

Improving early detection of tuberculosis among most-at-risk populations through verbal screening

A CASE STUDY FROM THE AVAHAN INDIA AIDS INITIATIVE



CASE STUDY

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This case study is one in a series produced by the International HIV/AIDS Alliance. The series brings together good practice to define and guide the Alliance's community-level programming in a range of technical areas, including:

- human rights and the greater involvement of people living with HIV (GIPA)
- research, evaluation and documentation
- HIV prevention
- Sexual and reproductive health and rights and HIV integration
- HIV and tuberculosis
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- HIV and drug use

Authors: Saroj Tucker, Gitau Mburu, Ravi Kanth Mallipeddi and Parimi Prabhakar

Reviewers: Anja Teltschik, Divya Bajpai, Helen Parry, Joydeep Sen, Lana Velebit, Megan Gaventa, Shaleen Rakesh, Siddo Deva, Sophia Lonappan

Copy editor: Kelly Safreed-Harmon

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Abbreviations and acronyms

AIDS	acquired immunodeficiency syndrome
DALY	disability-adjusted life year
DMC	designated microscopic centre
DOT	directly observed treatment
HIV	human immunodeficiency virus
KP	key population
MoU	memorandum of understanding
NGO	nongovernmental organisation
RNTCP	Revised National Tuberculosis Control Programme
STI	sexually transmitted infection
TB	tuberculosis
UNAIDS	Joint United Nations Programme on HIV/AIDS
WHO	World Health Organization

Executive summary

Significant progress has been made in scaling up treatment and care for people living with HIV. Today, with access to antiretroviral therapy, people living with HIV can look forward to longer and more productive lives – if they escape tuberculosis (TB).

Having HIV puts someone at much higher risk of experiencing TB disease, and TB is the leading killer of people with HIV. In 2010, 1.1 million people were co-infected with HIV and TB.¹ The rate of progression of TB disease is elevated among people living with HIV. Without proper treatment, approximately 90% of people with HIV will die within months of developing pulmonary TB. Approximately 350,000 deaths among people with HIV are caused by TB annually. Furthermore, besides causing an estimated 10.8 million disability-adjusted life years to be lost globally, TB often has long-term sequelae such as renal failure and learning difficulties.^{2, 3, 4}

Increased recognition that TB/HIV is a major public health challenge has resulted in a global movement to integrate TB/HIV interventions. Thus far, encouraging results have been achieved in relation to curbing TB among people living with HIV. Evidence shows that where these interventions have been initiated, significant progress has been made, saving thousands of lives.¹ In 2010, 2.3 million people living with HIV were screened for TB, of whom 87% were in Africa. Also in 2010, 2.1 million TB patients knew their HIV status. In the same year, 180,000 people living with HIV were provided with isoniazid preventive therapy to prevent TB and 46% of people co-infected with HIV and TB were provided with antiretroviral therapy.¹ These interventions have been founded on the World Health Organization (WHO) policy on collaborative TB/HIV activities, which provides guidance to national programmes and other stakeholders seeking to combat TB/HIV.⁶ The most recent version of the WHO policy highlights 12 recommended collaborative activities that support three core principles: establishing and strengthening mechanisms for delivering integrated TB and HIV services; reducing the burden of TB among people living with HIV; and reducing the burden of HIV among people with presumptive and diagnosed TB.⁶

Integration of TB services into HIV services historically has focused to a large extent on generalised HIV epidemics, with less emphasis on most-at-risk populations in concentrated epidemics. Increasingly, there is recognition that TB/HIV co-infection is an equally salient issue in concentrated epidemics. In 2008, WHO published guidelines for integration of TB services for people who inject drugs.⁷ The integration of TB services for other populations with high HIV infection rates remains equally important in controlling TB/HIV globally. Populations that merit particular attention include sex workers and men who have sex with men.

Scaling up integrated TB/HIV services for these key populations requires a clear understanding of their vulnerabilities and a nuanced recognition of stigma and other structural barriers that limit their access to health services, including TB and HIV services. Tackling these issues lays a foundation for the implementation of the WHO policy on collaborative TB/HIV activities.

This case study provides an example from the field of how intensified TB case finding through verbal screening can be implemented within HIV prevention programmes for key populations in concentrated epidemics. It is intended to promote knowledge-sharing; disseminate lessons learnt in TB/HIV integration; and improve the quality and continuum of care. The case study is targeted at managers and programme officers in organisations implementing HIV prevention services for key populations. It provides practical steps that may be performed within such settings to integrate TB screening into HIV services. It refers to a number of internationally

1.1
million
people worldwide are co-
infected with HIV and TB.

350,000
TB deaths occur annually
among people with HIV.



recognised guidelines and principles in TB care, including the International Standards for TB Care,⁵ WHO policy on collaborative TB/HIV activities⁶ and the International HIV/AIDS Alliance good practice TB/HIV programming standards (Appendix 1).

Lessons learnt and recommendations

This case study concludes that verbal TB screening is an effective tool for facilitating early detection of tuberculosis among key populations, and that verbal TB screening should be scaled up within HIV prevention and care programmes in order to control TB/HIV co-infection. It further recommends that:

- 1.** Tackling stigma and other structural barriers should be considered part of integrating TB into HIV services, and should be scaled up appropriately within HIV programmes.
- 2.** Civil society engagement in performing community-based TB activities should be supported by national TB programmes through collaborative mechanisms, especially in high-burden countries.

Introduction

Global tuberculosis burden

Tuberculosis (TB) is the most common opportunistic infection among people living with HIV and also is one of the leading causes of death in this population. Globally, it is estimated that 350,000 (0.32 million–0.39 million) deaths from TB occur annually among people who are HIV-positive, accounting for nearly 25% of HIV-related deaths.¹ There are approximately 1.1 million cases of TB/HIV co-infection, which causes significant disease burden.¹ Tuberculosis often causes long-term sequelae for instance renal failure and learning difficulties among those who survive renal TB and TB meningitis respectively.^{2,3,4} In addition, estimates of disability-adjusted life years (DALYs), a time-based measure that measure the burden of disease from deaths and ill-health, show that TB caused 10.8 million years to be lost in 2008 globally.⁴ The World Health Organization (WHO), the Stop TB Partnership, and UNAIDS currently have the global TB control target of reducing TB mortality rates among people who are HIV-positive by 50% relative to rates in 2004, the year in which TB mortality among HIV-positive people was estimated to have peaked.¹

WHO-RECOMMENDED COLLABORATIVE TB/HIV ACTIVITIES⁶

1. Establish and strengthen the mechanisms for delivering integrated TB and HIV services

- Set up and strengthen a coordinating body for collaborative TB/HIV activities functional at all levels
- Determine HIV prevalence among TB patients and TB prevalence among people living with HIV
- Carry out joint TB/HIV planning to integrate the delivery of TB and HIV services
- Monitor and evaluate collaborative TB/HIV activities

2. Reduce the burden of TB in people living with HIV and initiate early antiretroviral therapy (the “Three I’s for HIV/TB”)

- Intensify TB case-finding and ensure high-quality antituberculosis treatment
- Initiate TB prevention with isoniazid preventive therapy and early antiretroviral therapy
- Ensure control of TB infection in health-care facilities and congregate settings

3. Reduce the burden of HIV in patients with presumptive and diagnosed TB

- Provide HIV testing and counselling to patients with presumptive and diagnosed TB
- Provide HIV prevention interventions for patients with presumptive and diagnosed TB
- Provide co-trimoxazole preventive therapy for TB patients living with HIV
- Ensure HIV prevention interventions, treatment, and care for TB patients living with HIV
- Provide antiretroviral therapy for TB patients living with HIV

In order to achieve this, WHO recommends a set of evidence-based interventions to reduce TB morbidity and mortality among people living with HIV. These interventions are commonly called the “Three I’s”: intensified TB case-finding, isoniazid preventive therapy, and infection control.⁶ At the same time, WHO recommends a set of five interventions to reduce the burden of HIV among people with TB, including HIV testing, HIV prevention, co-trimoxazole preventive therapy, antiretroviral therapy, and HIV care and support.⁶ In addition, WHO recommends the establishment of coordinating mechanisms for TB/HIV collaboration. These include a coordinating body for TB/HIV activities functional at all levels; surveillance to determine HIV prevalence among people with TB as well as TB prevalence among people living with HIV; joint TB/HIV planning; and monitoring of collaborative activities by HIV and TB implementers.⁶

India

Tuberculosis poses a huge public health challenge in India, with an estimated 2.3 million incident cases of TB occurring every year. It is estimated that between 5% and 6.4% of incident TB cases in India occur in people co-infected with HIV.^{1, 8} In 2010, an estimated 41,500 people living with HIV were co-infected with TB, the second-highest national caseload in the world after South Africa.¹ This is particularly significant considering that India alone accounts for 49% of all cases of HIV in Southeast Asia.¹

Andhra Pradesh

The 23 districts of the Indian state of Andhra Pradesh (population: 84,655,533) are grouped into three regions: Coastal Andhra, Rayalseema and Telengana. Andhra Pradesh has the highest burden of HIV among all of India’s states, and TB/HIV co-infection rates reported in 2010 were similar to those reported at the national level. Five percent of TB cases referred to integrated counselling and testing centres from Revised National Tuberculosis Control Programme (RNTCP) units between March 2009 and February 2010 were found to be cases of TB/HIV co-infection.⁹

Key populations

In India, HIV is concentrated among key populations such as female sex workers, men who have sex with men, and injecting drug users. These groups are at particularly high risk of TB/HIV co-infection. HIV prevalence is currently estimated at between 4.6% and 4.9% among female sex workers and 7.3% among men who have sex with men – far higher than the average 0.49% HIV prevalence found in Indian antenatal care sentinel surveillance (an indicator of the prevalence of HIV in the general population).^{1, 10} Due to their weakened immune systems, members of these key populations (and other people infected with HIV) are at high risk of developing TB disease and of having their TB disease progress to death.

Furthermore, some key populations may experience difficulties and delays in accessing TB services and general health services even in countries with relatively strong TB control programmes because of structural barriers such as user fees and stigma; this can increase TB/HIV-related morbidity and mortality. In order to develop better policy and programmatic guidance, there is an imperative to build an evidence base identifying current barriers to TB/HIV integration and documenting interventions that successfully overcame those barriers.

Case study

Purpose

This case study was written in order to both demonstrate the need for TB screening among key populations and present lessons learnt from implementation of a verbal TB screening programme staffed by peer educators doing HIV and sexually transmitted infection (STI) prevention outreach. The overall purpose is to contribute to a growing evidence base on the integration of TB services into HIV prevention services for key populations within concentrated HIV epidemics.

Methodology

This case study undertakes a retrospective review of data from the India HIV/AIDS Alliance's health information system for the Avahan India AIDS Initiative. Avahan is an HIV prevention programme for key populations funded by the Bill & Melinda Gates Foundation (see details below).¹¹ The case study draws on cumulative and proportionate data on the number of key population members (KPs) reached with TB/HIV services for the three-year period 2008–2010. Findings are supplemented with a personal story based on an interview with a beneficiary of services. Every effort was made to ensure the reliability and ethical soundness of this case study, and the interview information was only shared with the beneficiary's consent.

Project background

The India HIV/AIDS Alliance is a lead partner in the Avahan India AIDS Initiative in Andhra Pradesh, working through a network of nongovernmental organisations (NGOs) to implement HIV prevention among female sex workers, men who have sex with men, and transgender populations in two of the state's three regions – Rayalseema and Telengana. Since its inception, the project's guiding principles have been community mobilisation and integrated service delivery. The network of NGOs has targeted KPs with behaviour change communication and has mobilised them to visit STI clinics called Mythri clinics. These facilities provide screening and treatment for STIs, HIV testing, risk-reduction counselling, condoms, and linkages to antiretroviral therapy programmes.

The need for verbal TB screening

In light of the magnitude of the problem that TB presents for people with HIV, WHO recommends intensified case finding that involves screening for symptoms of TB among HIV-infected individuals. Evidence shows that symptom-based TB screening using symptoms such as chronic cough, fever, night sweats, and weight loss is a reliable method of identifying TB in HIV-positive adults.¹² Early diagnosis and treatment of TB co-infection in people living with HIV is critical to reducing TB morbidity and mortality, and probably lowers the rate of TB transmission as well.¹

Taking this into consideration, Avahan and STI capacity building partners entered into a memorandum of understanding (MoU) with RNTCP in March 2007 with the aim of increasing intensified case-finding and access to TB treatment for key populations across six Indian states with high HIV prevalence. This was an add-on to the Avahan programme's model of using peer educators to deliver STI and HIV prevention services to key populations. It was recognised that in addition to performing their originally planned tasks, peer educators could also provide TB education and screening to key populations and make referrals to the appropriate TB services. Furthermore, peer educators were in a good position to provide adherence support and directly observed treatment to those on TB treatment.

DEMONSTRATING GOOD PRACTICE PRINCIPLES



The verbal TB screening intervention was

conceived in response to epidemiological trends and it focused on assembling a package of evidence-based interventions that targeted the distinct needs of populations thought to be at highest risk of TB/HIV co-infection.

In summary, the collaboration between Avahan and RNTCP was intended to give KPs access to TB services through the existing HIV/STI service infrastructure. As part of this collaboration, Alliance India initiated intensified TB case-finding in Andhra Pradesh from March 2007 onward with the aim of increasing both early TB detection and the completion of TB treatment among high-risk populations.

Approach and interventions

State-level coordination

State-level coordination of TB and HIV services in Andhra Pradesh is performed through a coordination committee set up with state TB officers and representatives from Alliance India and Hindustan Latex Family Planning Promotion Trust, the Avahan lead partner in the Coastal Andhra region. State-level coordination plays a significant role in increasing collaborative activities for TB and HIV implementers.

The TB/HIV coordination committee has taken an inclusive approach by involving both the national TB programme and implementers in its efforts, thus enhancing communication and coordination in relation to TB/HIV activities in Andhra Pradesh. It also provides a platform for making common decisions on TB/HIV services. In June 2007, the committee agreed with Alliance India's suggestion to pilot intensified TB verbal screening activities in two districts and, based on the results of the pilot, to scale up to other districts at a later stage. The districts chosen for the pilot intervention were Chittoor (population: 4,170,468) and Anantapur (population: 4,083,315) in Rayalaseema regions

DEMONSTRATING GOOD PRACTICE PRINCIPLES



Effective coordinating mechanisms

for TB/HIV collaboration at both the state and district level in Andhra Pradesh were a major factor in the success of the verbal TB screening intervention.

Piloting of intervention

Piloting this new TB intervention provided an opportunity to assess their feasibility, cost, and acceptability, as well as facilitating quality improvement by identifying good practices that were later brought to scale. Results of the pilot showed that verbal TB screening was feasible and acceptable to key populations.

Orientation of service providers

Before a new set of interventions is introduced, there is often an imperative to orientate all stakeholders to them in the interest of gathering collective support for their implementation. In this project, all district TB authorities and Avahan implementing partners were introduced to this model of TB screening through a series of meetings including state-level annual review meetings. These forums provided opportunities for consultation on how to best implement the new intervention while at the same time strengthening existing reporting mechanisms. This approach also strengthened the existing partnership platforms for coordination of TB/HIV services in Andhra Pradesh.

Strengthening capacity

Capacity needed to be strengthened among service providers in order to ensure quality implementation of the new TB verbal screening intervention. NGO staff underwent training on diagnosis and treatment of TB, including directly observed treatment. The staffs were specifically targeted for training included peer educators, outreach workers, counsellors, nurses, and physicians.

Integrated service delivery: verbal TB screening integrated into HIV services

At the service delivery level, activities were focused on integrating verbal TB screening into HIV and STI services. Symptom-based verbal TB screening was performed for key population members at the field and also while attending STI clinics. Referral linkages with designated microscopic centres (DMCs) at the RNTCP district TB units were strengthened to facilitate "dual referral" of key populations. In the dual referral model, people suspected of having TB were referred to DMCs, and then those diagnosed with TB were referred by DMCs back to STI clinics for treatment and follow up.

When index cases of TB were identified through verbal screening, they were encouraged to bring their close contacts for screening as well. The district tuberculosis unit of the RNTCP used microscopic sputum smear examination to perform diagnosis, following which they provided treatment for confirmed cases. Subsequently, confirmed TB patients were allowed to

choose their preferred provider of directly observed treatment (from among DOTS centre staff, peer educators, and STI clinic nurses). Peer educators and clinic nurses offered additional adherence support.

Tools used

The introduction of new interventions often requires the development of new tools and indicators, as well as the expansion of the monitoring and evaluation system. In this project, referral protocols and screening tools were tailor-made for peer educators to use with key populations.

Lack of adequate knowledge of TB is a significant barrier to control of TB in many settings.¹⁴ Thus the training tools, manuals, and educational materials developed for the TB verbal screening intervention were designed to increase outreach workers' and peer educators' knowledge of TB. Training sessions employed lay terms to explain signs and symptoms of TB and to tell service providers where and how people believed to have TB can seek treatment. Training sessions also addressed how service providers could contribute to adherence support, including directly observed therapy. All tools were developed in a collaborative effort with other Avahan partners, building on tools and resources already in existence.

For instance, a verbal screening tool for use by the outreach team was developed in collaboration with RNTCP and the FHI STI capacity building team (Table 1).

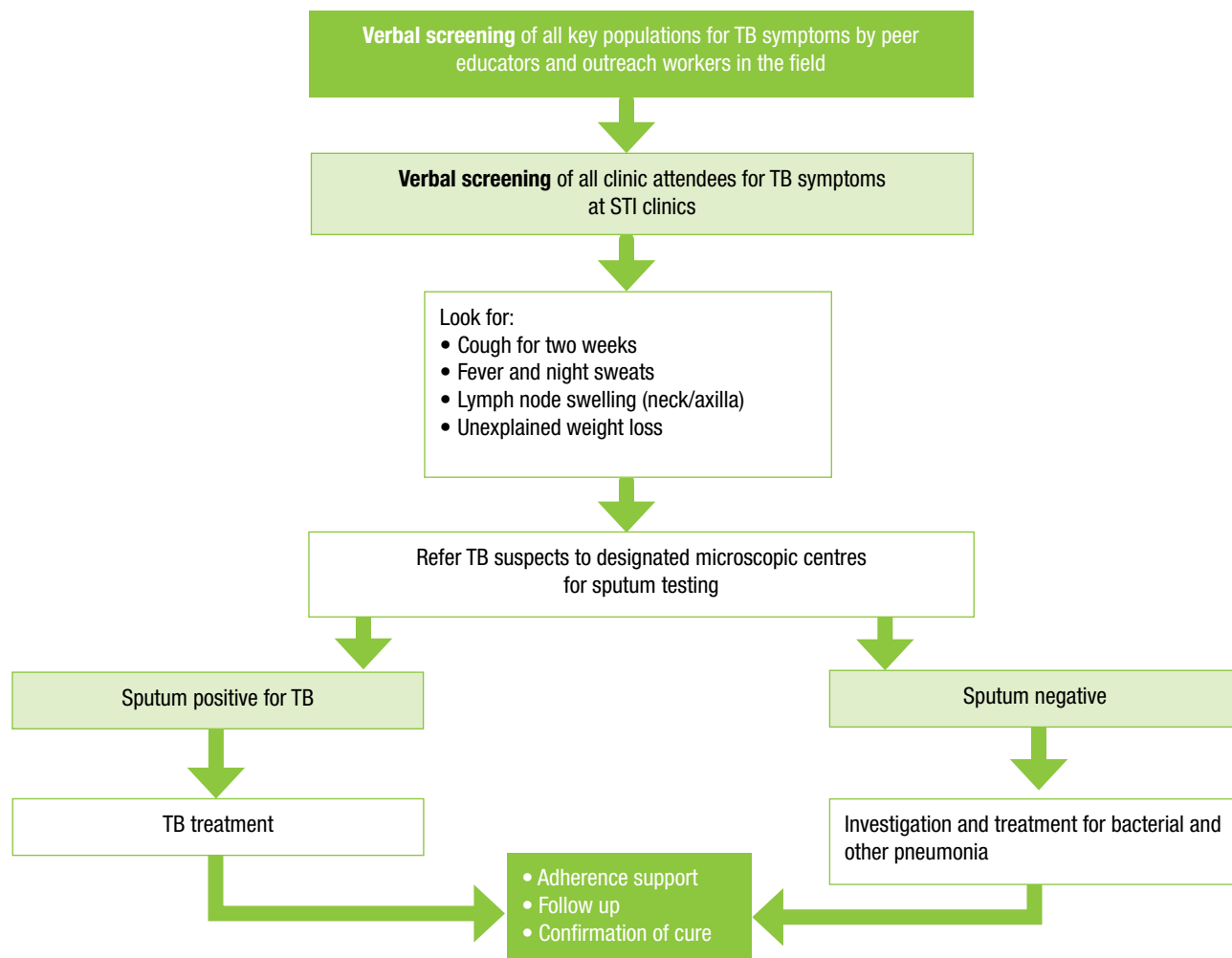
In addition, a referral protocol was developed and standardised by RNTCP and Avahan. The referral protocol explained the process of active case finding, referral, diagnosis, and treatment to outreach and clinic staff (Figure 1).

TABLE 1: VERBAL SCREENING QUESTIONS

Do you have any of the following symptoms?

- ✓ Cough for two weeks
- ✓ Unexplained weight loss
- ✓ Fever and night sweats
- ✓ Lymph node swelling
- ✓ Headache, dizziness, neck rigidity
- ✓ Fatigue, breathlessness, and other symptoms

FIGURE 1: TB REFERRAL PROTOCOL FOR OUTREACH STAFF AND CLINIC STAFF



DEMONSTRATING GOOD PRACTICE PRINCIPLES



The verbal TB screening intervention integrated capacity-building, training, and expansion of relevant indicators to support quality assurance and consistent monitoring.

Further, an integrated TB training toolkit was developed with the leadership of FHI STI capacity building team to support a two-day training; components included the basic *Coming together to stop TB* training manual; visual aids (e.g., flash cards, a treatment chart, a TB quiz); the animated film *All in a day's work*; and other educational materials and booklets.

Finally, a number of monitoring and supervision support tools were incorporated to strengthen data collection, analysis, and dissemination. As noted earlier, the incorporation of measurable indicators that can be tracked over time is an important aspect of service integration. WHO has recommended a set of indicators for measuring TB/HIV collaboration, some of which were incorporated in the verbal TB screening intervention's compendium of indicators (Table 2).⁵ Programme monitoring through quarterly TB reports captured these key indicators.

Programme area	Core indicators
Service delivery	<ul style="list-style-type: none"> ■ Number and proportion of KPs referred by outreach for TB screening ■ Number of KPs screened for TB ■ Number of KPs identified as TB suspects based on the case definition ■ Number of TB suspects referred to RNTCP units ■ Number of TB suspects diagnosed with TB ■ Number of TB cases treated, (a) with DOTS, and (b) with non-DOTS
Capacity-building	<ul style="list-style-type: none"> ■ Number of physicians, nurses, and counsellors trained on the revised national TB control programme procedures ■ Number of peer educators and outreach workers trained on the revised national TB control programme procedures
Partnerships and mechanisms of collaboration	<ul style="list-style-type: none"> ■ Number of NGOs with signed agreements with RNTCP ■ Total number of NGOs supported by service level providers

Results

The project achieved a number of outcomes, including increased coverage of services; improved capacity for local organizations to deliver TB services; and – importantly – increased access to TB treatment. To start with, health care providers, including doctors, nurses, counsellors, peer educators, and outreach workers were trained on various aspects of TB control, ranging from recognition of symptoms to medical treatment. By May 2008, most peer-educators and outreach workers were able to correctly identify signs and symptoms of TB and were regularly sensitising KPs on TB (unpublished data). By the end of the project and in line with the project objective, verbal TB screening had been scaled-up from two to 13 districts in Andhra Pradesh.

The following sections describe three results areas: access to TB screening; case finding; and access to TB treatment in more detail.

Access to TB screening

During the three-year implementation period, 2008–2010, an annual average of 53,749 key population members (female sex workers, men who have sex with men, and transgender people) received at least one type of service from the project, i.e. HIV, STI, or TB prevention, treatment, or care (Table 3). On average, 88% of service recipients were screened verbally for TB every year. In addition, peer educators provided a total of 35,086 referrals to STI clinics following verbal TB screening during the implementation period.

TABLE 3: USE OF SERVICES BY MEMBERS OF KEY POPULATIONS, INCLUDING USE OF VERBAL TB SCREENING

	2008	2009	2010	Annual average, 2008–2010
Number of KP members receiving at least one service from an NGO per quarter	56,894	55,809	48,545	53,749
Capacity-building	50,522	46,614	44,736	47,291

Case finding

Table 4 shows the number of TB suspects referred to RNTCP district tuberculosis units, as well as the number and proportion subsequently diagnosed with TB using sputum smear microscopy. The number of cases suspected and referred during the three-year project period ranged from 1,098 to 2,003 per annum. Sputum smear examination indicated that 5.1% to 7.2% of these suspected TB cases were indeed TB disease.

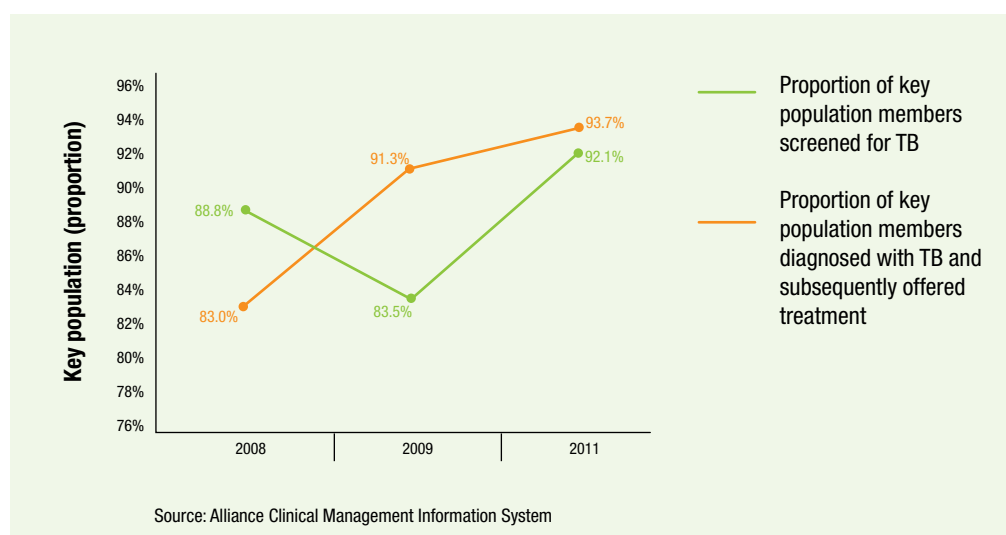
TABLE 4: NUMBER OF REFERRALS BASED ON VERBAL TB SCREENING AND NUMBER AND PROPORTION OF SUSPECTED TB CASES CONFIRMED USING SPUTUM SMEAR MICROSCOPY

	2008	2009	2010
Number of TB suspects referred to RNTCP district TB units	1,471	2,003	1,098
Number (and proportion) of TB suspects diagnosed with TB	106 (7.2%)	103 (5.1%)	64 (5.8%)

Access to TB treatment

During the three-year project period, the proportion of KPs who accessed TB treatment subsequent to a TB diagnosis increased from 83.0% to 93.7% (Figure 2).

FIGURE 2: PROPORTION OF ALL KEY POPULATIONS SCREENED FOR TB AND PROPORTION OF THOSE DIAGNOSED WITH TB OFFERED TREATMENT



SATYANANDAM'S STORY



Satyanandam developed a cough one day. In a week the cough was accompanied by a fever, with sweating at night. During Satyanandam's regular medical check-up at Mythri clinic, the doctor conducted verbal TB screening and concluded that there was reason to suspect TB. The doctor gave Satyanandam a referral slip to visit a nearby designated microscopic centre. An outreach worker accompanied him to the facility, where his sputum was examined under a microscope and was found positive for TB.

Satyanandam's wife and children were also taken for microscopic sputum smear examination, but luckily tested negative for TB. Satyanandam was started on directly observed TB treatment through a local NGO, where his medicine was stored and an outreach worker continuously supported him by observing his TB treatment. The outreach worker also advised him not to cough openly in public places, to stop smoking, to practice good cough etiquette, and to take medicines regularly. After six months of treatment, Satyanandam was cured of TB.

"Thanks to the Mythri clinic doctor, the outreach workers, and the staff of the NGO who cared for me during my illness. Because of their support, my family is healthy and happy now."

Lessons learnt and good practices

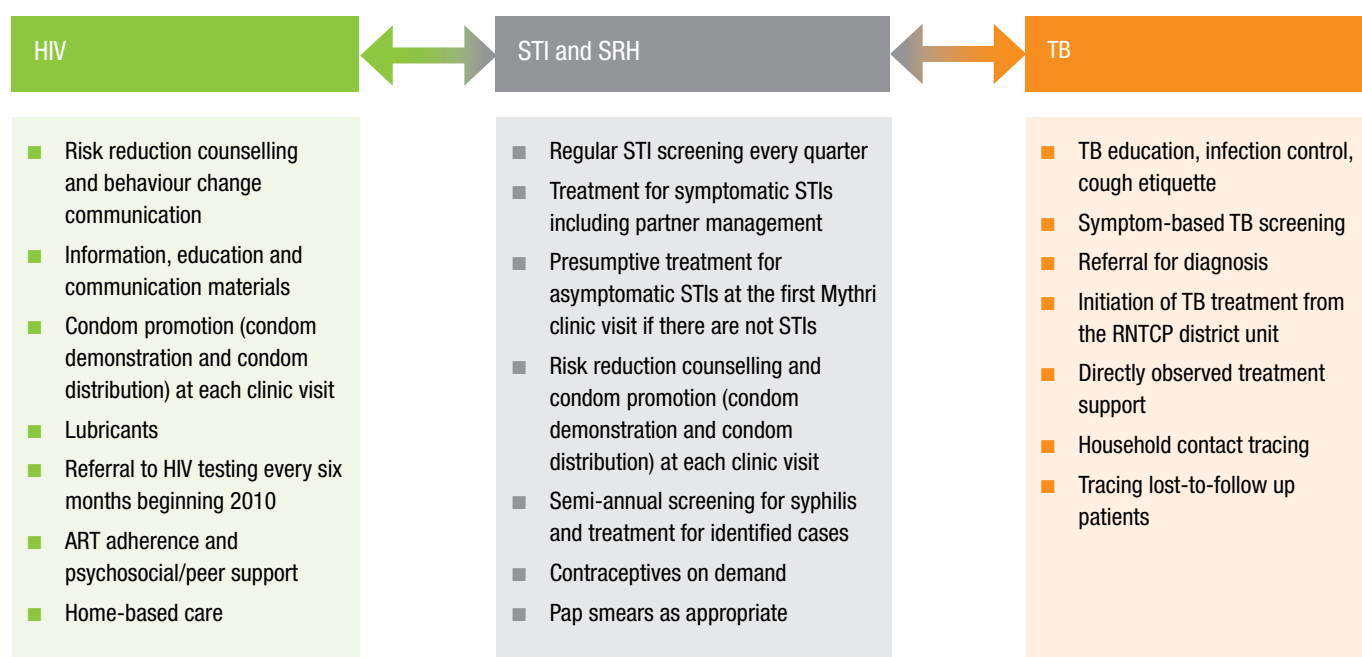
This case study illustrates a number of good practices that promote the integration of TB services for people living with, or at high risk of, acquiring HIV. We would like to particularly highlight the significance of the integrated package of services; strong partnerships and collaboration; and the monitoring of TB/HIV collaborative activities.

Integrated package of services

Integrating TB and HIV services expands the repertoire of services available for key populations and creates the possibility of increasing clinical and management efficiency.¹³ Determinations about which additional services to integrate should be made in light of the needs of the population and resources available. For example, this project delivered a number of interventions within a package that aimed at integrated STI prevention and treatment; TB prevention and treatment; and HIV testing and care. It demonstrated the feasibility of integrating intensified case finding through verbal TB screening for high-risk populations within HIV prevention programmes.

As a result of integration, members of key populations were offered HIV and STI prevention and testing services, educated about TB, screened for TB, and linked to TB diagnosis and treatment. As this case study has demonstrated, integrating TB and HIV services for key populations often requires a number of changes including designing new tools and training staff.¹⁵ As noted in the introduction, people living with HIV are generally at high risk for TB, and screening them and treating those found to have TB disease is an essential component of the overall response to the HIV epidemic.

ESSENTIAL SERVICE PACKAGE IMPLEMENTED IN THE AVAHAN PROGRAMME*



* The package of services provided could differ depending on contexts, epidemiology, prevailing policy, and available resources.

Delivering comprehensive and integrated services means giving people access to the right intervention from the right service at the right time. For a sex worker, a man who has sex with men or a transgender, this entails HIV combination prevention, i.e. HIV-testing, risk reduction counselling, condoms, lubricants, and other services and products, while simultaneously supporting them as they cope with stigma and other structural barriers to access to health services. It is the responsibility of health services organisations to meet these complex needs, including active outreach to key populations to mitigate the threat that TB poses.

Whereas the ideal situation would be to screen, counsel, test, and initiate TB treatment at the STI/HIV clinic (making it a “one-stop shop”), this is often not possible as it would require significantly expanding the resources that support the health infrastructure.¹⁵ Thus TB screening and referral is a good first step toward integrating TB services into HIV services. This case study highlights the application of two Alliance good practice programming standards for HIV and TB: screening people living with HIV for TB and offering them TB treatment. These interventions should always be performed, as they define and are an indicator of good-quality community-level HIV programming. In this case, all three key populations of interest were offered HIV testing and counselling, and key population members at risk of TB were referred for diagnosis and treatment. (See Appendix 1 for a list of all Alliance good practice programming standards for HIV and TB.)

Partnerships and mechanisms for collaboration

Better partnership and collaboration between various stakeholders is essential for successful integration of TB and HIV services. Specifically, WHO recommends the formation of mechanisms for collaboration as a first step to HIV/TB integration (see Table 1 on page 9 for details). The ability of partnerships to complement the services provided by different organisations is critical in ensuring continuity of care for service beneficiaries. In this case study, the collaboration was between RNTCP, Avahan (including Alliance India) and FHI.

An important element in this partnership was the signing of an MoU, which outlined the roles and responsibilities of each stakeholder. RNTCP devised this scheme of partnership, and in 2007 and 2008, NGOs signed MoUs with RNTCP supporting the NGOs to create awareness about TB and mandating them to provide directly observed treatment. As in most cases, this MoU had no monetary value or other financial implications; however, there is potential for a results-based MoU, in which financial incentives could be tied to outputs or outcomes, e.g. numbers of people reached or screened, or TB cases identified. Many of the essential steps in implementing TB screening demonstrated in this case study require collaboration and partnerships between NGOs, national TB programmes, and the community. Partnerships provide avenues for all relevant stakeholders to participate in joint planning, surveillance, and monitoring and evaluation processes, often through structured working groups, steering committees, and other coordinating bodies. In this case study, the district TB/HIV coordination committees played an important role.

In addition, partnerships facilitate the clear identification of the role of each partner; ensure regular contact; strengthen information-sharing and reporting; and provide opportunities to handle bottlenecks in implementation. In this case study, the district TB/HIV coordination committees provided the mechanism for this.

Monitoring collaborative mechanisms

It is important that HIV programmes expand their indicators to measure progress in integrating TB services.¹⁶ The adoption of appropriate indicators facilitates information for action and performance improvement. The WHO’s recommended set of indicators for measuring TB/HIV collaborative activities include some of the indicators used in this case study, providing a means of assessing quality and coverage as well as capacity to deliver services.* Examples of WHO indicators used include the number of TB suspects diagnosed with TB and the number of TB cases provided treatment.

* WHO is currently developing an operational guidance on community-based and integrated TB activities, including a standardized M&E system, which is expected to be available in 2012.

In addition, it is important to measure the progress and strength of mechanisms for collaboration. This is not necessarily done in many settings, nor does WHO require this to be reported by countries. However, the measurement of the strength of collaboration is important in tracking the implementation of collaborative activities, especially because collaborative mechanisms are often seen as a first step in TB/HIV integration. In this case study, the existence of effective coordinating bodies for TB/HIV activities at the state level as well as the district level facilitated joint planning. In addition, the number of NGOs with signed agreements with RNTCP was tracked over time, as was the number of NGOs supported by service-level providers.

ESSENTIAL STEPS IN INTEGRATING SYSTEMATIC VERBAL TB SCREENING IN THIS CASE STUDY

- 1.** Situation analysis to identify service gaps, disease burden, and capacity.
- 2.** Buy-in of the concept by all stakeholders for collaborative efforts and joint planning of project activities.
- 3.** Designing tools for training, verbal screening, monitoring, and reporting.
- 4.** Establishing referral linkages with local TB diagnostic centres and developing referral systems.
- 5.** Building the capacity of outreach workers and peer educators regarding basic TB information and verbal TB screening.
- 6.** Implementation of verbal screening, referrals, diagnosis, and follow-up for treatment.
- 7.** Data collection, analysis, and reporting as part of monitoring and evaluation.
- 8.** Joint reviews and dissemination of outcomes, identifying remaining gaps, to inform decision-making, policy-making, and further scale-up.

Conclusions and recommendations

EXAMPLES OF BARRIERS TO TB/HIV INTEGRATION FROM THIS CASE STUDY

- 1. High NGO staff turnover.** This resulted in a need for continuous training and capacity-building.
- 2. Long distances to TB treatment centres.** This often increased travel costs for patients. The service delivery structure was shifted to facilitate provision of treatment through Mythri or other clinics that were closer to the patients' residence.
- 3. Migratory populations.** About 20%–40% of key populations were mobile, requiring active follow-up to ensure completion of their TB treatment.

Verbal TB screening is an easy-to-use and effective tool to ensure early detection of tuberculosis in key populations targeted for HIV prevention services and has potential to significantly contribute to control of TB/HIV co-infection.

Integrating TB services into HIV services requires understanding the threat that TB poses both to people living with HIV and to most-at-risk populations, and making significant efforts to respond accordingly.¹⁴ Policy-makers and programme implementers must surmount barriers to TB/HIV integration in order to address TB effectively. These barriers include poor knowledge and recognition of TB as a risk; high levels of stigma associated with HIV, TB, and key populations; long distances between HIV and TB facilities; poor health infrastructure; lack of trained human resources; high staff turnover; and unreliable supplies of medicines and products.^{14, 15}

Recommendations

1. Tackle stigma and other structural barriers

Programme implementers should actively tackle stigma, including stigma in health facilities, in order to increase access to TB and HIV services. Stigma can result from erroneous beliefs regarding TB, HIV, sexual orientation, and sexual practices. This in turn can lead to a lack of adequate national policy and poor overall control of TB/HIV co-infection among most-at-risk populations. In this case study, there was limited documentation of the nature of activities implemented to tackle stigma. However, tackling stigma is required for an effective response.

2. Scale up civil society involvement in delivering community-based TB activities

While the use of MoUs by RNTCP supported civil society partners to create awareness about TB and provide directly observed TB treatment and adherence support to TB patients, there is the potential for much greater civil society involvement in community-based TB activities, as the box below indicates. It is advisable for civil society and national TB programmes to continue to forge partnerships and systematically integrate TB activities into the existing grassroots activities of NGOs and community-based organizations. Civil society and the national TB programmes should also share information on their activities and outcomes. Doing so would strengthen surveillance and provide much-needed information on the nature and impact of community-level TB activities implemented by community-based organisations.

EXAMPLES OF COMMUNITY-BASED TB ACTIVITIES IN WHICH CIVIL SOCIETY CAN ENGAGE

- TB education and literacy including cough etiquette
- Verbal TB screening
- Sputum collection and transportation
- Infection control activities
- Adherence support and provision of directly observed treatment for TB
- Contact tracing in households and communities
- Seeking to re-engage treatment defaulters and other patients lost to follow-up
- Home-based care and livelihood support, including nutritional support for TB/HIV co-infected people

Appendix 1

Alliance good practice HIV programming standards for HIV and TB

The International HIV/AIDS Alliance has published *Good practice HIV programming standards for use in the design, implementation, and evaluation of Alliance programmes*. These standards define good practice in various technical areas, and are based on evidence as well as on the Alliance's experience and values. The Alliance's seven standards relating to HIV and tuberculosis are reprinted below. Descriptions of these standards and further information can be found in the *Good practice* publication, available online at www.aidsalliance.org/includes/Publication/GP-standards-English.pdf.

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|--|--|
|  STANDARD 5.1 | Our organisation has in place a local TB strategy that supports the integration of TB and HIV activities. |
|  STANDARD 5.2 | Our organisation ensures that all people living with HIV have access to TB screening, and either isoniazid preventive therapy or full TB treatment as appropriate. |
|  STANDARD 5.3 | Our organisation ensures that all people offered HIV testing are made aware of TB infection. |
|  STANDARD 5.4 | Our organisation provides information on HIV or refers TB patients for HIV counselling and testing. |
|  STANDARD 5.5 | Our organisation has in place an infection control policy to reduce the risk of TB transmission to people living with HIV. |
|  STANDARD 5.6 | Our organisation has in place strategies to address both TB- and HIV-related stigma. |
|  STANDARD 5.7 | Our organisation works with local TB organisations and our TB work is informed by the national TB programme. |

Glossary

Active TB: TB infection that has progressed to disease and causes illness, associated with symptoms and/or physical findings.

Case-finding: The search for people with TB, usually but not necessarily by microscopic examination of sputum of “suspects” with a cough of over three weeks’ duration.

Close contact: A person who has shared the same space in an enclosed environment (such as household or sleeping quarters) for a prolonged period with a person with active TB disease and who is therefore considered to be at risk of infection with *M. tuberculosis*.

Contact tracing: The search for persons infected by a patient with open or infectious tuberculosis, principally in the patient’s household.

Cough etiquette: turning head and covering mouth when coughing, using cloths or spittoons to spit into and properly disposing of these.

DALY: The summary measure used to give an indication of the burden of disease. One DALY represents the loss of the equivalent of one year of full health.

Diagnosis of TB: The clinical activity of using any available method (clinical examination, personal history, bacteriology, radiology, histology, tuberculin test, analysis of cerebrospinal fluid in meningitis) to establish the diagnosis of pulmonary or extra-pulmonary TB.

Directly observed treatment (DOT): a trained and supervised person observes the patient swallowing the tablets.

Index case: or primary case is the initial patient in among linked TB cases in an epidemiological investigation

Isoniazid: One of the first-line anti-TB drugs. It is particularly effective against actively replicating bacilli in the lung cavities. It is also used for preventive therapy in those with latent TB.

Latent infection: Infection with TB that is currently dormant, but may be reactivated. Individuals with latent TB have no symptoms and are well.

Sputum smear examination: A laboratory technique in which sputum is smeared on glass slides and stained with an acid-fast stain, normally using the Ziehl–Neelsen method, and subsequently examined by microscopy for the presence of acid-fast bacilli.

Symptoms: Symptoms are experienced and reported by a patient (as opposed to ‘signs’, which are discovered by physically examining a patient). The typical symptoms of TB are a cough, which lasts for weeks; coughing up blood; fever (high temperature); sweating (especially at night); unexplained weight loss; fatigue (lack of energy); swollen glands. Not everyone with TB will have all of the symptoms.

TB case detection: The public health activity of identifying infectious cases of pulmonary TB, namely pulmonary TB cases excreting tubercule bacilli that can be detected by microscopy. The most important group for case detection includes adults attending health facilities for any reason and presenting with cough for more than two weeks.

TB suspect: Any person who presents with symptoms (in particular a cough for more than two weeks) or signs (including radiological abnormalities) suggestive of TB. TB suspects may directly attend a health facility because of symptoms, or be identified during public health procedures such as screening of high-risk groups.

Three I’s: Isoniazid preventive treatment, intensified case-finding, and infection control.

Tuberculosis case (or person with TB): a patient in whom TB has been bacteriologically confirmed, or has been diagnosed by a clinician.

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A global partnership:
International HIV/AIDS Alliance
Supporting community action on AIDS in developing countries

International HIV/AIDS Alliance
(International Secretariat)
Preece House
91–101 Davigdor Road
Hove, BN3 1RE
UK

Tel: +44 127 371 8900
Fax: +44 127 371 8901
mail@aidsalliance.org
www.aidsalliance.org

India HIV/AIDS Alliance
(India Secretariat)
Kushal House, Third Floor
39 Nehru Place
New Delhi 110019
India

Tel: +91 11 4163 3081
Fax: +91 11 4163 3085
info@allianceindia.org
www.allianceindia.org

India HIV/AIDS Alliance
(Regional Office)
Sarovar Center
5–9–22 Secretariat Road
Hyderabad 500063
Andhra Pradesh
India

Tel: +91 40 6678 1161
Fax: +91 40 6668 6262
info@allianceindia.org
www.allianceindia.org

The International HIV/AIDS Alliance

Established in 1993, the International HIV/AIDS Alliance (the Alliance) is a global alliance of nationally-based organisations working to support community action on AIDS in developing countries. To date we have provided support to organisations from more than 40 developing countries for over 3,000 projects, reaching some of the poorest and most vulnerable communities with HIV prevention, care and support, and improved access to HIV treatment.

The Alliance's national members help local community groups and other NGOs to take action on HIV, and are supported by technical expertise, policy work, knowledge sharing and fundraising carried out across the Alliance. In addition, the Alliance has extensive regional programmes, representative offices in the USA and Brussels, and works on a range of international activities such as support for South-South cooperation, operations research, training and good practice programme development, as well as policy analysis and advocacy.