge regime in 1979, relying heavily on aid from Vietnam. Western donors began arriving in 1989 to tackle health systems reform anew. The country's health coverage plan, designed between 1994 and 1998, divided the country's 24 provinces into 69 operational districts in which 100,000 to 200,000 people

live. Today the country has 77 operational districts, each of which has a referral hospital and a network of health centers. On average, one health center supports 10,000 to 20,000 people.²

The Ministry of Health (MOH) established a *2003–2007 Strategic Plan* whose priorities include reducing the rates of infant and child mortality and maternal mortality. The fourth priority is to combat communicable diseases such as TB and HIV/AIDS.³

TB and HIV in Cambodia

Cambodia ranks 21st among countries with the world's highest burdens of TB.⁴ Following WHO recommendations, the country began in 1994 to implement directly observed treatment, short-course (DOTS) at district and provincial health facilities. In 1997, DOTS was expanded to community health centers to make it more accessible

In 1997, DOTS was expanded to community health centers to make it more accessible to patients, decrease transportation costs, and prevent crowding in hospital TB wards.

to patients, decrease transportation costs, and prevent crowding in hospital TB wards. That expansion has continued, and nearly all of Cambodia's 966 health centers now offer DOTS.

Community DOTS programs have proven extremely successful. Local NGOs such as the Reproductive and Child Health Alliance and the Cambodian Health Committee have been at the forefront of efforts to promote these programs, which actively involve community members in providing education about

TB to neighbors, watching for signs of TB, and providing DOTS.

Although 64 percent of Cambodians are infected with TB, the number of TB cases has decreased by an estimated 1 percent per year since DOTS activities began. And case detection has improved steadily. Among sputum-smear positive (SS+) TB cases, the case-detection rate is 62 percent, just 8 percentage points below the WHO target.

More than 75 percent of Cambodia's TB cases are SS+, although it is worth noting that SS-negative and extra-pulmonary TB must also be considered, especially since many HIV-positive TB patients will manifest these forms of TB. For detection of all types of TB, Cambodia is not faring as well. The detection rate for all new cases is

48 percent, although it has been improving since DOTS began.

Among SS+ cases of TB, Cambodia's treatment success rate has also gradually improved and has surpassed the WHO target. Since 1995, the success rate has remained over 90 percent, and the most recent measurement in 2005 indicated a 93 percent success rate.⁵

Cambodia's National AIDS Program has also seen improvements over the past 10 years, many of them dramatic. Within the 15–49 age group, HIV prevalence declined from 1.2 percent in 2003 to 0.9 percent in 2006, and the rate among brothel-based female sex workers in 2006 declined to 12.7 percent, down from 42.6 percent in 1998.

In Cambodia, the epidemic is concentrated among groups who engage in high-risk behaviors, including injecting drug users, and men who have sex with men. In 2005, HIV prevalence among men who have sex with men in Phnom Penh was estimated at 8.7 percent, and the rate among the country's injecting drug users was estimated at 22.8 percent by a recent study.⁶

In 2005, Cambodia supplied anti-retroviral drugs (ARVs) to 10,000 of

22,000 people needing treatment, achieving the country's individual target as part of the WHO and UNAIDS "3x5" initiative to provide ART to 3 million people in developing countries by 2005.

Another indicator of the success of the National AIDS Program is the dramatic increase in the number of voluntary counseling and testing (VCT) sites throughout the country. As of December 2007, there were 199, and there will be 250 VCT sites by 2010, located in all regional hospitals and selected health centers.

In 2007, 259,862 people were tested for HIV at VCT sites. In September 2007, 25,353 active patients, including 22,981 adults and 2,372 children, were receiving ART.

Joint data on TB/HIV co-infection from Cambodia's National TB Program show an HIV seroprevalence among TB patients of 7.8 percent in 2007, down from 11.8 percent in 2003. In the MOH's 2005 *National HIV Seroprevalence Survey Amongst TB Patients in Cambodia*, it is inferred that the decline of HIV seroprevalence was due to the decline of the HIV epidemic and improved case detection because of DOTS expansion.⁷

Among sputum-smear positive cases of TB, Cambodia's treatment success rate has also gradually improved and has surpassed the WHO target.

In 2007, TB/HIV data collection was extended to all 24 provinces, and a considerable increase in the number of TB patients tested was registered. By September 2007, 45 percent (9,687) of registered TB patients with unknown HIV status had been referred for HIV testing, and 40 percent (8,492) were actually tested for HIV.⁸ Of HIV-positive TB patients, 70 percent received cotrimoxazole preventive therapy (CPT) and 30 percent received ART. (Information on CPT and ART for TB patients was not available in previous years.)

Scaling Up TB/HIV Collaborative Activities

Cambodia's Policy Documents on TB/HIV

Because of the urgency attached to TB/HIV collaborative activities by the WHO, the Stop TB Partnership, and others, Cambodia's national TB and AIDS programs formed a subcommittee on TB/HIV in March 1999 to begin exploring the issue. Participants included not only staff from the national TB and AIDS programs, but also representatives of partners working in

TB/HIV in Cambodia, including the WHO, the Japan International Cooperation Agency (JICA), USAID, and the US Centers for Disease Control and Prevention (CDC). Cambodia's secretary of state agreed to lead the subcommittee, an important political decision that signaled the government's endorsement.

Beginning in 2002, the directors of the national TB and AIDS programs signed three key documents drafted by the subcommittee that were designed to facilitate collaboration:

■ *TB/HIV Country Framework* (2002)—This short document explains how the national TB and AIDS programs should handle TB/HIV co-infected patients. It addresses diagnosis and referral, epidemiological classification, monitoring and evaluation, and capacity building. The framework is being revised in accordance with the *WHO Western Pacific Regional Office Regional TB/HIV Framework*.⁹

■ *Joint Statement on TB/HIV* (2005)¹⁰—This statement reaffirms both programs' commitment to working together and details efforts to be made in providing joint care and treatment, supplying adequate

In 2007, TB/HIV data collection was extended to all 24 provinces, and a considerable increase in the number of TB patients tested was registered.

drugs and test kits, training health personnel, and carrying out monitoring and evaluation.

■ *Standard Operating Procedures for Prompt Testing of TB/HIV and Rapid Access to Treatment and Care Services* (2006)¹¹—The most important recommendations of this document address provision of VCT for TB patients entering the healthcare system at community health centers.

It suggests that these patients be tested for HIV by one of three standard operating procedures (SOPs): 1) by being transported to the nearest VCT site with the help of home-based care workers from the National AIDS Program; 2) by having their blood drawn at the health center and taken to the nearest VCT laboratory for testing; 3) by being counseled and tested

by VCT staff who travel to the health centers on a regular basis.

TB/HIV guidelines and a training curriculum have been developed jointly by the national TB and AIDS programs, with support from TB CAP in 2008. Training of TB and HIV staff is currently under way, and the National TB Program plans to organize more joint training. Many of those interviewed reported tremendous variances in the knowledge of health center staff about the relationship between TB and HIV.

Separately, around the time the *TB/HIV Framework* was written, the National AIDS Program produced the *Continuum of Care for People Living with HIV/AIDS Operational Framework* (2002). This document defines the comprehensive care for people living with HIV/AIDS (PLHIV) that should be provided at

provincial and operational district levels. The framework stipulates that the continuum of care (COC) must address not just a patient's HIV infection and treatment, but also other consequences of HIV, including opportunistic infections (OIs), mental health issues, and social and legal concerns.

One of the hallmarks of Cambodia's COC is a very successful network of daytime care centers for PLHIV. Called Mondul Mith Chouy Mith (or Friends Helping Friends), these centers provide PLHIV with a variety of services, such as peer support, OI screening (including screening for TB), ARVs, spiritual support, and counseling.

Through the development of these documents—especially the *TB/HIV Framework*—Cambodia became one of the first countries in Southeast Asia to have a national policy of counseling TB patients to be tested for HIV, as recommended by the WHO.

As another part of TB/HIV scale-up, the National TB Program worked to improve surveillance of HIV among TB patients nationwide, and it revised district TB registers to capture information about the HIV status of patients.

However, HIV registers still consider testing for TB as part of OI screening. For this reason, and because TB screening is not standardized (symptomatic only, or with sputum smear and chest X-ray examination), it is difficult to cite precise data on the number of HIV-positive patients tested for TB by the National AIDS Program, though the number is thought to be respectable. Though there may be concerns about the ability to diagnose TB in HIV-positive patients, at least such testing is routine through the COC.

Cambodia's TB/HIV Pilot Programs

Following publication of the *TB/HIV Framework* and the beginnings of the COC, Cambodia began implementing pilot TB/HIV collaborative activities in four sites in 2003. Provinces with high levels of HIV prevalence were selected for pilots.

In Phnom Penh Province, implementation of activities was supported by JICA; in Battambang, implementation was supported by FHI and funded by USAID; and in Bantey Meanchey and Kampong Som, implementation of activities was supported by the CDC and the WHO, respectively.

One of the hallmarks of Cambodia's continuum of care is a very successful network of daytime care centers for people living with HIV/AIDS.

Annual action plans for each pilot differed, but they included provisions for a range of collaborative activities between the national AIDS and TB programs, such as joint training; regular meetings between TB/HIV staff; monitoring and evaluation support; information, education, and communication on TB/HIV. Action plans also call for referrals of HIV-positive TB patients to and from home-based care to VCT and ART clinics and CPT, and for referrals of HIV-positive patients to IPT.

TB/HIV collaborative activities have steadily scaled up since their inception at pilot sites. Although the approach for scaling up among pilots differed, in most cases it took place as additional funds became available.

Priority was given to health centers that had the strongest infrastructure and seemed most capable of handling additional responsibilities. Although a health center did not need to meet specific criteria to be considered a candidate for TB/HIV scale-up, the facilities chosen were located in provinces where the COC had been implemented by the National AIDS Program and the health system already had been

strengthened. (For example, staff had received clinical training in ART management, the referral system for TB screening and treatment was strong, and regular meetings among TB and ART clinicians were routinely organized). These facilities also had sufficient support from donors—USAID, the CDC, the WHO, and JICA—for scaling up TB/HIV.

By the end of 2006, 222 health centers in eight provinces (Svay Rieng, Prey Veng, Takeo, Kampot, Sihanoukville, Kandal, Siem Reap, and Pursat) had begun implementing collaborative TB/HIV activities. Their efforts focused on referrals for testing, relying on home-based care teams supported by the National AIDS Program to transport TB patients from community health centers supported by the National TB Program to the nearest VCT site supported by the National AIDS Program.

More recently, in some pilot sites, staff have been implementing the second SOP for HIV testing in the *Standard Operating Procedures for Prompt Testing of TB/HIV*. With this option, HIV testing among TB patients is promoted, the patients' blood is drawn at the health center, then it is sent to the nearest VCT

site. This SOP evidently had a great impact on the scaling up of HIV testing and has led to further expansion of TB/HIV activities. Preliminary data are very encouraging, and the approach is being extended to other districts as well as to non-TB patients.

However, as a WHO representative stated in an interview, issues relating to remuneration of TB staff might stand in the way of adding this provider-initiated counseling and testing to their responsibilities. Health center staff also need to be trained in pre- and post-test counseling.

From January to December 2007, 13,391 TB patients were referred to VCT, often with the help of home-based care teams from their communities. Still, this number did not reach the planned target of 80 percent of TB patients tested for HIV.¹²

In 2007 overall, the national AIDS and TB programs estimated that 13,391 VCT clients among 30,801 TB patients with unknown HIV status (44 percent) were referred for testing by the National TB Program, above the target of 9,000 set for 2006.

The testing of PLHIV for TB is less well documented. TB screening of HIV-positive people is not recorded in the National AIDS Program's annual reports. A TB form will be developed soon by the program that will be used within OI/ART services to standardize TB-symptom screening and TB diagnosis among PLHIV. This may help the collection of more reliable data about TB among PLHIV.

At the end of 2007, 48 health facilities in Cambodia were offering OI and ART services. In the third quarter of 2007, a total of 25,353 active patients, including 22,981 adults and 2,372 children, were receiving ART. The data do not capture what percentage are TB patients.

Mobile voluntary counseling and testing at health centers has significantly increased HIV testing among TB patients in the province, with 71.3 percent of newly registered TB patients tested through this system.

Procedures for implementing TB/HIV activities were not standardized across pilot sites. Partners responsible for individual pilot sites follow national guidelines, including the *TB/HIV Framework*, and they work closely with staff from provincial TB and HIV programs.

However, the specifics of each partner's approach differ, including their daily procedures for doing work and transportation allowances for patients provided by NGO implementing partners vary. Battambang has a customized TB/HIV supervision checklist in addition to checklists approved by the national AIDS and TB programs.

At the CDC pilot in Banteay Meanchey, a staff member created a separate spreadsheet for data collection because he felt available tools did not meet the pilot's needs. This pilot was very successful in referring TB patients for HIV treatment, and its data collection system will be used in new sites as the pilot scales up, but perhaps not at new sites scaled up by other partners in other parts of the country.

In Phnom Penh Province, JICA has trained TB staff as TB/HIV

coordinators and counselors who visit health centers to provide mobile VCT. This follows the third SOP for VCT testing of TB patients cited, one not yet widely implemented.

Mobile VCT at health centers has significantly increased HIV testing among TB patients in the province, with 71.3 percent of newly registered TB patients tested through this system. About 80 percent of these HIV-positive TB patients received CPT, 76.8 percent were referred to home-based care teams, and 12.5 percent began ART.

Differences among pilot sites make it unsurprising that a recent paper on TB/HIV integration in Cambodia noted extreme variations among the pilots in their capacity to test TB patients for HIV infection.¹³

In 2005, according to National TB Program surveillance data, the sites screened anywhere from 14 to 83 percent of TB patients for HIV co-infection. The pilots reported more consistent results in screening HIV-infected persons for TB, as they tested 70–100 percent of patients.

Currently, IPT is being provided in only one pilot province after

sputum culture has ruled out active TB. Nearly 200 persons have received IPT to date.¹⁴

Lessons Learned

Individuals intimately involved in TB, HIV, or TB/HIV collaborative activities in Cambodia were interviewed for this document, including key staff from national AIDS and TB programs at national and provincial levels and staff of implementing partners, including international and national NGOs. Each respondent was asked a different set of questions, and all were asked to assess the progress of TB/HIV collaboration. Their responses contained major recurring themes:

- The COC ensures that TB screening for HIV-positive patients is routine.
- It has been very difficult to coordinate TB/HIV collaborative activities between the National AIDS Program and the National TB Program.
- The *TB/HIV Collaborative Framework* isn't specific enough.
- Transportation is a major hurdle in testing TB patients for HIV. Most community health centers do not have the capacity to perform HIV counseling and

testing, so patients must be sent to referral hospitals for tests.

- As a result of difficulties in diagnosing extra-pulmonary TB, common in HIV-infected people and concerns about the potential risks of providing IPT to clients with undetected active TB, staff at three of four pilot sites did not introduce IPT.
- Data collection for TB/HIV needs to be standardized.

The COC ensures that TB screening for HIV-positive patients is routine.

The COC provides clinical, psychosocial, and educational services to PLHIV. Services relevant to TB/HIV co-infected patients include help managing OIs, including TB; prophylaxis for OIs; psychosocial and financial support; and nutrition support.

The key to success in Cambodia lies in placing greater emphasis on management of OIs, including TB, instead of focusing only on ART.

The COC is one aspect of Cambodia's TB/HIV collaborative activities that seems to work consistently well. It ensures referral of PLHIV to OI screening, including TB, and many credit it with

The key to success in Cambodia lies in placing greater emphasis on management of opportunistic infections, including TB, instead of focusing only on antiretroviral therapy.

referral rates as high as 99 percent in Battambang Province.

As of December 2006, COC services existed in 48 of 76 operational districts in 19 of 24 provinces. These services have been strategically placed in areas of the country with the highest HIV prevalence.

The COC is implemented at district- and provincial-level facilities and managed by the National AIDS Program. The national AIDS and TB programs developed standard operating procedures for screening PLHIV for TB and for referring people with TB to VCT.

Training in TB screening is part of the National AIDS Program's HIV/AIDS curriculum. TB status is also mentioned on each patient's clinical report. Through the National

Home-based care workers also visit patients regularly. They are watchful for signs of opportunistic infections such as TB, and they help ensure that patients can access care, referring patients for TB testing and providing some transportation support for them, if necessary.

AIDS Program, HIV-positive patients cannot begin ART without having been screened for OIs, including TB.

Home-based care workers also visit patients regularly. They are watchful for signs of OIs such as TB, and they help ensure that patients can access care, referring patients for TB testing and providing some transportation support for them, if necessary.

TB testing for HIV-positive patients is also more likely to occur because COC services are physically easy for patients to access. For example,

many critical services are co-located within the same medical compound at the Battambang District Hospital, and a stand-alone VCT center is an easy walk to the hospital. TB suspects arrive in one wing of the hospital to be tested for TB at the OI clinic. Although not all district hospitals in Cambodia will have the equipment, this hospital is equipped to do sputum smears, x-rays, and cultures. Patients who test positive for TB are referred to the TB ward directly across the hospital courtyard and examined by a TB doctor. If need be, patients can be hospitalized here for up to two months, or they can opt for ambulatory DOTS.

The Mondul Mith Chouy Mith centers, another aspect of the COC, ensure convenient access to services for patients. Groups of PLHIV and those who care for them generally meet monthly on the grounds of referral hospitals. This helps patients who attend to become comfortable at the hospital and familiar with staff. Emphasis is placed on a “one-stop shop” and the patient’s ease.

Activities offered at a meeting may include health education, including on prevention for positives;

family planning referral; counseling; self-help group discussions; and information on medical services, such as VCT, care for OIs (including TB), and prevention of mother-to-child transmission of HIV.

In Moug Russey, the first operational district to implement the COC, 37 PLHIV attended the first Mondul Mith Chouy Mith meeting. Although there was some anxiety that PLHIV would be ashamed to congregate openly, attendance gradually increased. Now, more than 100 PLHIV attend Moug Russey monthly meetings.

It has been very difficult to coordinate TB/HIV collaborative activities between the National AIDS Program and the National TB Program.

This issue was mentioned by nearly every person interviewed. The difficulties seem to reflect everyday challenges that arise when one established institution with its own ways of doing things must depend on another, with a different organizational culture, to achieve joint goals.

Many speculated that the difficulty experienced in the integration of the two disease programs is not

unusual; it may be a common experience within ministries of health trying to implement collaborative TB/HIV activities.

Because TB/HIV does not fall under either program, many say it is difficult to hold any one organization or person accountable. TB/HIV is not “owned” by either the national TB or AIDS program, and few in either organization can claim expert understanding of both diseases. This may have contributed to some difficulty producing consistent results.

National-level meetings between the two programs once occurred on a regular basis, but they became more infrequent and eventually stopped. In the past year, efforts to organize broader group meetings have been revived.

The TB/HIV Collaborative Framework, a six-page document approved in 2002, needs to be supported by more specific SOPs.

While the framework is important because it demonstrates commitment from the national AIDS and TB programs, many trying to implement it said it was impractical or difficult to operationalize in

their everyday work. They referred to it as more of a first step than a useful tool.

To be optimally effective, many suggested that a national TB/HIV collaborative framework be accompanied by specific, step-by-step SOPs for implementing joint activities.

To address these concerns, the national AIDS and TB programs are revising the current TB/HIV framework and writing SOPs, based on recommendations from the *WHO Western Pacific Regional Office TB/HIV Framework*. The revision will integrate “the 3 Is” recommended by the WHO: IPT, intensified case finding for active TB, and TB infection control.

Transportation is a major hurdle for TB patients who need to be tested for HIV.

Arranging TB testing for HIV-positive patients is not a problem, since patients entering the health-care system for HIV-related services obtain support at the district level, where VCT and OI services are often co-located through the COC.

However, because VCT is not yet available at community-level health centers, it is more difficult to screen TB patients for HIV. After these

patients seek treatment for TB at a health center, they often must travel long distances to obtain VCT. Many of these patients are very poor and do not have easy access to transportation to VCT centers.

If VCT cannot be provided to patients at sites where they are diagnosed with TB, transportation support to VCT sites should be provided for them. Patients should also be tracked carefully lest they be lost.

For this reason, pilot sites with selected health centers in Battambang and Kampong Cham provinces implemented the second option of the TB/HIV SOPs: they sent blood drawn at the health centers to the nearest VCT site in order to improve HIV testing of TB patients.

Extra-pulmonary TB is common in HIV-infected people and can be difficult to diagnose. Difficulties ruling out active TB among HIV-infected persons and concerns about the potential risks of providing IPT to a person with undetected, active TB prevented staff at the three of four TB/HIV pilot sites from introducing IPT.

Repeatedly there were calls for training to improve staff skills in diagnosing TB.

Only the pilot in Battambang Province has begun offering IPT. Other provinces lack either the skilled staff or the resources to begin providing it.

Data collection for TB/HIV needs to be standardized.

TB/HIV data is not collected in a standardized way throughout the country, and this makes it very difficult to report definitive, nationwide results for collaborative TB/HIV activities.

The National TB Program has added a line item on the National TB Register that takes into account a patient's HIV status, but it is more difficult to discover a patient's TB status using National AIDS Program data. The information is listed in each individual patient's record, but is not recorded on a broader register.

Implementing organizations also employ different methods for tracking individual pilot-project data. ●

Notes

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- 12 Kingdom of Cambodia, *2007 Annual Report of the National Center for HIV/AIDS, Dermatology and STD*.
- 13 Eang, Chheng, Natpratan, and Kimerling, *Lessons from TB/HIV Integration in Cambodia*, *Bulletin of the World Health Organization*, 85 (5) May 2007. http://www.scielo.org/scielo.php?pid=S0042-96862007000500017&script=sci_arttext
- 14 Ibid.

Scaling Up TB/HIV Collaborative Activities in Kenya

By René L'Herminez

KNCV Tuberculosis Foundation

Kenya's health system is composed of the public system, which includes the Ministry of Health (MOH) and parastatal organizations, facilities supported by NGOs and faith-based organizations, and private, for-profit facilities. Public-sector facilities account for just over half of facilities nationwide.

Malaria is the leading cause of outpatient morbidity. Outpatient clinics also commonly see diseases of the respiratory system, skin diseases, diarrhea, and intestinal parasites.¹

In Kenya, life expectancy is 53 years, and infant mortality is high, at 77 deaths per 1,000 live births.²

The gross national income per capita is US\$580, about 75 percent of the population work in agriculture, and 55 percent live below the poverty line.

TB and HIV in Kenya

Kenya has a severe generalized HIV/AIDS epidemic, with an estimated adult HIV prevalence of 6.1 percent.³ Among Kenyans over age 15, 1.2 million are HIV-positive, including approximately 150,000 children under 15.

Women are nearly twice as likely as men to be HIV-infected. Most HIV transmission occurs through heterosexual contact, but certain populations require special prevention interventions, including intravenous drug users, uniformed personnel, HIV-infected individuals, sexual partners in HIV-discordant relationships, men who have sex with men, long-distance transport workers, and sex workers.

While the rate of new infections has decreased, the relatively recent advent of antiretroviral therapy (ART) has not yet significantly affected mortality rates. An estimated 140,000 Kenyans died of AIDS in

At the end of 2006, there were approximately 210 comprehensive care centers in the country, most of them located at provincial, district, or faith-based and private hospitals.

2005, and 1.1 million children have been orphaned by AIDS to date.

All districts provide ART through comprehensive care centers. These healthcare facilities exist at all levels—community, district, and provincial—and provide a variety of services, including HIV counseling and testing and TB testing and diagnosis. At the end of 2006, there were approximately 210 comprehensive care centers in the country, most of them located at provincial, district, or faith-based and private hospitals.

To facilitate collaboration, Kenya's national TB and AIDS programs were brought together in 2000 in one division in the MOH's Department of Preventive and Promotive Services and housed in one building.

In the past 20 years, Kenya has witnessed a marked upsurge in its TB disease burden. Between 1987 and 2006, the case notification rate increased from 57 per 100,000 people to 335. This increase is attributed primarily to the concurrent HIV epidemic: 50 percent of TB patients are estimated to be HIV co-infected.

Female smear-positive (SS+) TB patients have a higher rate of HIV prevalence than males, an observation supported by the 2003 Kenya Demographic Health Survey, which indicated HIV prevalence in adult females at 8.7 percent, compared with 4.6 percent in males.

The World Health Organization (WHO) recently re-estimated TB case-detection rates for Kenya, adjusting for new estimates of HIV prevalence data.⁴ It is now estimated that 75 percent of all forms of TB and 70 percent of new cases of SS+ TB were detected in Kenya in 2006.

The National TB Program delivers DOTS through a network of 930 diagnostic centers and 1,901 treatment centers. In 2007, the program notified 116,723 TB patients.⁵

In 1994, a National TB Program survey among SS+ pulmonary TB patients in 17 districts (of 50 at the time) found an HIV prevalence of 40.7 percent. In 2007, the TB program tested 79 percent of all TB patients for HIV; of these, 48 percent tested HIV-positive.

Among this group, 86 percent received cotrimoxazole preventive therapy (CPT) and 27 percent received ART. However, the current recording and reporting system under reports the number of patients on ART. It is estimated that 50 percent of TB patients are receiving ART.

Scaling Up TB/HIV Collaborative Activities

To facilitate collaboration, Kenya's national TB and AIDS programs were brought together in 2000 in one division in the MOH's Department of Preventive and Promotive Services and housed in one building.

The following year, probably due to increased international attention to TB/HIV, several organizations established pilot projects integrating HIV and TB services.

The US Centers for Disease Control and Prevention (CDC) supported TB/HIV collaboration at the Eastern Deanery clinics of the Nairobi Catholic Diocese; Médecins sans Frontières (MSF) began integrated TB/HIV pilot projects at Blue House Clinic in Nairobi and Homa Bay District in Nyanza Province; and the Liverpool School of Tropical Medicine integrated TB/HIV activities into some of their HIV/AIDS projects in Central Province.

Initially, TB patients were referred to freestanding counseling and testing centers; however, only one in eight patients referred for counseling and testing actually

sought testing, and none were put on ART or CPT. Nevertheless, these initiatives provided evidence that TB/HIV integration under controlled program conditions could be translated into a wider programmatic approach.

Kenya's Policy Documents on TB/HIV

In 2002, at a regional capacity-building workshop on TB/HIV sponsored by the WHO, the CDC, and USAID, Kenya developed proposals and work plans for phased implementation of collaborative TB/HIV activities.

As a result of the workshop, a TB/HIV steering committee was established with representatives from the National AIDS Program, the National TB Program, the CDC, and implementing partners.

Over the next few years, a smaller TB/HIV working group drafted documents on TB/HIV collaboration:

Policy on HIV Testing in Health Care Settings (2005)⁶—This policy paved the way for the adoption of widespread, routine HIV testing of patients presenting at healthcare facilities with an HIV-related illness, including TB.

The policy document promotes testing initiated by providers instead of voluntary counseling and testing (VCT). With the release of this policy, provider-initiated counseling and testing with an opt-out approach increasingly became the norm in TB clinics across Kenya. This testing maintains VCT's three Cs: consent, confidentiality, and counseling. The formal launch of this policy prompted a rapid uptake of TB patient-testing all over the country.

TB/HIV Guidelines (2005)⁷—This document provides guidance for district and provincial health managers and program officers so they can implement the three main components of the WHO's *Interim Policy*: coordination, HIV management for TB patients, and TB management for HIV patients.⁸

The guidelines include strategies for establishing provincial and district TB/HIV coordinating committees. By June 2006, all 70 provincial TB control zones and 30 of 77 districts had functional TB/HIV coordinating committees—at least on paper. The level of performance and the value of these committees varied widely, but in general they

contributed to the initiation and expansion of activities.

Kenya also has policies on the provision of CPT and ART for TB patients. All HIV-positive patients are provided with cotrimoxazole, in most places, by TB service providers.

However, there is still no national policy on isoniazid preventive therapy (IPT) for people living with HIV (PLHIV). A multi-partner meeting on IPT use in Kenya in February 2008 recommended that IPT be restricted until more

Provider-initiated counseling and testing with an opt-out approach increasingly became the norm in TB clinics across Kenya. This testing maintains VCT's three Cs: consent, confidentiality, and counseling. The formal launch of this policy prompted a rapid uptake of TB patient-testing all over the country

is known on the risk of isoniazid mono-resistance in settings where rifampicin and isoniazid form the core of treatment programs. It would be available in well-controlled congregate settings, healthcare pilots, and research programs, and to targeted groups such as healthcare workers and children exposed to infectious TB.

Current TB/HIV policy states that PICT is offered to all TB patients, and most settings have adapted their outpatient departments to accommodate this testing. In practice, TB patients are diagnosed by medical or clinical officers anywhere they obtain care, and they are offered counseling and HIV testing at this point.

Testing is done at the TB clinic, laboratory, or specific PICT rooms—whatever the local situation allows. This rapid onsite testing provides immediate results. HIV-negative patients are referred to the nearest

VCT clinic for further counseling, and HIV-positive patients are referred to the nearest comprehensive care center for intake into an ART program. There are specific referral forms for this purpose.

At the larger centers (district and provincial hospitals), transportation is not a major concern because the ART programs are located on the same premises as the TB clinics. However, referring HIV-positive TB patients from decentralized, HIV-testing, TB diagnostic clinics to centralized ART programs still results in considerable delay and default.

Important Milestones in Kenya's TB/HIV Collaborative Activities

In Kenya, TB/HIV scale-up was only partially the result of lessons learned from pilot projects. (A site in Nakuru was intended to serve as the government pilot, but delays in funding and policy development ended this plan.)

Scale-up was realized mainly because the 2005 launch of the *Policy on HIV Testing in Health Care Settings*, established to support the scale-up of ART, resulted in a dramatic increase in widespread,

routine HIV testing through PICT, which became the norm in TB clinics across the country.

The first step of phased implementation of collaborative TB/HIV activities at the district level was an analysis of TB/HIV services being offered. This established the situation before interventions were introduced and assisted in planning new activities and evaluating progress being made. The three main components were

- the collection of baseline TB/HIV statistics
- the identification of groups at particular risk of TB and/or HIV infection
- a survey of district TB and HIV/AIDS service providers

The baseline survey helped to guide the implementation process—for example, if there were no microscopes for AFB microscopy in a TB/HIV pilot district, the project liaised with relevant departments to procure one.

The revision of recording and reporting tools also contributed to Kenya's improved TB/HIV services. Recognizing the need to integrate HIV information into traditional TB

The revision of recording and reporting tools also contributed to Kenya's improved TB/HIV services.

collection systems, the National TB Program adjusted its tools in 2005 to include HIV/TB indicators and conform to WHO guidelines.

In addition to the standard information recorded in TB registers, the revised tools called for collection of data on whether HIV test were offered; results of HIV tests; CD4 counts; and use of CPT and ART. The registers also included information on referrals.

In July 2005, most of the 1,605 health facilities offering TB treatment at all levels—community, district, and provincial—were supplied with the new recording and reporting tools and instructed that peripheral healthcare workers should switch to the new registers immediately.

The system was fully in place within six months. This rapid scale-up of the new system was surprising, since no large-scale training on the new tools was given to peripheral health staff because of time, human resource, and financial constraints.

The number of TB cases tested for HIV has gradually increased from 32 percent in the third quarter of 2005 to 68 percent in the last quarter of 2006. Many believe that close

staff supervision and strict data-reporting requirements are partially responsible for health workers' responsiveness in reporting the number of TB patients tested for HIV and other indicators that contributed to scale-up success.

The introduction of the new recording and reporting system has been critical in the rapid rollout of PICT, since health workers needed to perform in PICT to submit complete reports. All TB patients are offered PICT.

The National TB Program has trained peripheral healthcare workers on a regular basis. This training builds on approaches and modules developed by WHO that emphasize the tasks that these workers are expected to carry out in TB control programs.

Since 2005, there has been increasing inclusion of TB/HIV issues in traditional TB training. The National TB Program, in collaboration with the CDC and the WHO, developed a standardized training curriculum incorporating HIV/TB modules. This curriculum was used in all trainings carried out by the National TB Program and its partners from 2006 onward.

Many believe that close staff supervision and strict data-reporting requirements are partially responsible for health workers' responsiveness in reporting the number of TB patients tested for HIV and other indicators that contributed to scale-up success.

Improvements in TB/HIV collaboration can partly be attributed to regular supervision and on-the-spot training of peripheral healthcare workers.

Although advocacy communication and social mobilization initiatives have been pursued in Kenya, they have not played a major role in the expansion of TB/HIV collaborative activities.

Information, education, and communication activities have ranged from newsletters by the MOH, TB/HIV brochures, pamphlets, posters, and radio programs. Radio messages focused on TB and

TB/HIV collaboration has built on existing programs to offer greater respect for the rights of PLHIV and TB patients. The collaboration has facilitated more effective service provision and strengthened general district health systems.

HIV/AIDS are always at their peak in March and April as part of World TB Day commemorations.

Communication and social mobilization have also started addressing TB/HIV co-infection, but activities were still minimal in 2006. Interviews with affected communities reveal that communication and social mobilization available at the district level are mostly government-dictated, rather than incorporating community or patient ideas.

Community contributions to TB/HIV activities remain low. Some provinces and districts have community representatives in coordinating committees; some serve

as community TB ambassadors in Nyanza Province and help with TB/HIV monitoring and evaluation.

The TB ambassador's main task is to enhance case-finding and treatment adherence among community members, and they have been trained for this role by the CDC or the MOH.

In many areas, the community is not represented, sometimes because there is no established network or group serving PLHIV and/or TB patients. However, often TB/HIV committees do not know of the existence of these groups. In a number of districts, there are post-test clubs for PLHIV, and some of these now include TB patients.

Kenya's TB/HIV collaborative activities also have benefited from significant support provided by the Stop TB Partnership, the Global Fund, and the PEPFAR.

The Stop TB's Intensified Support and Action Countries Initiative assisted the National TB Program to address its human resource constraints. In 2005, 26 additional people were recruited to help provincial TB and leprosy coordinators (six people) and district TB and leprosy coordinators (20 people).

Ten more people were recruited with PEPFAR funds that were channeled through PATH. New staff were responsible for initiating and/or expanding implementation of TB/HIV collaborative activities, including the integrated TB/HIV recording and reporting system.

Contributions from the Global Fund and PEPFAR, spurred by the 3x5 Initiative, also resulted in greater availability of ART and cotrimoxazole. This may have helped increase the rate of HIV testing for TB patients, as health workers were now able to offer them treatment. At the end of 2005, provincial and district hospitals and most faith-based hospitals were supplying ART. By the end of June 2006, about 90,000 PLHIV were receiving ART, out of an estimated 200,000 in need. An estimated 40 percent of those treated were current or former TB patients.

From the perspective of the National TB Program, it was important to start providing cotrimoxazole to all TB patients testing HIV-positive, and nearly all such patients were receiving it by the end of 2005.

Most of the cotrimoxazole given to TB patients in 2005 was derived

from government-procured supplies for general use at health-care facilities, not from supplies earmarked for HIV-infected persons, and this caused shortages in some areas. The procurement of cotrimoxazole for HIV-infected patients has since been taken up by the National AIDS Program.

TB/HIV collaboration has built on existing programs to offer greater respect for the rights of PLHIV and TB patients. The collaboration has facilitated more effective service provision and strengthened general district health systems.

Some of the areas supported because of TB/HIV collaborative activities include

- equipment and supplies such as laboratory reagents and microscopes
- training, refresher courses, and recommendations for deployment
- coordination, including support for supervision, report writing, and operational costs
- training of staff (each national program is invited to trainings for the others' staff)

Strong interagency coordination initiated by the National TB Program and national-level TB interagency coordinating committee meetings that occur quarterly have been essential in establishing a uniform approach. That there is such an approach contributes to the fact that a growing number of NGOs are engaging in collaborative TB/HIV activities, funding for such activities has expanded, and that collaborative activities are reaching most areas of the country.

Lessons Learned

The following are the major recurring themes from a 2007 review of Kenya's TB/HIV collaborative activities:

- PICT resulted in a significant increase in the number of TB patients being tested for HIV, compared with a more traditional VCT approach.
- The widespread use of CPT in HIV-infected TB patients is encouraging.
- Training associated with the introduction of PICT has helped health workers overcome misconceptions and fears about HIV.

- Sometimes, the national TB and the AIDS programs have not worked together on important TB/HIV collaborative activities, and setbacks have resulted.
- Designating one person as the TB/HIV coordinator was helpful, but had a greater impact when the position was placed under the National TB Program, rather than under the National AIDS Program.
- HIV-infected TB patients still have limited access to ART, especially during the critical first three months of TB treatment.
- Screening of HIV-positive patients for TB does not occur widely.

Strong interagency coordination initiated by the National TB Program and national-level TB interagency coordinating committee meetings that occur quarterly have been essential in establishing a uniform approach.

- Research on TB/HIV in the pediatric age group is urgently needed, including risk-factor analysis and research on diagnostic approaches.

PICT resulted in a significant increase in the number of TB patients being tested for HIV, compared with the more traditional VCT approach.

When the testing policy in Kenya involved VCT, only a few health workers were trained to perform this time-consuming exercise. The official acceptance of PICT in 2005 as the method for counseling and testing HIV suspects in clinical settings made it possible to incorporate a relatively short interaction into routine program activities.

The Eastern Deanery and the Blue House clinics in Nairobi were the first centers to offer PICT routinely to all TB patients. The PICT approach resulted in a much higher uptake than the conventional VCT approach. Testing percentages of more than 95 percent were reached, partly as a result of the capacity of health workers to convince patients of the importance of PICT. Between 50 and 85 percent accepted PICT at their initial clinic visit, and nearly all who came for a

follow-up due to active TB eventually accepted testing.

The widespread use of CPT in HIV-infected TB patients is encouraging.

CPT is provided by TB health staff. By and large, more than 85 percent of HIV-infected TB patients have been placed on this treatment, despite the fact that the National TB Program had not procured and distributed significant amounts of this drug.

As HIV testing and counseling of TB patients expands, there will be a need to provide CPT together with anti-TB drugs. A secure supply is very important for HIV-infected TB patients.

Training associated with the introduction of PICT has helped health workers overcome their misconceptions and fears about HIV.

In Kenya, the misconceptions and fears of health workers about HIV are known to be even greater than those of average community members. Many health workers did not like to start any discussion about HIV with patients.

The introduction of PICT, combined with a relatively short training (one

week), the availability of ART, and the necessity of providing data on the number of HIV-tested TB patients has helped them overcome this inhibition.

Sometimes, the national TB and AIDS programs have not worked together on important TB/HIV collaborative activities, resulting in setbacks.

Despite the interlinkage of the two diseases and even an organizational and geographical linkage of the two programs in one building under one division, national TB and AIDS programs continued to function as separate disease programs. In 2007, the programs were disconnected again into two divisions.

Kenya's TB/HIV collaborative activities sometimes suffered because of a lack of involvement and/or collaboration between national TB and AIDS programs. For instance, the National TB Program, the CDC, and the Kenya Medical Research Institute completed a TB/HIV funding proposal and submitted it to the WHO in 2003. Proposal writing took much longer than expected, mainly because of the non-participation of the National AIDS Program and the National

AIDS Coordinating Council, despite several attempts to involve them.

Collaboration also suffered because of managerial disagreements between several involved parties. In the end, the proposal was rejected because of several technical weaknesses and this lack of AIDS program involvement.

Although many recognize TB/HIV collaboration as important, it can be difficult to convert into clear policy development and well-targeted actions.

In addition, many feel that TB/HIV is owned and implemented by the TB community and that it is the only one with the desire to collaborate. However, the AIDS community is slowly recognizing the positive contribution of the initiative toward treating as many HIV patients as possible.

Designating one person as the TB/HIV coordinator was helpful, but the position had a greater impact when the coordinator was working under the National TB Program instead of the National AIDS Program.

National coordination of TB/HIV programs officially began in 2003 under the secretarial support of a

national TB/HIV coordinator in the National AIDS Program, but the more tangible, inspirational guidance came after national TB/HIV coordination was brought under the National TB Program in 2005.

Under the National AIDS Program, the TB/HIV coordinator did not perform well, perhaps because he was also involved in several other activities. Also, some believe that the first TB/HIV coordinator did not feel a sense of ownership and commitment to the initiative.

Since the National TB Program is hierarchically positioned under the National AIDS Program, some feel that early initiatives, such as the first TB/HIV pilot project in Nakuru, were actually decelerated and blocked by the national TB/HIV coordinator when he was part of the National AIDS Program.

This immediately changed when the coordinator resigned at the end of 2004 and the National TB Program assigned its own national TB/HIV coordinator within its central unit. This person was mandated with implementing the Global Fund plan to initiate TB/HIV in 10 districts and coordinate activities with other partners.

National coordination of TB/HIV programs officially began in 2003 under the secretarial support of a national TB/HIV coordinator in the National AIDS Program, but the more tangible, inspirational guidance came after national TB/HIV coordination was brought under the National TB Program in 2005.

The National AIDS Program still appointed one of their officers as their TB/HIV focal point, but good collaboration was never realized.

Although the situation has improved, HIV-infected TB patients had limited access to ART in 2007.

Several factors contribute to low ART access among HIV-infected TB patients. It is fair to say that the ART program was in a state of expansion, with a limited number of comprehensive care centers providing the treatment (210 as of

If TB staff were introduced into comprehensive care centers, they would be responsible for screening HIV patients and treating those diagnosed with TB. However, infection control could become a problem if this were to occur, since known HIV patients would be mixing with known TB patients.

December 2006). Local shortages of test kits and ART may also occur.

PICT is provided at most TB diagnostic centers, including the more peripheral ones. However, those who test HIV-positive need to travel to HIV treatment centers that are not co-located and they may not have the funds for such travel or for required CD4 and liver-function tests. (Some facilities subsidized or waived laboratory fees for these tests for the very poor.)

The current reporting system includes uptake of ART in

notification reports. In 2007, the system reported 28 percent of TB patients accessed ART, but the true figure was higher. Many patients start ART too late to be included in the notification report; the system does not report cases that start ART in the second and third quarter of TB treatment, and the average uptake into the ART program takes four to six weeks. However, data verification showed that the recording system was initially capturing a considerable number of “referred patients” as “patients on ART” who had not yet started ART.

Screening of HIV-positive patients for TB does not occur widely.

Although some questions are asked to identify a TB suspect during uptake for ART, there is no routine TB screening system for PLHIV.

In a recent discussion between Kenya’s national TB and AIDS programs, it was suggested that TB health staff be introduced into the comprehensive care centers. While these staff are housed on the same premises as the comprehensive care centers, they are not integrated in most cases.

If TB staff were introduced into comprehensive care centers, they would be responsible for screening HIV patients and treating those diagnosed with TB. However, infection control could become a problem if this were to occur, since known HIV patients would be mixing with known TB patients.

It was also suggested that HIV testing of suspected TB cases be done at the outpatient department and ward level. Kenya will pilot this approach in one or two locations.

Research on TB/HIV in the pediatric age group is urgently needed, including risk factor analysis and research on diagnostic approaches and screening of adult contacts for TB and HIV.

In general, HIV prevalence among TB patients in Kenya has followed the pattern seen in the general population, with young adults having the highest rates of HIV infection.

One major difference has emerged: a high rate of HIV infection in TB patients between ages 0 and 14. Currently, the National TB Program does not disaggregate this age group, but preliminary

research data indicate that more than 50 percent of TB patients within it are age 5 or younger.

The high HIV prevalence in this group would support a hypothesis that these children are born to HIV-infected mothers who are also infected with TB. Alternatively, these children may have a chronic HIV-related non-TB pulmonary illness that is erroneously treated as TB as a result of the difficulties of confirming a diagnosis of TB in this age group. More research in this area is needed.

Improved diagnostic algorithms for patients with non-TB, HIV-related disease are needed, along with new diagnostic tests. The diagnosis of TB can sometimes be a convenient one to make when diagnostic challenges prevail.

Data show differences in the prevalence of HIV in the various forms of TB.

New pulmonary SS+ patients and young patients with extra-pulmonary TB had lower HIV prevalence: 43 percent and 44 percent, respectively. HIV prevalence appears to be highest among adult patients with recurrent SS-negative pulmonary TB or extra-pulmonary TB, pulmonary TB patients who did not have sputum smears done, and new patients with extra-pulmonary TB.

It is possible that a significant proportion of these patients have non-TB, HIV-related disease and have been misdiagnosed. ●

Notes

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Scaling Up TB/HIV Collaborative Activities in Malawi

By Benjamin Weil
Consultant

Malawi is a poor country, even by sub-Saharan African standards. It ranks 164th out of 177 countries on the UN Human Development Index, and about half of its 13 million people lived below the poverty line in 2006.¹ Gross national income per capita is US\$170² and is largely dependent on agriculture.

Life expectancy averages 41 years. The infant mortality rate is 109 per 1,000 live births, the under 5 mortality rate is 175 per 1,000 live births, and the maternal mortality rate is 1,800 per 100,000 live births. The fertility rate is high, with an average of nearly six births per woman.³

In 2004, Malawi endorsed a health sector-wide approach (SWAp) whose central component is the delivery of an “essential healthcare package” through a decentralized, district-based health system. The

country has 28 districts, each of which has one or more hospitals established by the Ministry of Health (MOH) and/or the Christian Health Association of Malawi, along with numerous community-level health centers. There are major referral hospitals in all three regions.

The MOH focuses on improving and expanding health services for mothers, children under 5, and all people in general. It seeks to make better use of resources and improve the quality of trained human resources and to strengthen access to health facilities and basic services.⁴

TB and HIV in Malawi

In Malawi, TB is the leading cause of illness and death from a communicable disease; its effects are exacerbated by HIV infection, poor nutrition, and population density. Between 1970 and 1985, notified TB cases increased gradually from 3,492 to 5,334.

After 1985, despite DOTS implementation that eventually achieved nationwide coverage, the HIV epidemic caused a strong upsurge in TB notifications and the number of TB cases. The number of notified TB cases rose to a peak of 28,234 in 2003 before starting to decline slowly.

TB case-detection in Malawi has stagnated for the past decade or more. In 2006, the detection rate of new sputum-smear positive (SS+) TB cases was estimated at 42 percent, well below the WHO’s 70 percent target, and the detection rate for all new TB cases was only 47 percent.

Despite a WHO target of 85 percent, Malawi’s treatment success rate of new SS+ cases currently hovers around 78 percent, mostly due to a very high case fatality rate of 16 percent.⁵ Default and treatment failure rates have been very low—less than 5 percent altogether.

HIV prevalence in Malawi is high, due mainly to unprotected sex between men and women. Among the 15–49 age group in Malawi in 2004, 12 percent were living with HIV, an improvement over the more than 14 percent prevalence of the past several years.

ART has become increasingly available: 150,000 adults and 10,000 children were taking ARVs as of December 2007 (out of a total of 250,000 adults and 23,000 children in need of ART),⁶ and the number of public and private-sector ART sites increased from just 9 in 2003 to 202 by the end of March 2008.

The number of people accessing HIV counseling and testing increased from 283,461 in 2004 to 661,400 in 2006, while the number of sites providing these services grew from 146 in 2004 to 351 in 2006.⁷

TB/HIV co-infection is a serious problem. According to the most recent national survey, approximately 70 percent of TB patients in Malawi are infected with HIV.⁸

Since diagnosis of pulmonary TB is complicated by advanced HIV immunosuppression, the country's TB cure rates have declined. The

death rate from TB increased from 5 percent in 1985 to 22 percent in 1998, then declined to 16 percent in the 2006 cohort. At the same time, the proportion of TB patients tested for HIV increased from 8 percent in 2002 to 87 percent by the end of 2007.

Scaling Up TB/HIV Collaborative Activities

Malawi's Policy Documents on TB/HIV

Efforts in Malawi to integrate TB and HIV services began in earnest in 1999 with the WHO-coordinated ProTEST Project, which focused on expanding HIV counseling and testing for the general public, with special emphasis on TB patients.

In 2002, when ProTEST ended, the MOH developed its *Three Year Development Plan for the Implementation of Joint TB and HIV Services in Malawi*.⁹

The National Tuberculosis Program (NTP) and the National AIDS Commission (NAC) were the main authors of the plan and its TB/HIV guidelines. These were mainly concerned with providing HIV-related services for TB patients, including access to counseling and testing,

cotrimoxazole preventive therapy (CPT), and ART.

The plan covering 2002–05 focused on

- working within the context of health sector reform, including the SWAp and the essential healthcare package
- working with district health management teams to ensure decentralized coordination
- using a phased approach within each district and for country-wide implementation

The 2002 plan is the most important policy document establishing integrated TB/HIV services in Malawi. Its TB/HIV guidelines aimed to reduce HIV prevalence, TB case notification rates, and TB case fatality rates.

Under the plan, TB patients were to receive routine HIV counseling and testing, and HIV-positive TB patients were to gain access both to CPT and ART.

The three-year plan was bolstered by an MOH decision to endorse a policy to provide CPT for all HIV-positive TB patients and implement a countrywide situational analysis, led by the NTP and NAC, on the

state of TB/HIV services and the need for integrated services.

The MOH received technical assistance in meeting the three-year plan's objectives from the Norwegian Agency for Development Cooperation (Norad), the WHO, and USAID.

After 2005, the UK Department for International Development (DFID), Norad, and the KNCV Tuberculosis Foundation continued this work, operating jointly with pool funds and a comprehensive budget supporting all operations of the NTP.

Other partners later joined in supporting TB/HIV as an integrated element of the NTP—notably Médecins Sans Frontières (MSF), with teams from Luxemburg, France, Spain, and Greece that supported TB/HIV scale-up in specific districts; and USAID, which began supporting the TB Control Assistance Program (TB CAP) and Project HOPE in 2007.

The MOH drafted a new *TB/HIV Strategic Plan for 2008–2011* to coordinate TB/HIV activities at all levels of health service delivery, decrease the burden of HIV/AIDS in TB clients and the burden of TB in people living with HIV, and

strengthen the evidence base for TB/HIV policy development.

Specific activities proposed include

- establishing a permanent post of TB/HIV coordinator
- including district TB officers to district AIDS meetings and establishing effective TB/HIV coordinating committees at district levels
- integrating ART initiation in all central-hospital TB clinics and all clinics providing ambulatory TB treatment
- training TB officers in an ART-referral protocol for HIV-positive TB patients
- establishing mechanisms for routinely collecting critical TB/HIV data at the overlap between programs.¹⁰

Malawi's TB/HIV Collaborative Activities

MSF-Luxembourg became a pioneer in introducing integrated service delivery for TB and HIV/AIDS in Thyolo, a rural district.

Lighthouse, a local NGO, created a model TB/ART clinic that provided integrated TB and HIV/AIDS care in Lilongwe (the capital), with I-TECH

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support and PEPFAR funding. Lighthouse also supported the revision of the NTP's recording and reporting system to align it with international guidelines.

The NTP spearheaded the effort to coordinate the response to HIV/AIDS and TB and provide integrated services. The program works with the National AIDS Commission (NAC), which coordinates the national, multisectoral response to HIV/AIDS and provides funding that derives from the Global Fund.

The NAC has also participated in policy development. At the same time, the HIV/AIDS Unit in the MOH, rather than the NAC, has taken the lead in working with the NTP

to implement services at zonal, district, and community levels.

It is important to mention that the NTP resident technical advisor for 7 years became technical advisor in the MOH HIV/AIDS Unit in 2005, and his experience contributed to the design and implementation of a very successful national ART program that was very much based on the public health approach of the TB program. The advisor's track record on TB control ensured a very good and supportive relationship between the two programs and furthered the scaling up of TB/HIV.

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Given the separate nature of the national TB and HIV programs, it is imperative to have integration of services to facilitate successful implementation of joint TB/HIV activities. In Malawi, ProTEST helped initiate that integration.

is imperative to have integration of services to facilitate successful implementation of joint TB/HIV activities. In Malawi, ProTEST helped initiate that integration. When that project came to an end in 2002, a structure was in place and a successful precedent was set that helped the NTP to run the pilot project on TB/HIV integration in Lilongwe in 2004–05. The Lilongwe pilot study and continued support by Norad, WHO, and USAID helped to implement activities outlined in the first three-year plan.

The TB/HIV Technical Working Group (TWG), established in 2002, provides a concrete example of coordination and collaboration.

Meant to meet quarterly to discuss TB/HIV coordination at the national level, the TWG currently comprises representatives from the HIV/AIDS Unit, NTP, Lighthouse, TB CAP, the CDC, and MSF. The national TB/HIV officer, a position created by and based at the NTP, is the group's secretary, and this officer's presence has helped to mainstream the integration of TB/HIV activities. The TWG advises the NTP on monitoring and evaluation as well as on revising outdated TB/HIV technical guidelines.

TB/HIV collaboration in Malawi is characterized by national-level coordination and policy development, supervision by the zonal TB officer, district implementation of joint services by district health offices (including district TB officers), provider-initiated HIV counseling and testing of every TB patient, and screening of HIV-positive individuals for TB. All 28 districts offer some level of joint TB/HIV services through district hospitals and major health centers.

Central hospitals were the initial source for TB/HIV joint services, but these are now available in all districts and hospitals. Laboratory testing for TB, once available only at district level, has been decentralized to a number of community health centers over the past several years.

Specialized facilities are also playing a key role in the provision of integrated services, including the Martin Preuss Centre of Lilongwe's Bwaila Hospital, joint venture of the HIV-focused Lighthouse Trust and the MOH that offers TB and HIV services under one roof and receives funding from the NAC.

The 152 private (mostly rural) health units of the Christian

TB/HIV-related Indicators in Malawi, 2002–07¹¹

Indicator	2002	2003	2004	2005	2006	2007
Percent of TB patients tested for HIV	8%	14%	25%	44%	64%	87%
HIV prevalence among TB patients with HIV status recorded and reported	77%	69%	72%	69%	70%	70%
No. of people on CPT each year				8,073	11,244	13,779
Cumulative patients started on ART (including patients on TB treatment)		3,000	13,183	38,817	85,168	146,856

Health Association of Malawi are also making strides in providing integrated TB/HIV services.

With the community-level HIV infrastructure well established, partners have worked with the government to find ways to promote TB awareness, and they have collaborated with CBOs who have reached out to people in need of HIV prevention services and people living with HIV.

Through their community volunteers, the CBOs have raised awareness of the links between HIV/AIDS and TB, and they have also approached traditional chiefs to garner support for integrated TB/HIV services. This has been a key to success.

Community volunteers make use of an integrated client register that includes the results of TB sputum examinations, TB

treatment outcomes, the HIV test status of TB patients, and the ART and CPT status of HIV-positive TB patients. District TB officers examine these registers when supervising the volunteers.

The volunteers also use a simple TB-symptoms-and-signs questionnaire that is designed to determine whether HIV-positive clients are TB suspects and should be referred for TB diagnosis and treatment.

Joint meetings have been important to TB/HIV collaboration. The District Health Office's monthly HIV meetings have been expanded to include TB, and the district health officer, district TB officer, and district HIV/AIDS coordinator attend these meetings and work together in the same building.

District-level, quarterly meetings on HIV counseling and testing also occur, when TB officers explain

the link between TB and HIV to HIV/AIDS counselors. TB officers also meet quarterly with HIV/AIDS coordinators, prison police, and other stakeholders to discuss TB/HIV-related issues.

The district implementation plan includes both TB and HIV. The TB and HIV sectors engage in joint planning, and a joint health management information system (HMIS) quarterly review is conducted.

Since 2007, district TB officers have been using an integrated supervision checklist to determine the success of community-level TB and HIV management and treatment efforts. The TB/HIV integrated supervision checklist and integrated client register have been helpful in improving monitoring and evaluation of efforts to provide joint services, even though

these tools were introduced only in 2007.

The checklist and TB register help record data specific to TB/HIV monitoring and evaluation. The TB register helps determine how many TB patients have an HIV test result recorded, how many test HIV-positive, and whether HIV-positive TB patients have begun ART and/or CPT.

The checklist breaks some of these data down further, including the number of TB patients starting ART while on TB treatment, and

Training has been another important component of efforts to integrate TB and HIV services. A TB/HIV training manual was developed that is now in use for newly recruited doctors at the College of Medicine, paramedics at the College of Health Sciences, and nurses at the College of Nursing.

the number of TB patients on ART who develop TB within less than or more than three months.

Training has been another important component of efforts to integrate TB and HIV services. A TB/HIV training manual was developed that is now in use for newly recruited doctors at the College of Medicine, paramedics at the College of Health Sciences, and nurses at the College of Nursing.

Capacity building on TB/HIV interaction, management of opportunistic infections, nutrition, and other issues has been furnished for service providers at the district level, including zonal and district TB officers; HIV/AIDS care and treatment providers; and clinical officers and nurses.

However, the main beneficiaries of training undertaken by NTP have been those working in TB management, rather than in HIV/AIDS.

The MOH's HIV Unit undertook training of ART teams based in hospitals and large private clinics, using strict institutional pre-selection criteria and examination results. Participants were trained in ART management as well as TB screening and referral

to diagnostic centers. Certified laboratory technicians trained TB officers in HIV testing, while certified government trainers help train TB officers in HIV counseling.

The MOH also trained lay counselors in provider-initiated counseling and testing of TB patients and placed the counselors in community health centers and hospital TB wards or offices. The MOH has also offered training on screening HIV patients for active TB and on TB control for health workers, as well as training on active TB case finding for community volunteers and community-based organizations.

Activities to Decrease the TB Burden Among People Living with HIV

The main strategy in decreasing the TB burden among people living with HIV has been to screen them for TB using a simple questionnaire on TB symptoms and signs, then referring them for TB diagnosis and treatment, as necessary.

In Zomba and Mangochi districts, much of this work is conducted by CBOs such as MACOBO and YONECO, which both started out working on HIV/AIDS.

Once attached to TB CAP and government efforts to offer joint services, these CBOs found that their work with people living with HIV and with HIV support groups supplied opportunities to link their clients to TB services, demystify erroneous beliefs about TB and HIV, and provide education to help people avoid TB infection and improve sanitation.

Strategies for raising awareness about the links between HIV and TB have included peer education as well as “edutainment” (which combines education with popular theater, music, and other entertainments).

Community volunteers use the TB-screening questionnaire and monthly reports. They also use the integrated client register, a tool that records the number of patients on TB treatment, home-based care delivery, and information about TB household contacts.

While district TB officers have been key in linking people living with HIV to TB services, the involvement of district HIV/AIDS coordinators has been equally significant. One innovative strategy has been to train traditional healers to refer

people with TB symptoms to relevant services.

To improve the detection of TB among HIV-infected patients, the NTP has collaborated with CBOs to decentralize sputum collection to specific points within communities.

As a follow-up to awareness-raising efforts, community volunteers encourage the use of the numerous sputum collection points throughout their districts. Sputum samples collected are taken to community health centers for TB testing, and individuals whose sputum samples test positive are referred to community health centers or district hospitals for diagnosis and treatment.

In Zomba, 11 facilities registered and examined 2,455 TB suspects between April and June 2008, an increase of 31 percent over the 1,860 examined in the previous quarter. Between these two quarters, the number of clients referred for TB examination from HIV counseling and testing sites increased by 30 percent (from 107 to 139). In Mangochi, the number of TB suspects registered and examined during the January–March and April–June quarters was relatively stable (1,153 and 1,140,

To improve the detection of TB among HIV-infected patients, the NTP has collaborated with CBOs to decentralize sputum collection to specific points within communities.

respectively), but the number of clients referred for TB diagnosis from HIV counseling and testing sites increased by 55 percent. In the two districts, 489 HIV-positive people were screened for TB. Among these, 179 were identified as TB suspects and referred to health facilities for diagnosis and treatment.¹²

IPT to prevent TB in HIV-positive people was already an objective of the first TB/HIV scale-up plan for 2002–05. An earlier attempt to introduce this was stranded in 2005, when the director of clinical services considered it premature to start on a national scale-up.

The TB/HIV Working Group is revisiting the subject, and the MOH’s HIV Unit is also considering

the introduction of IPT as a part of HIV care. The NTP and other stakeholders decided to organize a consensus meeting to discuss the issue further after a recent review of the Botswana IPT program showed mixed results.

Activities to Decrease the HIV Burden in TB Patients

Training district TB officers to promote HIV counseling and testing has addressed issues related to low uptake of counseling and testing within TB points of service and helped to solve the problem. In addition to training, the HIV/AIDS program assisted in the placement of lay counselors in TB clinics, which has resulted in an increasing

number of TB patients undergoing HIV testing.

MSF, the “Lighthouse” wing of Kamuzu General Hospital in Lilongwe, Project Hope, and Dignitas International have all assisted in identifying TB patients in need of HIV counseling and testing and in training health workers to provide related services. (Lighthouse and MSF handled this until 2007, and Project Hope and Dignitas recently took this on.)

At the community level, CBOs offer HIV counseling and referrals for testing to TB patients. The organizations also help instruct guardians on the need for HIV and TB testing and on managing TB patients, including instruction on drug adherence and nutrition.

CPT to prevent other infections and premature death in HIV-positive people with TB was an intervention under the ProTEST Project. Cotrimoxazol was first procured with funds provided by donors, as the regular supply provided through the MOH was inadequate. Later, in collaboration with the MOH’s HIV/AIDS Unit, CPT was provided through the Global Fund grant for HIV/AIDS.

In recent years, nearly all TB patients testing HIV-positive have been offered CPT, and there has been a dramatic decrease in the number of HIV-positive patients who die of pneumocystis carinii pneumonia.

The increasing availability of ART has been one of the greatest successes in Malawi’s efforts to mitigate the effects of HIV/AIDS. As of March 2008, 159,111 people had begun ART, and 106,547 of them were still alive. Increased access to free ARVs has reduced HIV-related deaths in Malawi by 75 percent over the past four years.¹³

About 14 percent of the 159,000 patients on ART nationwide were initially identified through TB point of services, but the NTP and the MOH’s HIV/AIDS Unit estimate that, given the pervasiveness of TB, 25 percent of those on ART should have come from TB services. This information will be captured much more accurately now that the revised TB registers capture HIV status, CPT, and ART.

Successes

Although respondents who informed this report mentioned many more challenges than successes, the central achievement

In recent years, nearly all TB patients testing HIV-positive have been offered CPT, and there has been a dramatic decrease in the number of HIV-positive patients who die of pneumocystis carinii pneumonia.

remains undiminished: Malawi has integrated TB/HIV collaboration and service delivery at national, district, and community levels, and people are living longer, healthier lives as a result.

At the beginning of the three-year period, CPT was the main option for TB patients testing HIV-positive, but now they have access to CPT and ART. In addition, the approach has recently expanded from testing only TB patients for HIV to offering HIV testing to TB suspects, though this decision may not yet be largely implemented.

TB/HIV collaborative efforts have resulted in improved case-finding and diagnostics and an enhanced ability to provide medications for TB patients.

With the NTP at the helm, collaboration with the NAC, the MOH's HIV/AIDS Unit, and other partners has been specific and effective. The presence of the NTP TB/HIV officer has helped to mainstream integration of TB/HIV activities. The SWAp has helped to integrate the two sectors, as it encourages donors to contribute funding to a common pool that finances multiple programs, rather than just one.

Thanks to tools such as the integrated client register and integrated TB/HIV supervision checklist (very recently implemented through TB CAP), documentation and reporting on issues such as TB and HIV patients referred to and accessing ART are also improving. Through tools such as the checklist and the efforts of several partners and other stakeholders, the ability of community volunteers to identify TB in HIV patients and HIV in TB patients and to refer them for care has been strengthened.

CBOs and their volunteers have played a critical role in sensitizing communities about the links between TB and HIV through peer education programs conducted by people living with HIV and former TB patients, training additional volunteers in TB/HIV service provision, and organizing sputum-collection points for TB testing. CBOs have also been the principal providers of home-based care for both HIV and TB patients.

Problems and Challenges

As in other countries, Malawi's TB and HIV/AIDS programs have historically operated quite sepa-

Thanks to tools such as the integrated client register and integrated TB/HIV supervision checklist, documentation and reporting on issues such as TB and HIV patients referred to and accessing ART are also improving.

rately, and the coordination of their activities has been challenging.

While the NTP has taken the lead in TB/HIV integration, some feel that the MOH's HIV Unit has not shown sufficient interest in the issue, apart from some policy and financial support. Though international funding for HIV/AIDS activities has been considerable, TB resources are scarcer and continue to decline, notwithstanding the SWAp. While collaboration exists at the national level, there needs to be more joint planning and execution of activities.

The TWG has assisted the effort to integrate the two programs, but most often decision-makers of member bodies do not attend

TB/HIV collaboration should emphasize early screening and treatment if substantial benefits are to be achieved.

its meetings. As a result of such nonattendance, recommendations made during the meetings are not always implemented.

There appear to be many more TB service providers offering or linking to HIV/AIDS services than there are HIV service providers linking to TB services.

All TB patients testing HIV-positive should be given ARVs according to national guidelines, but only 34 percent of eligible TB patients had begun ART during the last quarter of 2007.

The zonal level of administration has not been integrated sufficiently into the collaboration process. Zonal TB officers and their HIV/AIDS counterparts are not collaborating adequately, and zonal administration does not receive

sufficient information or guidance on supervision or service integration from national institutions.

Several factors might contribute to the situation, including the fact that ART program is still a largely clinical-care model, without the structure of a public health program and dedicated staff at zonal or district levels. Supervision of all ART clinics is still done quarterly by a national-level team that bypasses all intermediate structures.

Supervision needs to be much more of a joint effort between TB and HIV programs. More funding and staff are needed to allow zonal and district officers to visit all districts and communities during a given quarter. While the integrated checklist has improved supervision, it is too long and not very user-friendly.

TB/HIV monitoring and evaluation have improved but are still not integrated sufficiently. Joint reporting at district and community levels has not been very successful: most documents remain specific and separate. Monitoring of service-delivery should focus on quality assurance as well as quantity.

Decentralization of TB/HIV services to the community level has not been optimal. TB services at district hospitals tend to be overwhelmed, and hospitals are often prohibitively far from the communities they are meant to serve.

By 1/7/08, there were 208 public and private ART centers, but close to 600 health facilities for TB treatment. This is limiting the number of people able to access ARVs. Further decentralization of ART without losing quality of care is a priority. Better use of community health centers and CBOs could help, but this would require more resources and capacity building. Health centers need more microscopes and laboratory equipment, as well as additional staff training on TB/HIV services.

Above all, there are still too many deaths from TB and HIV. TB/HIV collaboration should emphasize early screening and treatment if substantial benefits are to be achieved. The wait times between completion of initial phase of TB treatment and the initiation of ART also pose a problem, as many patients continue to die in the interim.

Lessons Learned and Recommendations

The following lessons learned and recommendations were derived from interviews with stakeholders at all levels of TB/HIV collaboration and service provision.

A pilot program should be used to study the introduction of joint TB/HIV services.

For Malawi, participation in ProTEST, the work of MSF-Luxembourg in Thyolo, and the NTP TB/HIV pilot study in Lilongwe paved the way for the scaling up of collaborative TB/HIV activities.

It is expected that current efforts in selected districts where community-based TB/HIV activities are being implemented will contribute to further scale up in additional districts.

Policies on TB/HIV collaboration should ensure the involvement of all key stakeholders.

Malawi's *TB/HIV Strategic Plan* outlined roles for the NTP and the MOH's HIV/AIDS Unit and, to some extent, for district-level administrators and clinical personnel, including laboratory technicians.

However, these roles were not always clearly defined, and some key stakeholders were left out, including zonal administrators and civil society.

People living with TB and HIV have important contributions to make to TB/HIV collaboration and should be involved in policy development and implementation.

Policies on TB/HIV collaboration should provide for specific structures to govern coordination, service provision, and supervision.

While the *TB/HIV Strategic Plan* described the role of the TWG in coordination and national-level decision-making, it did not establish structures (such as steering committees or working groups) to monitor and ensure the integration process at zonal or district levels. The presence of such structures could help guarantee the smooth functioning of TB/HIV collaboration at all levels.

It is essential to dedicate sufficient resources to TB/HIV collaboration.

Part of the support for integrating services needs to come from resources available for HIV/AIDS

activities. Given the connection between TB and HIV/AIDS, mobilizing support for joint services means challenging traditional notions of the use of Global Fund financing and other such resources.

Human resources should be strengthened to provide joint services.

Human resources for healthcare services are already scarce in Malawi. Countrywide efforts in TB/HIV service integration require a sustained investment in human resources, including training and additional staff, especially during the scale-up phase. Refresher training is also key to ongoing success.

The involvement of traditional leaders in TB/HIV collaboration increases community acceptance of joint services.

The wider community seems much more likely to accept and use TB/HIV services if CBOs work with and involve traditional village chiefs and traditional healers in awareness-raising, service provision, and referrals. Family members should also be involved in service provision and treatment monitoring.

It is easier to integrate services when essential medications are available.

When TB/HIV integration efforts first began, ARVs were not widely available. Increased access in Malawi to free ARVs has dramatically reduced HIV-related deaths, and greater availability of ART and CPT has increased the effectiveness of joint services in Malawi.

Those involved in planning TB/HIV integration must develop a strategy for getting patients onto ART in a timely way.

It has been a major disappointment that only 34 percent of eligible TB patients are accessing ART in Malawi.

The survival of people with both HIV and TB depends on connecting them to ARVs as quickly as possible, an effort that requires decentralizing ART from regional or district hospitals to community-based health facilities.

Making ART more accessible is vital, since Malawi has more than 600 TB treatment centers but just over 200 ART centers.

The end result of TB/HIV collaboration needs to be patient benefit and a patient-centered approach that focuses on follow-up, adherence, and nutritional and social support.

When planning integration activities, stakeholders must keep in mind that the ultimate goal is the health and wellbeing of patients. If people are not benefiting—for example, if HIV-positive TB patients are not accessing ART—then collaboration has failed and needs to be reconceived.

Evaluation and pilot projects can be used to verify whether patients are better off after TB/HIV service integration. ●

Notes

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KNCV Tuberculosis Foundation / TBCTA

P.O. Box 146, 2501 CC
The Hague, the Netherlands
Tel: 31 (0) 70 4167222; fax: 31 (0) 70 3584004
Email: info@kncvtbc.nl

Family Health International

4401 Wilson Blvd. Suite 700
Arlington, VA USA 22203
Tel: 703.516.9779; fax: 703.516.9781
Email: publications@fhi.org
www.fhi.org

