

HATiP

HIV & AIDS Treatment in Practice

Issue 142 | 06 August 2009



In this issue:

Provision of TB/HIV services in Asia-Pacific countries with a heavy burden of TB and concentrated HIV epidemics; by Theo Smart *page 2*

- Overcoming challenges in TB/HIV integration in concentrated epidemics
- The staged implementation of collaborative activities
- MARPs, concentrated HIV epidemics, and TB – a volatile mix?
- India's model
- Progress in other countries in the region
- Lessons learned about collaborative activities
- There is still work to be done to fight TB/HIV in concentrated HIV epidemics

Provision of TB/HIV services in Asia-Pacific countries with a heavy burden of TB and concentrated HIV epidemics

By Theo Smart

This edition of HATIP was kindly supported by the STOP TB department of the World Health Organization.

The publication of HATIP is also supported by the United Kingdom government's Department for International Development.

Reviewers: Dr Haileyesus Getahun, WHO Stop TB Department; Dr Puneet Dewan, WHO SEARO; Dr Soumya Swaminathan, RNTCP, India; Dr Alasdair Reid, UNAIDS; Dr Jay Varma, US CDC Mekong Region; Dr Beena Thomas, Tuberculosis Research Centre, India; Chris Green, Spiritia Foundation, Indonesia

Overcoming challenges in TB/HIV integration in concentrated epidemics

With some planning, training and supervision, tuberculosis programme staff can get most TB patients who are coinfecting with HIV diagnosed, 95% of those who are positive onto cotrimoxazole preventive therapy (CPT) and a fair number successfully referred for antiretroviral therapy (ART), according to recent study conducted in a resource-constrained setting under general field conditions and published by Raizada et al in *PLoS One* in June.¹

While none of this should come as a surprise to regular readers of HATIP, the setting of the study might. The TB programme in question was not in sub-Saharan Africa, but in India, which has the world's greatest burden of TB, and one of the largest and, some would say, most intransigent TB programmes. Getting the machinery of that old TB programme to begin to respond effectively to the needs of the minority of its clients with HIV—people who usually come from marginalised most at risk populations (MARPs) such as sex workers, men who have sex with men (MSM), prisoners, migrants and injecting drug users (IDUs)—was no small feat.

But that is just what is happening; not just in Andhra Pradesh (one of the Indian states with a higher HIV prevalence and the site for this pilot study), but throughout the sub-continent due to a carefully thought out, staged, but ultimately comprehensive TB/HIV plan, described later in this issue.

“The strides made to implement TB/HIV collaborative activities across India with a goal of nationwide expansion by 2012 have been vast and impressive and should be seen as a leader in the region,” according to Dr Haileyesus Getahun, of WHO's Stop TB Department, who was TB/HIV team lead for a Joint Monitoring Mission of India's Revised National TB Control Program (RNTCP), made up of

representatives of government of India and the World Health Organization (WHO).

That's the good news.

However, Raizada et al also reported that the people with TB and HIV in the study who did not make it onto ART while they were taking TB treatment were more than twice as likely to die.

The study reviewed the outcomes of 734 HIV-infected people with TB, 133 (18%) of whom were already on ART when diagnosed with HIV. To the TB clinics' credit, almost all of the remaining patients were referred for ART services. But fewer and fewer people successfully completed each step of the process for getting onto ART so that in the end, only 229 (38%) started ART while on TB treatment. Failure to get onto ART was strongly associated with a greater risk of death – in the multivariate analysis, ART exposure at any time during TB treatment was independently protective against death (adjusted hazard ratio [HR] 0.41, 95% confidence interval 0.28–0.60). Consequently, the authors recommended that the national TB programme “should promote high levels of ART uptake and closely monitor progress in implementation.”

Accelerating the implementation of collaborative TB/HIV activities (including finding people with HIV in TB programmes and making certain that they receive HIV services, especially ART) is clearly a matter of life or death for people with HIV and TB. There are also data suggesting that managing HIV is important for TB control even in countries with a low overall HIV prevalence, particularly wherever drug-resistant TB is a concern.

However, very few countries in Asia and other settings where HIV is mostly concentrated among MARPs are marshalling an adequate response to TB/HIV. In fact, in Asia, according to 2007 data from WHO, few countries are even testing their TB patients for HIV (1.8% in the Southeast Asia WHO region and 5.8% in the Western Pacific region).²

But while there are indeed unique challenges working in contexts where HIV is predominantly found in marginalised populations, as India and a couple of other countries are beginning to demonstrate, these challenges may not be insurmountable.

The staged implementation of collaborative activities

Back in 2004, the WHO released its [Policy on Collaborative TB/HIV Activities](#). These activities include the key HIV services (such as HIV screening) to which the TB programme should make certain its clients have access, as well as services that the HIV programme should offer to reduce the burden of TB among people with HIV; and importantly, the activities or mechanisms to get the TB and HIV programmes working together more effectively to set up, plan and monitor the delivery of TB/HIV interventions (see box). Entire issues of HATIP have been devoted to some of these activities (for a complete listing of our TB issues, see <http://www.aidsmap.com/cms1199876.asp>).

The policy also prioritised how collaborative activities should be rolled out based on the severity of the local HIV epidemic. To date, most of the emphasis on scaling up the collaborative activities has justifiably been in the sub-Saharan African countries where the HIV epidemic has not only fuelled a secondary TB epidemic that has become a regional emergency, but also changed the rules of TB control, making TB both considerably more difficult to diagnose and manage. Sub-Saharan Africa accounts for 79% of estimated HIV-positive TB cases.³

Most of the region falls under what the policy calls category 1 countries, where the national adult HIV prevalence rate is $\geq 1\%$ or in

where the national HIV prevalence among tuberculosis patients was $\geq 5\%$. These countries were urged to implement the entire package of TB/HIV activities nationwide as quickly as possible.

Likewise, because TB is a threat to people with HIV wherever they live, HIV programmes everywhere must perform the 3 I's.

But even in countries with low level HIV epidemics (category III) or an HIV epidemic that is low nationally but high in some districts (category II), the policy made it clear that TB programmes need to keep an eye on the burden of HIV among people with TB.

For category III countries, that means joint TB/HIV planning and HIV surveillance (periodic or sentinel) among TB patients (again, along with the providing the 3 Is for people with HIV).

But, at a minimum, category II countries need to adopt a two-tiered response with nationwide implementation of the 3 I's, joint planning and HIV surveillance, and the full package of TB/HIV collaborative activities targeted to the areas with a high prevalence of HIV.

Getting TB programmes in countries with a low national prevalence of HIV to follow the WHO guidance has proven quite challenging however. The cultural, structural and philosophical differences between TB and HIV programmes are only amplified when the TB programme is much larger and older than the HIV programme. It can also be very difficult to convince a TB programme that is set in its ways to broaden its focus to address the needs of what is perceived to be a relatively small minority of people, particularly when they come from highly stigmatised segments of the society.

MARPs, concentrated HIV epidemics, and TB — a volatile mix?

HIV programmes can attest to the difficulties of assessing the needs, and delivering services for MARPs. In a recent paper on combating HIV in India, Chandrasekaran wrote: "Implementing an effective response to HIV in India presents extraordinarily complex challenges, due to the country's scale; the diversity, size, and mobility of the populations at risk; and the highly stigmatised nature of HIV."⁴

Apart from India's unique scale, these challenges may ring true for most countries with concentrated HIV epidemics, which the World Bank and UNAIDS have roughly defined as having an HIV prevalence of more than 5% in one or more high-risk groups but below 5% in urban antenatal clinics.⁵

Most of the countries in Latin America, Southeast Asia, and many of the countries that were formerly part of the Soviet Union, fit this definition.⁶

In a few limited areas, concentrated epidemics have begun to bridge into the general population (including a couple of administrative areas in India such as Andhra Pradesh) — but, for the most part, countries that had concentrated epidemics ten years ago remain that way today.⁷

Of course, in countries such as India and China, with concentrated epidemics, a low overall prevalence still means huge numbers of people are HIV-infected.⁸ In India, only 0.34% of the adult population is HIV infected, but that adds up to 2.3 million people.

In most societies where MSM, sex workers and IDU face discrimination, imprisonment or worse, however it is difficult to get accurate estimates of the size of the at-risk populations; and determining their HIV prevalence can be even more daunting.⁹ Data show that HIV prevalence in key populations can vary dramatically from one region to another. For instance, according to a recent paper by Bertozzi et al, the prevalence of HIV in IDUs in Armenia is around 9%, while in Krivoi, Ukraine, it is 89%.¹⁰

Thus, in many countries with concentrated HIV epidemics, there is a hard to reach and difficult to measure population of people who are estimated to have a fivefold higher risk of developing active TB during their lifetime. This is a problem, especially in countries where many people have been latently infected with TB.

For instance, in India, it is estimated that 40% of the adult population is infected with *M. tuberculosis* and that 50-60% of the HIV-infected persons in India will develop TB disease during their life-time.¹¹ Without effective interventions, this essentially means about one million additional TB cases over several years.

How this impacts on TB control in such countries is less clear. HIV has obviously had a major impact on TB in southern and eastern Africa, where case notification increased five or more times.^{12 13 14} Were this to occur in India, which contributes 20% of the global burden of TB, "the total number of TB cases in the world would more than double," Williams et al noted in a 2005 paper that modelled whether India's TB programme could contain the TB epidemic in spite of HIV.¹⁵

In fact, it projected that India's DOTS-based programme would succeed in halving the TB prevalence by 2015 but significantly, it would be unable to achieve a similar reduction in TB-related mortality unless people with HIV-related TB were provided with ART.

Collaborative TB/HIV activities

A. Establish the mechanism for collaboration

A1. Set up a coordinating body for TB/HIV activities effective at all levels

A2. Conduct surveillance of HIV prevalence among tuberculosis patients

A3. Carry out joint TB/HIV planning; conduct monitoring and evaluation

B. Decrease the burden of tuberculosis in people living with HIV/AIDS

(since re-branded as the Three I's)

B1. Establish intensified tuberculosis case-finding (ICF)

B2. Introduce isoniazid preventive therapy (IPT)

B3. Ensure tuberculosis infection control in health care and congregate settings (IC)

C. Decrease the burden of HIV in tuberculosis patients

C1. Provide HIV testing and counselling

C2. Introduce HIV prevention methods

C3. Introduce cotrimoxazole preventive therapy (CPT)

C4. Ensure HIV/AIDS care and support

C5. Introduce antiretroviral therapy

They noted that “the main source of uncertainty in the model arises from the lack of data on the impact of HIV on TB at a population level.” To explain the minimal effect of HIV on TB prevalence in the model, the authors cited a study in the South African gold mines, which concluded that HIV had considerably less impact on the prevalence of TB disease than one might expect.¹⁶ There were a number of possible reasons for this — people with HIV (who often have smear-negative TB) are generally less infectious than HIV-negative people with TB, and because they progress and either present for treatment or die more rapidly, they may be infectious for less time.

However, what happens in a rather controlled setting of a gold mine that is monitoring the health of its workers may not be all that applicable to society at large where access to health care and health-seeking behaviour is less constant.

In concentrated epidemics, the fact that people at risk of HIV are so highly marginalised should raise an alarm for TB programmes because society’s ‘outcasts’ often have multiple risk factors for TB aside from HIV, including poor nutrition, less access to health care — many in fact, avoid it in order to escape stigma and persecution — and many live with other similarly disadvantaged people in inadequate housing or cramped conditions where TB is more likely to spread. So while HIV may not lead to the loss of TB control in all of India, there is a good chance it will cause problems in some health districts in states or cities where MARPs tend to localise.

For this reason, concentrated epidemics tend to fall into category II countries that require a more intensified package of TB/HIV services in some regions. But the scope of a country’s TB/HIV problem can only be determined by HIV screening studies among TB patients — and these are demonstrating that in some countries with concentrated epidemics HIV is at least partially driving the TB epidemic. For instance, according to the most recent Global Report, the HIV prevalence in incident TB cases is 17% in Thailand, 16% in Russia, 1.1% in Myanmar, 8.1% in Vietnam and 7.8% in Cambodia.¹⁷

Another concern raised by a number of studies is that people with HIV and TB are more likely to default on treatment, have higher rates of TB recurrence and acquire drug resistant TB. In 2000, a study from Thailand reported a 12-fold higher risk of multidrug resistant TB among people with HIV and TB.¹⁸ The paper’s authors highlighted the high rates of HIV and MDR-TB in IDUs, who are often in prison, as especially worrisome.

This risk may vary by setting and the MARP: a survey in South India between 2001 and 2003 found only marginally higher drug resistance among new TB patients who were HIV-positive, though there was a greater increase among those who were previously treated.¹⁹ But in a recent paper from the Ukraine, where there is a concentrated HIV epidemic among IDUs, HIV status was significantly associated with MDR-TB.²⁰ Out of 1496 people with TB in Donetsk Oblast, 307 people were HIV-positive, 379 had MDR-TB, and 97 had both MDR-TB and HIV co-infection (Odds Ratio 1.7, 95% Confidence Interval 1.3–2.3).

But the higher rates of MDR-TB among HIV-infected IDUs should come as no surprise given the barriers to care for drug users that are often put in place by the health system itself. In some settings, IDUs are forced to choose between HIV treatment, TB treatment or drug treatment (see [this recent news story](#))

“We routinely ask for drug users to make impossible choices regarding treatment..., you cannot get the detoxification for drug dependence if you have active tuberculosis, and you cannot receive treatment for addiction at the tuberculosis hospital,” said Daniel Wolfe, Director of the International Harm Reduction Development Program at a satellite meeting at the World AIDS Conference in

2008, where new [Guidelines for Collaborative TB and HIV Services for Injecting and Other Drug Users](#) were released.

India’s model

While some countries where concentrated HIV epidemics and TB epidemic are colliding appear to be in denial about the scale of their problem, India has chosen to develop an evidence-based approach to measure the danger and respond appropriately.

“India has made remarkable progress in TB/HIV activities over the past few years,” Dr Soumya Swaminathan, RNTCP, India told HATIP. Dr Swaminathan has been closely involved in the roll-out as well as some of the clinical and operational studies to generate the needed evidence for TB/HIV collaboration.

According to the Ministry of Health and Family Welfare’s (MOHFW) report *TB Control in India*, the “concept of joint action for a synergistic impact has been in place from 2001 onwards in India.” But, aside from joint training of health staff in TB-HIV, the first actual joint intervention was an intensified TB case-finding programme that was pilot tested in 2003 in the only HIV services available at the time, which were integrated HIV counselling and testing centres (ICTC). These were generally co-located with TB microscopy centres for ease of cross-referral. At that time, there was maybe one ICTC per district (servicing one to three million people). Similarly, TB programme staff began referring TB patients with HIV risk factors to ICTC for voluntary HIV testing.

The National AIDS Control Organization (NACO) then developed a district-based strategy for planning and implementation which prioritised districts where the antenatal HIV prevalence was more than 1% in any of the sites within the last three years or where there was a greater than 5% prevalence in one of the most at risk populations.

Services have scaled up dramatically over the past few years. Between January 2006 and January 2009, the number of ICTCs has increased from around 1800 to around 5000, and by March of this year, these had become linked to a network of 197 ART centres that are providing ART to 215,000 people. (It should be pointed out that while most of the high-priority districts have one ART centre, there are over 600 health districts in India).

The first National Framework for TB/HIV Collaborative Activities, established in November 2007, and updated in February 2008, designated the essential TB/HIV interventions that needed to be implemented nationwide, beginning with coordinating bodies and technical working groups at the national and state levels, the selection of national targets and indicators to monitor the programme’s performance, and the installation of a fulltime TB/HIV focal point at both NACO and the Central TB Division.

“Coordination really improved in 2007 with the establishment of the National Technical Working Group for TB-HIV, involving the managers and technical heads of both HIV and TB programmes,” Dr Puneet Dewan of WHO’s Southeast Asia Region told HATIP. “This framework included very specific instructions to state TB and HIV programmes and district TB programmes on how to establish coordination bodies, who is supposed to participate, how frequently they are supposed to meet, and what they are supposed to talk about. During programme review meetings at the state and national levels, the frequency of these coordination committee meetings is monitored. Minutes from state-level meetings are expected to be submitted to the national level.”

The Technical Working Group is being led by the national level programme managers: the HIV programme manager Ms Sujatha Rao and her deputy Dr D Bachani, along with the TB programme

manager Dr LS Chauhan, who should be credited for collectively exerting the leadership and enthusiasm to engage TB/HIV head-on, and move the two programmes to quickly adapt policy to emerging evidence.

Along with TB/HIV coordinating mechanisms, the first edition of the National Framework also established several other key nationwide interventions including training of programme officials and field staff on TB/HIV, intensified TB case-finding within the HIV services (including ICTC and ART centres), selective referrals of TB patients with risk factors for HIV to ICTC for HIV screening, and referrals of those who were positive to the National AIDS Control Programme (NACP) for HIV care and support including ART.

As the framework was being put in place, a number of studies were performed to generate the evidence needed for programme policy decision-making, including sentinel surveillance of HIV in TB patients conducted in 2005-6 (four districts) and 2006-7 (15 districts). There was a range of HIV seroprevalence among TB patients, from nearly zero in some districts up to 14% in others. According to the RNTCP [website](#), this surveillance was used to estimate the nationwide HIV seroprevalence among TB patients for 2007, as being around 4.85% (95% CI 4.12%–5.73%). This meant that out of the 1.29 million incident TB cases reported to the national programme in 2007, an estimated 62,849 (95% CI 53,274–74,223) TB patients were HIV-infected.

Likewise, pilot tests were conducted demonstrating the feasibility of other collaborative activities, including offering cotrimoxazole prophylaxis to people coinfecting with TB and HIV, and Provider Initiated Testing and Counselling (PITC) using routine referral either in-facility, or to ICTC, rather than selective referrals in districts with a higher prevalence of HIV.

On the basis of these findings, the National Framework was revised to promote an intensified TB/HIV package of services for those areas with higher HIV burdens, dependent upon the availability of HIV services (first in nine, now eleven states out of 35 in the country). These services included PITC, the provision of CPT to all HIV-infected TB patients, and intensified training on TB-HIV activities for medical and paramedical staff throughout the general health system. Ultimately however, TB-HIV will need to be integrated into all aspects of routine TB programme training for the general health system staffs.

In addition, as part of the intensified routine TB programme records have been altered to allow the recording of HIV status and links to care.

RTNCP case finding and treatment outcome records and reports were revised in 2007, which to a large extent were harmonised with WHO recommendations. Now states can report on the proportion of TB patients with HIV status ascertained, the proportion HIV-infected, and the proportion of HIV-infected TB patients provided with ART and CPT during TB treatment. The new system has been implemented nationwide.

During the Joint Mission, the data collection and maintenance of TB registers at district and state levels were found to be complete and accurate, and quarterly reports were timely and comprehensive. The programme also uses an electronic data system with email-based feedback and has internal systems for monitoring and supervision in all districts reviewed (although the commitment to M&E could be strengthened).

As a result of the implementation of this two-tier response in India, there has been remarkable progress on a number of indicators. For instance, between 2006 and 2008, the number of TB patients tested for HIV increased two fold and the number of people living with HIV referred for TB diagnosis increased threefold.

Now, the National Framework is again being revised to reflect the goal of scaling up the Intensified Package of TB/HIV services nationwide by 2012.

Progress in other countries in the region

But while India's recent TB/HIV accomplishments are indeed impressive, they may not represent the only model for the region.

"It's important to highlight the challenges in countries outside of India. Because India is such a huge country with such unique demographic challenges, its progress in TB/HIV is critical to global TB and HIV control, but its lessons may not always be applicable to other settings," Dr Jay Varma, of the US Centers for Disease Control (CDC) told HATIP.

For instance, according to WHO South East Asia Region, Thailand has made substantial progress in implementing TB/HIV collaborative activities throughout the country. The national TB programme provides guidance on collaborative TB/HIV activities and a national working group for TB/HIV has been established. Provider-initiated testing and counselling is now recommended nationally for all TB patients. In 2007, the rate of HIV testing among TB patients was 68%, and 20% among all those tested were found to be HIV-infected. About 67% of TB patients who are HIV-positive are receiving CPT and 32% are getting ART. While clearly there is need for improvement, this is a start. In the Western Pacific Region of WHO, Cambodia and Vietnam are also beginning to scale up collaborative TB/HIV activities.

"Getting TB programmes in these three countries to consider HIV issues, start doing PITC, and including HIV status information in log books, took a lot of work but the programmes have taken it on and these elements are now solidly in place in all three countries," Dr Varma told HATIP. "This was done by starting in high HIV-prevalence areas, demonstrating feasibility and high PITC rates, and then transitioning to national policy and practice. It does take resources, though – so putting HIV funding into badly underfunded TB programmes is a necessary but insufficient step."

He added that getting HIV programmes to adopt the 3 I's has been more challenging though (more below).

Chris Green, a treatment educator based in Jakarta, Indonesia saw a similar tendency in Indonesia, which has concentrated epidemics among high-risk population groups in most provinces, and has initiated TB-HIV collaborative activities in some of the higher HIV prevalence areas of the country. "There was a greater buy-in here by the TB programmes on HIV than the reverse," he told HATIP. However, the *Global TB Control Report 2009* noted that the HIV programme has recently reported great progress screening virtually all the people in HIV care for TB and getting 54% of them on treatment.²¹

Establishing mechanisms for TB/HIV coordination may require different approaches in different countries according to Dr Varma.

"Whether to start top-down or bottom-up depends on the country setting and which level of the system is most ready for change, and of course it is not really an either/or situation but rather a spectrum in terms of where the initial focus is. For example, in Thailand we worked initially with several provinces to develop models for collaboration, adapted registers, procedures and training for PITC. After demonstrating success in those provinces, the national programmes took up the tools and models for national implementation," he told HATIP.²²

A similar approach was used in Cambodia, with pilot provinces introducing TB/HIV activities and demonstrating success although the national TB and AIDS programmes were more closely involved

from the early stages of planning and implementing these pilots. However, a different tack was required in Vietnam because of its very centralised governance.

"It was important to work very closely with the national programme level on planning models to introduce in pilot provinces; and collaboration between the national AIDS and TB programmes has been strong," said Dr Varma. Extending that collaboration to provincial and district levels has been more challenging, and remains uneven depending on local leadership. However, even in the highly centralised system of Vietnam, what helped to move the programme forward was trying out models in pilot provinces before national policies regarding TB/HIV were fully developed and finalised. The data from these pilots demonstrated feasibility and need, and contributed to the development of the national *Collaborative Protocol for TB/HIV Diagnosis, Treatment, and Case Management*.

Lessons learned about collaborative activities

HATIP asked a panel of experts with experience in TB/HIV in concentrated epidemics about lessons learned implementing individual TB/HIV services in these settings. One repeated theme was the importance of conducting pilot studies and then using the results to leverage policy change. Another was the importance of HIV surveillance among TB patients.

The ability of the TB programme to test TB patients for HIV has been crucial to the success of TB/HIV collaborative services, according to Dr Beena Thomas of the Tuberculosis Research Centre in India who said that now that the programme had gotten past that "unnecessary apprehension about HIV testing" there has been "speedy progress to where we can talk about integration of services."

On HIV testing and counselling for TB patients as a collaborative activity

: The current policy in India is for routine referral of all TB patients for HIV testing in settings implementing the intensified package; this works well where there are almost as many HIV testing and counselling centres as microscopy centre (and they are collocated).

But in other settings not yet implementing the intensified package, 'selective referral' is recommended — as per WHO guidance, in which all TB patients should be evaluated for HIV risk factors, and referred for testing if any are present.

"In many ways, if you have HIV testing available in the same health facility or in an accessible location, routine referral for HIV testing is easier to implement than selective referral," said Dr Dewan. "One observation from India is that HIV risk assessment is very difficult to implement in typical, crowded outpatient settings; privacy is limited, risk-assessments can be time-consuming, providers are uncomfortable asking about HIV risk behaviours, females are routinely accompanied by family members, and monitoring of selective referral is not usually possible," Dr Dewan told HATIP.

One has to wonder about the accuracy of such risk assessments in this context. However in a study where selective referrals took place simultaneously with a population-based survey of HIV infection among TB patients, about 82% of the expected HIV-infected population were identified by selective referral.²³ However, this was only one sample and may not be representative of the entire country. Furthermore, risk assessments may not pick up the risk factors of wives who are unaware of their partner's risk behaviour.

Another concern is whether people with active TB who have to travel to be tested for HIV will bother to do so when they are ill.

"The whole concept of HIV testing sites is problematic and an important barrier to care that needs to be addressed even in low HIV-incidence settings," said Dr Varma. He cited a recent study that he was engaged in, in Cambodia, which found that people were half as likely to get tested when the HIV testing site was more than 15 minutes from the TB clinic as when onsite testing was available.²⁴

"Even when there are relatively few HIV-positive patients, the consequences of HIV infection among TB patients are so important, and the mortality rate so high, that universal provider-initiated HIV testing and counselling is recommended in all the countries we work with [Thailand, Cambodia, Vietnam]," Dr Varma said. "HIV testing within TB care settings is an important measure to remove the barriers of referral to special VCT centres, and normalising HIV testing in this manner needs to continue to be pushed."

Dr Thomas believes that the pre- and post-test counselling in VCT may actually be stigmatising, and is a disincentive to testing. "Why have we made HIV screening among TB patients such a big issue, with pre-test counselling, post-test counselling? But if there is still the wide consensus that counselling is required, this facility should be made available at TB clinics as well, [and not] confined only to HIV clinics. HIV and TB services need to be integrated to be patient friendly with them being accessible and available, preferably in the same premises."

On the provision of cotrimoxazole

: Although the pilot study by Raizada et al reported that in the pilot study cotrimoxazole was started in almost all the TB patients with HIV who were not already on it, the Joint Review found that cotrimoxazole was not always available at the general health facilities in many states. Adherence could have been better in the pilot study as well. Overall 351 (48%) collected more than 60% of the number of monthly cotrimoxazole pouches provided. The authors added that "anecdotally, we observed that the on-site availability of cotrimoxazole at primary health centres appeared to motivate providers to assess the HIV status of TB patients."

Dr Varma agreed that dispensing cotrimoxazole at TB clinical settings improves uptake.

On the provision of ART to people with HIV on TB treatment:

Linking of HIV-infected TB patients to ART is the greatest challenge we have in TB/HIV collaboration today," according to the RNTCP site .

"For ART, the need to refer from TB to HIV care settings results in delays and losses to follow up," said Dr Varma. "For example, in Vietnam a recent review of PITC scale-up to 14 provinces showed: 78% received cotrimoxazole preventive therapy, 59% were successfully referred to HIV care facilities, 24% had a documented CD4 cell count, and 27% received antiretroviral therapy during TB treatment."²⁵

However, losses during the referral process are only half the story. "In operational research in India conducted by TRC Chennai and NTI Bangalore, most HIV-infected TB patients actually did reach the ART centres in the study districts, but there was a gap between reaching the ART centre and initiating ART. Simply put, just reaching the ART centre is not enough... so perhaps we need to go back and understand the patient's perspective better," said Dr Dewan.

India plans to both expand the number of ART centres and decentralise many of the ART functions (such as the decentralisation of ART screening and ART refills and care to those already on ART) to "Link ART centres" at the sub-district levels where service needs are greatest. These will be situated at select

ITCs that have detected and referred more than 50 patients at any ART centre.

Linkages to HIV services in low HIV prevalence districts are especially poor – and even in high prevalence districts, the ART centres are still centralised at the district hospital level.

Dr Haileyesus Getahun of WHO's STOP TB Department told HATIP that the Joint Monitoring Mission of India's Revised National TB Control Program also found that "access of ART to HIV-infected TB patients is still limited and dismal in most instances. The ongoing efforts to decentralise ART services and functions are very encouraging and need to be aggressively pursued. But as we all know in many of these countries – including in India – there are more TB diagnosis and treatment facilities than ART facilities. Therefore, using the existing and decentralised TB services and facilities for expanding HIV prevention and treatment services including ART for the millions of patients and clients attending these services should be now explored and aggressively pursued."

Dr Swaminathan agreed. "We need to explore ways of decentralising ART in order to reduce delays and improve access for patients. However, the challenge is not just the delivering the medicines but also clinical management, staging of HIV, CD4 testing etc. India has a good primary health care service network - doctors are not always in place but nurses, lab technicians and pharmacists are. One of the strengths of the TB control programme is that it operates through the general health care services."

"It may be worth piloting an ART decentralisation exercise - as was done for cotrimoxazole and PITC in a few districts. We could even explore the possibility of having a patient-selected 'DOT provider' or an 'accompagneur' from the village being a treatment supporter. We will learn important lessons and can then go forwards," she concluded.

According to Green, in Indonesia, "a small but increasing number of community health centres offer VCT and are able to manage ART, at least following initiation at a referral hospital. This reduces waiting times. In addition, a number of old dedicated 'lung clinics' have set up HIV services, again offering VCT and ART management. Several continue to treat patients on ART after their TB treatment has finished, to ensure continuity."

He added that "an increasing number of prison clinics are able to manage both TB and HIV including ART –and some even encourage prisoners to continue treatment at the clinic after release, at least to complete TB treatment."

On HIV prevention among TB patients:

The Policy on Collaborative Activities recommends that TB programmes should develop and implement targeted comprehensive HIV prevention strategies for their patients (or link to HIV/AIDS partners or non-governmental organisations (NGOs) with prevention programmes), offer STI screening, referrals to programmes to prevent mother-to-child transmission and so on. However, effectively targeting these services may be more of a challenge in concentrated epidemics.

India's National Framework suggests that key RNTCP field staff and all general health care providers should 'generate awareness' amongst their TB patients. It leaves more specific prevention interventions to NGO partners. As Dr Getahun suggests however, the availability of so many TB service facilities affords a great opportunity for expanding HIV prevention services. The RNTCP site notes that it is developing partnerships with NGOs such as the Avahan Initiative, a large-scale HIV prevention project, primarily to deliver enhanced TB screening services for commercial sex workers, injection drug users, men who have sex with men, and other

marginalised populations who may face access barriers in the general health system. Perhaps these partnerships should be bidirectional, with Avahan and other NGOs getting the TB programme to add HIV prevention to its portfolio of services.

On the 3 I's:

HATIP has [previously reported](#) on the important work being conducted on intensified case finding in India and in a US CDC regional study in Thailand, Cambodia and Vietnam. Dr Varma told HATIP that the results of this study are now in press. Findings included that chronic cough is insufficiently sensitive as an initial screening question, but a combination of symptoms can be quite sensitive; and that sputum liquid culture will be required in the majority of symptomatic persons in order to reliably diagnose TB.²⁶ The results from this study have been incorporated into new guidelines in all three countries and the feasibility of adding significantly more liquid culture diagnosis is being assessed.²⁷

Isoniazid preventive therapy is in the pilot project stage in all 3 countries as well, according to Dr Varma. Likewise, India is also planning an operational IPT study at five ART centres, and performing a clinical research study to determine an optimum regimen (isoniazid alone versus isoniazid plus ethambutol) and duration of treatment.

"TB infection control is nascent, with some trainings held and development of revised guidelines underway," said Dr Varma.

According to RNTCP sources, TB facilities in India tend to be older, well-ventilated buildings but the same is not true for all ART centres that were installed into existing medical colleges. These centres are frequently very crowded during morning clinic hours, serving hundreds of HIV-infected persons within a few hours. Meanwhile, HIV testing and care centers often fail to perform triage that would promote infection control according to findings of the Joint Mission. As in other countries, TB transmission is almost certainly occurring in these HIV service facilities.

However, there have been some improvements. Nationally, infection control guidelines are being revised and there has been an increase in staff training in infection control. The Joint Review observed good practices of TB infection control measures in some ART centres which had open and well-ventilated environments and a system of triage of TB suspects for prompt diagnosis. However, these improvements need to be made consistently across the entire NACP.

Green told HATIP that conditions are similar in Indonesia. "Counselling rooms are often enclosed, and if ventilation is provided, it is as often likely to increase the risk for the counsellor as to decrease it. PLHIV are increasingly being used for counselling and peer education, and are thus at significant risk. As noted, waiting areas, particularly in modern facilities (including urban community health centres) are often enclosed with little ventilation, and with sick people having to wait for hours."

"Airborne infection control is tough, but national guidelines are under preparation," said Dr Dewan. "With infection control, however, policy is the easy part. Perhaps implementation success can be achieved by making airborne infection control measures part of universal precautions, by building environmental requirements into building codes and standards for health care facilities, and by synchronising efforts with infection control efforts required for pandemic influenza. There's no need to train the same health care facility staff once for pandemic influenza and again for TB infection control activities when many of the same day-to-day measures apply to both."

Green agreed: “Avian flu and flu A (H1N1) —swine flu — are adding to the list of other more urgent challenges which face countries like Indonesia with concentrated HIV epidemics. Yet the infection control measures are similar. Could we not at least try to take advantage of these epidemics to raise the level of awareness of cough etiquette and general healthy living, which could benefit TB infection control?”

Green also highlighted something everyone else neglected to mention: “HIV is mainly concentrated here among drug users, and these tend to end up in congregate settings: rehab centres and the prison system. The prisons in which they end up are usually three to four times over capacity, so the risk of a TB epidemic is high. On the plus side, many are airy and well ventilated, the prison management and staff are generally informed about HIV and TB, and the clinic staff are well aware of the risks. Again, an increasing number of prison clinics are able to manage both TB and HIV including ART - and some even encourage prisoners to continue treatment at the clinic after release, at least to complete TB treatment.”

“Rehab centres are another matter, with smaller numbers but often equally crowded. Management may not have any training or knowledge of either HIV or TB, and rarely have any medical staff. I suspect this will be the next challenge, especially following a recent Indonesian Supreme Court decision requiring first-time drug-use offenders to be offered rehab.”

There is still work to be done to fight TB/HIV in concentrated HIV epidemics

The experiences in these countries in Southeast Asia are encouraging, but they are only a first step.

More best practices are sure to come out of the meeting *From Mekong To Bali: Scaling Up TB/HIV Collaborative Activities In Asia Pacific*, to be held August 8-9, 2009, at the International Conference on AIDS in the Asia Pacific (ICAAP) in Bali, Indonesia. According to WHO “the engagement of key national stakeholders, including national TB and HIV control programmes and other partners is essential to ensure the exchange of these experiences and best practices and the inclusion of TB/HIV into National TB and HIV Strategic and other operational plans, and accelerate the implementation of collaborative TB/HIV activities.”

It is our hope that a substantial number of PLHIV and people from most-at-risk-populations participate in the meeting. In fact, the elephant in the room continues to be the marginalised status of people at risk of HIV-related TB in concentrated epidemics. How many TB patients will access HIV screening or services if they have to admit to being injecting drug users and risking imprisonment? How many people who are referred for ART will go onto treatment if it means disclosing their HIV status and risk behaviour to their wives and families?

Healthcare workers and programmes need to be more attuned to the complexities of belonging to a MARP — an understanding of why it may affect access to health services is essential. Resources need to be developed for training and sensitisation of personnel to meet the needs of female sex workers, men who have sex with men, injecting drug users, and people living with HIV/AIDS. Likewise, they need to be engaged to increase the demand and political pressure to fund TB/HIV collaborative activities. Indeed, the Joint Review in India stressed that the NACO and CTD should enhance and strengthen the involvement of PLHIV networks in RNTCP activities.

“In a context of limited, affordable antiretroviral treatment, improving access and ensuring marginalised groups are not discriminated against becomes critical,” wrote Chandrasekaran et

al. “Ensuring HIV and tuberculosis programming receives attention from broad efforts to strengthen and integrate public sector health services—eg, the National Rural Health Mission in India and the Revised National TB Programme—requires strong national leadership.”

References

- [1] Raizada N et al. Linking HIV-infected TB patients to cotrimoxazole prophylaxis and antiretroviral treatment in India. *PLoS ONE* 4(6): e5999, 2009.
- [2] WHO. Global tuberculosis control - epidemiology, strategy, financing, Geneva, 2009. See online at http://www.who.int/tb/publications/global_report/2009/en/index.html.
- [3] Ibid.
- [4] Chandrasekaran P et al. Containing HIV/AIDS in India: the unfinished agenda. *The Lancet Infectious Diseases*, Volume 6, Issue 8, Pages 508 - 521, August 2006.
- [5] World Bank. *Confronting AIDS: Public Priorities in a Global Epidemic*. New York: Oxford University Press, 1997.
- [6] UNAIDS. [Practical guidelines for intensifying HIV prevention: towards universal access](#).
- [7] Bertozzi SM et al. Making HIV prevention programmes work. *The Lancet*, Volume 372, Issue 9641, Pages 831 - 844, 6 September 2008
- [8] UNAIDS. 2007. [AIDS epidemic update: December 2007](#).
- [9] Walker N et al. The workbook approach to making estimates and projecting future scenarios of HIV/AIDS in countries with low level and concentrated epidemics. *Sex Transm Infect*;80(Suppl 1), 2004.
- [10] Bertozzi, op cit.
- [11] Agarwal SP, Roy D, Chauhan LS. TB-HIV co-infection: A lethal combination; in *TB Control in India*, Editors, Agarwal SP, Chauhan LS. Directorate General of Health Services/Ministry of Health and Family Welfare, New Dehli, 2005. Online at <http://www.tbncindia.org/pdfs/Tuberculosis%20Control%20in%20India-Final.pdf>
- [12] World Health Organization (2005) *World Health Organization Global Tuberculosis Control Surveillance, Planning, and Financing* (World Health Organization, Geneva), 2005.
- [13] Corbett, EL et al.: The growing burden of tuberculosis: global trends and interactions with HIV epidemic. *Arch Intern Med*; 163:1009-21, 2003.
- [14] Currie, C.S.M., Williams, B.G., Cheng, R.C., Dye, C.: Tuberculosis epidemic driven by HIV: is prevention better than cure? *AIDS*. (2003).
- [15] Williams BG et al. The impact of HIV/AIDS on the control of tuberculosis in India. *Proc Natl Acad Sci USA* 102: 9619-9624, 2005.
- [16] Corbett EL et al. Human immunodeficiency virus and the prevalence of undiagnosed tuberculosis in African gold miners. *Am J Respir Crit Care Med*. 170(6):673-9, 2004.
- [17] WHO. Global tuberculosis control - epidemiology, strategy, financing, Geneva, 2009
- [18] Punnotok J et al. Human immunodeficiency virus-related tuberculosis and primary drug resistance in Bangkok, Thailand. *Int J Tuberc Lung Dis* 4(6):537-543, 2000.
- [19] Swaminathan S et al. Anti-tuberculosis drug resistance in patients with HIV and tuberculosis in South India. *INT J TUBERC LUNG DIS* 9(8):896-900, 2005.
- [20] Dubrovina I et al. Drug-resistant tuberculosis and HIV in Ukraine: a threatening convergence of two epidemics? *Int J Tuberc Lung Dis* 12(7):756-762, 2008.
- [21] WHO. Global tuberculosis control - epidemiology, strategy, financing, Geneva, 2009.
- [22] Varma JK et al. Evaluating the potential impact of the new Global Plan to Stop TB: Thailand, 2004-2005. *Bull World Health Org*.;85:586-92, 2007.
- [23] Raizada N et al. HIV seroprevalence among tuberculosis patients in India, 2006-2007. *PLoS ONE* 3: e2970, 2008.
- [24] Kanara N et al. Association between distance to HIV testing site and uptake of HIV testing for tuberculosis patients in Cambodia *Int J Tuberc Lung Dis* 13(2):226-231, 2009.

[25] Thai LH et al. Expansion of provider-initiated HIV testing and counseling for TB patients to 14 provinces in Vietnam, 2007-2008. 9th International Conference on AIDS in Asia and the Pacific, Indonesia, 2009.
[26] Cain KP et al. An evidence-based approach to tuberculosis screening and diagnosis among people with HIV in resource-limited settings. In CDC

clearance and Monkongdee P et. al. Yield of acid-fast smear and mycobacterial culture for TB diagnosis in people with HIV. Am J Resp Crit Care Med. 2009; in press.

about HATiP

A regular electronic newsletter for health care workers and community-based organisations on HIV treatment in resource-limited settings.

The newsletter is edited by Theo Smart (Cape Town) and Keith Alcorn, NAM's Senior Editor (London).

For further information please visit the HATIP section of aidsmap.com