

# HIV Surveillance among Tuberculosis Patients

**Report of an Informal Consultation**

New Delhi, 17-18 November 2005

**HIV TB** 



**World Health  
Organization**

Regional Office for South-East Asia

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New Delhi, April 2006**

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## List of Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Treatment
DOTS	Internationally recommended strategy to fight tuberculosis
HIV	Human Immunodeficiency Virus
HQ	WHO Headquarters
NTP	National Tuberculosis Programme
PLWH	Person/people living with HIV
TB	Tuberculosis
SEARO	WHO Regional Office for South-East Asia
UAT	Unlinked Anonymous Testing
VCT	Voluntary Counselling and Testing
WHO	World Health Organization



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## Executive Summary

The importance of HIV surveillance among tuberculosis (TB) patients is increasingly being recognized as the HIV epidemic continues to fuel the global TB epidemic. In many countries the HIV prevalence in TB patients is a sensitive indicator of the spread of HIV into the general population. Information on HIV levels in TB patients is essential to respond to the increasing commitment to provide HIV/AIDS care and support, including antiretroviral therapy (ART), to HIV-positive TB patients.

Countries in WHO's South-East Asia Region are diverse, and culturally unique, and the magnitude of the TB and HIV epidemics vary. The dynamics include multiple modes of HIV transmission amid a very high prevalence of TB infection and disease. Nevertheless, the dynamics of the HIV and TB epidemics are sufficiently comparable across countries in the Region that a common strategy on TB/HIV surveillance can be developed complementing the WHO global guidelines.

In most countries, TB patients are increasingly being detected but the majority of HIV cases are not. The current knowledge of the interaction between the epidemics in the Region is restricted to those who access health services and are diagnosed with either disease. Experience from the Region has shown that, whenever HIV testing and counselling has been made routinely available, high levels of acceptance can be achieved. Therefore, HIV surveillance in TB patients should, whenever possible, rely on data derived from routine offering of HIV testing and counselling. Unlinked Anonymous HIV Testing (UAT) should be a second option.

The capacity of public health systems to conduct HIV-TB surveillance varies depending on the burden of the two diseases and programme performance in each country. TB programmes should take the lead in implementing HIV surveillance in TB patients, while HIV/AIDS programmes should take leadership in implementing TB surveillance in people living with HIV (PLWH). A national coordinating committee should oversee both activities.

Indicators are well described in the second edition of the Guidelines for HIV Surveillance among Tuberculosis Patients (2004). There is an incomplete agreement though about the best case definitions for TB disease among HIV-positive individuals and for HIV/AIDS case definitions for surveillance.



There are three main methods for HIV surveillance among TB patients:

- (1) Data from the routine care of TB patients, i.e. where all TB patients are offered HIV counselling and testing, on a voluntary basis;
- (2) Sentinel surveillance, in which testing is performed in a regular and consistent way on samples of all TB patients; and
- (3) Periodic (special) surveys, i.e. cross-sectional HIV sero-prevalence surveys of all newly registered TB cases to provide a rough point estimate if the prevalence is unknown; this is also useful to calibrate routine data.

Selecting the appropriate surveillance strategy depends on the existing surveillance system, the underlying HIV epidemic status, the status of ART implementation, as well as the overall TB situation. The benefits to HIV testing of TB patients include improved opportunities for treatment for HIV-positive TB patients and opportunities to prevent further HIV transmission. As care and treatment of HIV have become more widely available, debates have emerged about whether it is ethical to continue Unlinked Anonymous Testing without patient consent.

In order to address Region-specific issues in this area reflecting the current epidemiological situation and the status and capacity for delivering the necessary services in the countries, there has been a call from Member Countries in the Region to conduct a technical forum and to outline regional strategic directions for HIV surveillance among TB patients. WHO/SEARO has responded to this need by organizing an informal consultation of selected programme managers and experts, including those from countries in the Region that are facing a generalized or concentrated HIV epidemic. It was considered that this small consultation would ensure focused discussions, relevant to the regional situation. The experts have provided valuable technical advice in the regional context.

At the completion of the consultation, the following recommendations were made:

- (1) Countries should develop national policies and guidelines for enhancing collaboration between TB and HIV programmes; these should include surveillance of both diseases and HIV counselling and testing strategies;
- (2) Countries may continue to use Unlinked Anonymous Testing for HIV surveillance among TB patients in the current context of programme capacities and epidemics in the Region in order to obtain better estimates for HIV prevalence in TB patients. Informed consent should be obtained if a specimen other than what is required for the routine diagnosis and management of TB is collected;
- (3) Countries should make efforts to offer HIV counselling and testing to TB patients thought to be at higher risk of HIV for the primary purpose of enhancing access to HIV/AIDS care and treatment;

- (4) Countries should move in a phased manner towards routine, provider-initiated HIV testing and counselling for all TB patients. The transition from UAT to routine offer should develop concurrently with the increasing availability of HIV counselling, testing, care and treatment services, and in the context of the burdens of TB and HIV in countries. Data generated through HIV counselling and testing of TB patients should also be used for HIV surveillance in TB patients;
- (5) TB case finding in PLWH should be promoted, based on standardized TB diagnostic algorithms. Data generated through TB case finding should be used for TB surveillance in PLWH;
- (6) National AIDS and TB programmes should pay due attention to more effectively using and analyzing routinely collected data for surveillance purposes;
- (7) National programmes should be supported in developing the capacity to conduct TB and HIV surveillance, paying particular attention to human resources development;
- (8) National TB and AIDS programmes should establish and strengthen coordinating mechanisms to ensure that there is an efficient two-way referral system and that respective first-line responsibility for diagnosis, treatment and follow-up are clearly recognized; and
- (9) TB and HIV programmes should review and adapt their practices to ensure that all health-related data remain confidential. Surveillance systems should not include personally identifying information beyond the level at which such identifiers are needed for case management.



**T**he rapid growth of the HIV epidemic in many countries has resulted in an equally dramatic rise in the estimated number of new TB cases. HIV-related TB continues to increase even in countries with well-organized national TB control programmes (NTPs) that are successfully implementing the DOTS strategy. This suggests that, where HIV is fuelling the TB epidemic, full implementation of the DOTS strategy is insufficient to control TB and control of HIV infection must become a major concern for NTPs.

The importance of surveillance of HIV among TB patients is increasingly being recognized as the HIV epidemic continues to fuel the global TB epidemic. In many countries the HIV prevalence in TB patients is a sensitive indicator of the spread of HIV into the general population. Information on HIV levels in TB patients is essential to respond to the increasing commitment to provide comprehensive HIV/AIDS care and support, including ART, to HIV-positive TB patients.



Of the 11 Member Countries in the South-East Asia Region, five belong to the 22 TB high-burden countries<sup>1</sup> (Bangladesh, India, Indonesia, Myanmar and Thailand). Three countries namely; India (six states), Myanmar and Thailand are HIV high-burden countries. The global list of 41 countries with the highest TB/HIV burden includes India, Indonesia, Myanmar and Thailand.

The total population of the 11 countries in the South-East Asia Region is over 1.6 billion. Of the 40 million people estimated to be living with HIV in the world by end of 2004, nearly seven million were in the South-East Asia Region. Nearly half a million people are dying of AIDS every year in this part of the world. More than one in three cases of TB in the world also belongs to this Region. This represents a case load of eight million to which approximately three million new cases are added every year. In addition, it is estimated that 600 000 people die from TB each year in the Region. India alone is estimated to have 5.1 million PLWH. Every year, 1.8 million TB cases are notified and treated under DOTS in India. Between 2.5 to 3 million people in the Region are currently estimated to be infected with both HIV and TB.

HIV fuels the tuberculosis epidemic in several ways. HIV promotes progression to active TB both in people with recently acquired or with latent *Mycobacterium tuberculosis* (*M. tuberculosis*) infection. HIV is the most powerful known risk factor for reactivation of latent tuberculosis infection to active disease. HIV-infected people are also more likely to become infected when they are exposed to *M. tuberculosis*. The annual risk of developing TB in a person co-infected with *M. tuberculosis* and HIV ranges from 5% to 15%. It is significantly higher compared to the life time risk of 10% in HIV-negative individuals. HIV increases the rate of recurrent TB, which may be due to either endogenous reactivation (true relapse) or exogenous re-infection. Increasing TB cases among PLWH pose an increased risk of TB transmission to the general community.

HIV not only increases the number of TB cases, but also alters the clinical course of TB disease. As HIV-related immunosuppression increases, the clinical pattern of TB disease changes, with an increasing number of smear-negative pulmonary TB and extra-pulmonary TB cases. TB is more likely to be disseminated and more difficult to

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<sup>1</sup> 22 TB High-burden countries: contributed 80% of the global TB burden

diagnose as immunosuppression progresses. HIV-positive TB patients also suffer from an increased morbidity from other HIV-related diseases leading to an increased case fatality. Communities in high TB/HIV burden countries have also become aware of the impact of HIV on TB. National TB programmes risk losing credibility as communities notice the increasing mortality and HIV-related complications in TB patients. Dual stigma is common, with TB suspects failing to present for diagnosis for fear of being labeled with AIDS if diagnosed with TB.

There are strong epidemiological, clinical and social justifications for TB programmes and AIDS programmes to collaborate with each other. As HIV drives the tuberculosis epidemic, prevention of HIV should be a priority for the control of tuberculosis. Since about half of PLWH develop tuberculosis, and tuberculosis may have an adverse effect on HIV progression, tuberculosis care and prevention should be a priority concern of HIV/AIDS programmes.

There are three main methods for HIV surveillance among TB patients:

- (1) Data from the routine care of TB patients, i.e. where all TB patients are offered HIV counselling and testing on a voluntary basis;
- (2) Sentinel surveillance, in which testing is performed in a regular and consistent way on samples of all TB patients); and
- (3) Periodic (special) surveys, i.e. cross-sectional HIV sero-prevalence survey of all newly registered TB cases to provide a rough point estimate if prevalence is unknown; it is also useful to calibrate routine data.

Selecting the appropriate surveillance strategy depends on the existing surveillance system, the underlying HIV epidemic status in a country, the status of ART implementation, as well as the overall TB situation. As per the revised guidelines, WHO recommends the following HIV surveillance methods, which vary according to the level of the HIV epidemic:

- (1) Countries or settings with a generalized HIV epidemic :
  - HIV counselling and testing are actively promoted and offered to all TB patients. Whenever possible, this should be done in conjunction with the provision of HIV/AIDS care, support and treatment.
  - Periodic (special) surveys or sentinel surveys are also recommended, to calibrate the results of routine offer of HIV testing.
- (2) Countries with a concentrated epidemic :
  - Data from routine offer of HIV counselling and testing of all TB patients should still form the basis for the surveillance.
  - If this system is not yet in place, periodic (special) surveys or sentinel surveys are suitable alternatives.

(3) In countries with a low-level HIV epidemic :

- Where HIV testing is not routinely offered to TB patients, periodic (special) surveys (at intervals of 2–3 years) or sentinel surveys should be conducted among TB patients.

The aim of any surveillance system is to provide information which will form the basis for advocating, designing and planning the implementation of rational, cost-effective strategies and interventions where they are needed most.

As care and treatment including ART for PLWH become more available, there are new reasons to undertake HIV surveillance among TB patients. These reasons include:

- (1) To estimate the number of PLWH (particularly those co-infected with TB) in need of antiretroviral medication;
- (2) To understand the changing patterns of the TB/HIV epidemiology over time;
- (3) To facilitate planning and resource mobilization;
- (4) To evaluate the impact of interventions; and
- (5) To foster information sharing between TB, AIDS, and surveillance programmes within the Ministries of Health.

In addition, it is expected that the need for such surveillance data will expand the availability of HIV testing and counselling for TB patients. Benefits to HIV testing of TB patients include improved opportunities for treatment for HIV-infected TB patients (with co-trimoxazole and antiretroviral medication) and opportunities to prevent further HIV transmission.

As care and treatment of HIV have now become more widely available, debates have emerged about whether it is ethical to continue Unlinked Anonymous Testing (UAT) without patient consent.

When the following conditions apply, UAT is generally considered ethical:

- (1) No extra blood or other specimen is specifically drawn for the HIV test (e.g. a remnant specimen is used);
- (2) The community is aware of the survey;
- (3) There is true anonymity (identifiers irreversibly stripped)
- (4) Local access to HIV counselling and testing is available; and
- (5) Data are used to benefit the community.

If these conditions are not fulfilled, it is necessary to obtain patient consent for HIV testing, though this can still be done in an unlinked fashion.



None of the Member Countries in the Region are reporting to have a system for routine monitoring of HIV sero-prevalence among TB patients. The information available is mostly based on data from studies conducted in health care settings and mainly tertiary care centres. There are a limited number of reports from periodic (ad-hoc) surveys.

It is expected that the recommendations from this informal consultation would facilitate establishing suitable surveillance systems in Member Countries.

## 3 Objectives

The consultation was organized with four specific objectives. These were to:

- (1) Review the purpose, utility and ethical issues relating to HIV surveillance among TB patients;
- (2) Discuss the use of existing HIV sentinel surveillance and HIV testing and counselling for HIV surveillance among TB patients in priority countries;
- (3) Outline the regional recommendations for HIV surveillance among TB patients and discuss the roles and responsibilities of national HIV/AIDS and TB programmes; and
- (4) Identify the steps required to operationalize routine offering of HIV counselling and testing to all TB patients in the high HIV prevalence settings.



The consultation was inaugurated by the Acting Director of the Department of Communicable Diseases, Dr A.S. Abdullah, who delivered the opening remarks on behalf of Dr Jai P. Narain, Director of the Department of Communicable Diseases.

In his address, the Director noted that HIV and TB were two epidemics that were fuelling each other in this Region as in other parts of the world and that the HIV epidemic was threatening to reverse the hard-won gains in TB control globally as well as in the Region. At the same time, TB was the most common opportunistic infection in people infected with HIV and the leading cause of death among people with HIV/AIDS. He also indicated that, together, the two diseases posed a heavy, additional burden on national health systems. Therefore, the TB/HIV co-epidemic in the Region demanded an urgent and effective response.

Highlighting the global picture, he said that, at the Millennium Summit in 2000, world leaders had committed themselves to achieve the Millennium Development Goals by 2015. Combating HIV/AIDS and tuberculosis were among the identified goals. Three of these Millennium Development Goals were related to HIV/AIDS. Goal 6 called for halting and reversing of the incidence of HIV/AIDS. This, in turn, linked to Goals 4 and 5, related to improving maternal health, and reducing child mortality. The halving of the tuberculosis prevalence and mortality had been identified as a crucial milestone to reach the MDG 6. Reaching this would also contribute to the first goal among the MDGs—halving extreme poverty. National TB control programmes were doing well with respect to the World Health Assembly targets of achieving 70% case detection and 85% treatment success rates under DOTS. The Region, as a whole, was set to achieve these by early next year.

The Director also said that, with nearly half a million people dying of AIDS every year in this part of the world, there was need to increase efforts to expand access to HIV/AIDS care and antiretroviral treatment. In this Region, Thailand was providing universal access to HIV testing and counselling and anti-retroviral therapy to all eligible people. Other countries, such as India, Indonesia and Myanmar, had taken major steps towards addressing this issue. He reminded that addressing these two diseases in parallel would not lead to achieving the Millennium Development Goals but that an

effective collaboration between the TB and HIV programmes was key to its achievement.

It was further explained that close collaboration between national HIV and TB programmes was the basis to fight the dual epidemic. The South-East Asia Regional Strategic Plan on HIV/TB was developed in close collaboration with the Member Countries in 2002. The plan outlined the key approaches for joint TB/HIV interventions in the Region: preventing HIV; preventing progression of latent TB infection to active TB; reducing morbidity and mortality of HIV-associated TB; and strengthening health systems response to HIV/TB.

In conclusion, he said that this consultation would address issues relating to intensifying and expanding surveillance for TB/HIV in the Region in the context of the national TB and HIV/AIDS programmes in the Member Countries. A comprehensive understanding of issues around HIV surveillance among TB patients in different settings would help both programmes in Member Countries in the planning, implementation, monitoring and evaluation of coordinated TB-HIV interventions. Other countries in the Region with lower prevalence of HIV would also benefit from the outcomes of this consultation.

The two-day consultation began with presentations on various issues including: TB/HIV collaboration in the Region with a specific focus on strategic directions and major activities; the UNAIDS/WHO policy statement on HIV testing; strategies for HIV surveillance among TB patients; developing joint TB and HIV/AIDS care surveillance; HIV surveillance in TB patients in India; routine offering of HIV counselling and testing to TB patients in Thailand; and sentinel surveillance for HIV prevalence among new TB patients in Myanmar.

The presentations were followed by discussions.

Two groups reviewed and discussed the purpose, use and ethical issues relating to HIV surveillance among TB patients, the use of existing HIV sentinel surveillance for HIV surveillance among TB patients and issues regarding offering HIV testing and counselling for TB patients in settings with a generalized HIV epidemic. The purpose, approaches, operational aspects and issues around TB surveillance in people with HIV were also discussed. A set of recommendations for the steps required to operationalize offering HIV testing and counselling for TB patients in settings with a generalized HIV epidemic was drafted.

The detailed programme is attached at annex 1.

### 5.1 Presentations

The presentation on HIV/TB collaboration in the South-East Asia Region highlighted the burden of TB, HIV and dual infection in the Region. Key issues such as stigma, high-risk behaviour, poverty, health care provision by the private sector, overstretched public health systems and limited resources were also addressed. The reason why collaboration between the two programmes is urgently required was also highlighted. The global and regional strategic vision and strategic outlines in the context of broader determinants of health were presented. Participants were also informed of the activities planned for the immediate future.

The UNAIDS/WHO Policy Statement on HIV testing (June 2004) was presented. In order to explain more on the linkages between the two diseases, the presenter also highlighted a few points on the proposed revision of the WHO clinical staging system

of HIV/AIDS (2005) and the rationale for that, such as relationship between mortality and HIV staging, immunological status and prognosis of HIV-infected patients with active TB. The four strategies were explained: (i) client-initiated voluntary counselling and testing; (ii) provider-initiated diagnostic HIV testing; (iii) routine offer of HIV testing; and (iv) mandatory screening of blood products. The key steps in strengthening regional and country capacity for HIV testing and counselling and issues and challenges being faced in the Region were also presented.

The third presentation dealt with the various strategies for HIV surveillance among TB patients. The rationale behind this activity was explained and guidelines for various methods of HIV surveillance in TB patients were presented. Examples of surveillance in Asian settings were given. The presenter further explained issues related to different HIV sero-survey strategies, including Unlinked Anonymous Testing with and without informed consent, Linked Anonymous Testing with informed consent and Linked Confidential Testing with informed consent. Ethical considerations for various methods of HIV surveillance in TB patients in the changing context were also highlighted.

A presentation on surveillance for HIV and TB care indicated the role of surveillance in the overall programme monitoring and evaluation of HIV and HIV/TB interventions. The presenter highlighted aspects of HIV/AIDS and ART surveillance, monitoring and evaluation, latest developments in TB monitoring, status of TB/HIV monitoring and proposed collaborative work on surveillance for monitoring TB and HIV care. The various systems to collect strategic information on ART as well as the work conducted by WHO's Stop TB Department in modifying TB patient cards, registers and reporting forms in order to capture information necessary for collaborative TB/HIV activities was also explained.

Dr L.S. Chauhan, National Tuberculosis Programme Manager, India, gave an overview of HIV surveillance among TB patients. He described the TB and HIV burden in India, the challenges in providing access to PLWH, relevance of HIV surveillance in TB for TB/HIV collaboration in India and current efforts and experiences. He put special emphasis on the need for TB surveillance in HIV in order to reduce the burden of TB in PLWH. He concluded that in the current context, there was no need for routine offer of HIV testing to all TB patients but, being a high TB burden country, TB surveillance in clients attending voluntary counselling and testing (VCT) centres would be more useful.

Thailand is a country where TB and HIV services are provided through integrated health units. Dr Somsak Akksilp, Director, Office of Disease Prevention and Control Region 7, Thailand, presented the experiences in routine offering of HIV testing and counselling to all TB patients in Ubon Ratchatani Province. He also presented the increasing trend over the last two years for accepting HIV testing after counselling while the HIV infection rate among all TB patients remained stable. He highlighted that provision of ART during TB treatment with close monitoring, supervision and care, saved lives. However, there were still challenges such as resource constraints,

high workload and unclear technical questions including those related to counselling and testing strategies as well as treatment options.

In Myanmar, HIV surveillance among TB patients was planned to be part of routine HIV sentinel surveillance starting from March 2006. A pilot phase had been initiated in five selected sites. Dr Win Maung, NTP Manager of Myanmar, presented the background of the TB/HIV situation and the objectives and process of incorporating TB patients as one of the sub-population in routine HIV surveillance under the National AIDS Programme. He explained the methods in detail, including site selection, sample size determination, laboratory aspects, training and data management.

A brief session for questions and clarifications followed each presentation. After the presentations, the participants formed two groups for detailed and extensive discussions.

## 5.2 Group work and panel discussions

There were two group work sessions, one each on the first and second days. Two equal groups were formed with a mix of expertise in each group. The group work was structured in such a way that the output of the first session would provide additional input for the second session of the particular group.

The purpose of the discussions for the first session of Group A was to review the purpose, use and ethical issues related to HIV surveillance among TB patients.

The group believed that, although countries in the South-East Asia Region are diverse and culturally unique and the magnitude of the TB and HIV epidemics varies, the dynamics of the epidemics are sufficiently comparable across the countries of the Region to enable a common strategy on TB/HIV surveillance to be developed.

The dynamics included multiple modes of HIV transmission, occurring amid a very high prevalence of TB infection and disease. In most countries, the majority of TB cases are detected but the majority of HIV cases are still unknown. The current knowledge of the interaction between the epidemics is restricted to those who access health services and receive a diagnosis of either disease. Whenever HIV counselling and testing is routinely made available to HIV patients, high levels of acceptance can be achieved. Therefore, HIV surveillance in TB patients should, whenever possible, rely on routine offer of HIV counselling and testing.

The group also discussed that the capacity of health systems to include surveillance varies depending on the burden of the disease and the programme performance. TB programmes should take the lead in implementing HIV surveillance in TB patients, while HIV programmes should take leadership in implementing TB surveillance in HIV patients. A national coordinating committee should oversee both activities. Indicators are well described in the WHO TB/HIV monitoring and evaluation guide. Case definitions for TB and HIV diagnosis are well established, but there is incomplete



agreement about the best case definition for HIV surveillance (number and types of tests) and how this definition might change, depending on risk behavior.

The group noted that the primary goals of surveillance are:

- (1) developing an evidence-based policy;
- (2) setting priorities and allocating resources
  - a. within programmes;
  - b. across geographic areas;
  - c. across health systems;
  - d. across vulnerable populations;
- (3) advocating and mobilizing resources to address the TB/HIV co-epidemic;
- (4) assessing the impact of interventions; and
- (5) comparing data at sub-national, national and international levels.

The group noted also that the purpose of HIV surveillance in TB patients and TB surveillance in HIV patients is as follows:

- (1) HIV surveillance in TB patients: to assess the magnitude of the problem, including trends, and define the epidemiology, in order to:
  - a. plan and provide for HIV-related services in TB patients, including prevention, case finding, counselling, treatment for TB patients found to have HIV;
  - b. assist in identifying important operational research questions such as how HIV and TB drug resistance vary in different populations; and
  - c. strengthen collaboration between vertical programmes.
- (2) TB surveillance in HIV patients: to assess the magnitude of the problem, including trends, and define the epidemiology, in order to:
  - a. plan and provide for TB-related services in HIV patients, including prevention, case finding, counselling, and treatment for TB in HIV patients;
  - b. assist in identifying important operational research questions, such as how HIV and TB drug resistance varies in different populations; and
  - c. strengthen collaboration between vertical programmes.

Methodological issues were also discussed as below:

- How much do we know about the proportion of TB cases with HIV compared with proportion of HIV cases with TB? How much do we know about the prevalence and incidence of TB compared with HIV?

- TB programme has cohorts that are 'cleaned' after 6/8 months of treatment. The AIDS programme has ongoing registration that accumulates over time.
- For example, if a district has a high burden of TB and a poorly performing DOTS programme, it will be less willing or able to collect HIV data.
- The role of the private sector needs to be addressed, because the majority of TB suspects first access the private sector. Is this regardless of HIV status?

With regard to HIV surveillance in TB patients, annual surveys of HIV prevalence in TB patients are recommended. The Cambodian model was illustrated as an example and discussed. In Cambodia, annual surveys of HIV in all TB patients after obtaining verbal consent, using UAT, are conducted for surveillance purposes. In these sites, VCT services were not routinely available as the surveys primarily centered on main district centres, not outlying rural areas. A few questions remained to be answered such as: what is the impact of the HIV stigma on accessing TB services that conduct HIV testing? Should variables such as age and sex be included?

Questions and issues around TB surveillance in HIV patients included: what is the denominator? The baseline population of HIV patients is not known as most PLWHs do not know their HIV status. Data could be derived from HIV treatment programmes, because it is already recommended that HIV treatment programmes screen PLWHs for TB. Recording and reporting needs to be strengthened as the completeness and yield of this process is not sufficient. The quality and standards of TB screening in HIV patients need to be addressed since there are no widely-accepted, evidence-based clinical algorithms to screen for and diagnose pulmonary and extra-pulmonary TB in HIV-infected patients.

The following ethical issues were addressed during the group discussions:

- (1) HIV care, treatment and prevention services should be available at least at the surveillance sites. Treatment does not necessarily need to include ART, if such services are not routinely available across the country;
- (2) The healthcare system should have clear policies and practices protecting the rights of HIV patients to receive equitable services;
- (3) Whenever HIV counselling and testing is routinely made available to HIV patients, high levels of acceptance can be achieved. Therefore, HIV surveillance in TB patients should, whenever possible, rely on routine HIV counselling and testing;
- (4) Unlinked Anonymous Testing is acceptable if patients cannot be provided with their HIV test results within the internationally-accepted standard of care (e.g. insufficient, trained counselors to perform post-test counselling) or a large proportion of patients have a substantial fear of receiving an HIV diagnosis and this cannot be easily overcome;

- (5) Remnant specimens, such as blood taken for other purpose, can be used for Unlinked Anonymous Testing. Informed consent should be obtained if a specimen other than what is required for the routine diagnosis and management of TB is collected.

The purpose of the discussion for the first session of Group B was: to discuss the use of existing HIV sentinel surveillance for HIV surveillance among TB patients and to discuss the issues regarding offering HIV testing and counselling for TB patients in settings with generalized HIV epidemic.

The current modalities of HIV/TB surveillance in the Region were reviewed. They can be summarized as follows:

- India: HIV sentinel surveillance including all new adult TB patients at 113 sites in six high-prevalence states;
- Myanmar: special surveys at five sites; followed by inclusion of TB patients at 30 sentinel sites; (in 2006) including all new TB patients over 8-12 weeks;
- Indonesia: HIV sentinel surveillance in 10 provinces; only one pilot site in Jakarta; all new TB patients;
- Nepal: one-time special survey; five sites; all new smear positive TB patients;
- Thailand: nationwide routine offering of HIV testing to all TB patients; special survey to corroborate trends (after a gap of 3-5 years of continued sentinel surveys over 10 years).

The issue of TB case finding among HIV positives was also discussed using the example of India and certain pros and cons were outlined.

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- (1) The following are identified as pros:
- a. patient benefits;
  - b. opportunity to increase TB case detection;
  - c. ability of the TB programme to determine trends and treatment outcomes among HIV-positive TB patients;
  - d. possibility to monitor trends in uptake of services and in HIV;
  - e. helps in evaluating the efficiency of cross-referrals; and
  - f. special surveys give only limited data.
- (2) The cons include:
- a. bias: suspect identification; how often to screen? How good are the diagnostic algorithms?
  - b. what about HIV cases not presenting in health services?

The group discussed and agreed that countries should move from UAT to routine offer in a phased manner. The strategy for surveillance will depend on the rate of expansion of HIV counselling, care and treatment services and the burden of HIV and TB. There is a need for using consistent methodologies. While it was recommended that UAT should continue to be used, it needs to be supported by other approaches such as:

- programme data from cross-referrals of TB patients most at risk (injecting drug users, men who have sex with men, commercial sex workers, patients with clinical signs and symptoms or other risk factors);
- ensuring VCT at sentinel sites (or access to VCT);
- phased implementation from high-prevalence to moderate and then low-prevalence areas;
- offering HIV counselling and testing to TB patients in special settings such as hospitals;
- ensuring that data on TB patients from centres where VCT and ART is being offered is included (even if these are not sentinel sites);
- conducting operational research: Compare data from programme activities such as cross-referral with sentinel surveillance and data from sites where routine offering of VCT is practiced (including where stratified referral is done);
- mathematical modeling to extrapolate data from all sites/methods to obtain trends and point estimates at national and sub-national levels.

The group also discussed issues around routine offering of HIV testing and counselling to all TB patients in a setting with a generalized epidemic. The group noted the danger of HIV stigmatization affecting the uptake of TB services. In view of the present situation, it was considered that the physical infrastructure at sub-district level is not conducive in most settings and VCT services and ART facilities are not yet widely available, except in Thailand.

The group focused their discussion on the purpose, approaches, operational aspects and issues around TB surveillance in HIV patients.

The following questions and points concerning TB surveillance in HIV patients were raised and discussed in detail:

- (1) what is the denominator? The base population of HIV patients is not known. Most PHAs do not know their HIV status;
- (2) what is the appropriate sampling frame?
- (3) VCT settings may not be useful because only a small percentage of HIV patients receive their diagnosis through VCT;

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- (4) ART settings may be useful, but the proportion of HIV patients receiving ART is still quite small;
  - (5) is the denominator important? Simply knowing the numerator of HIV patients who develop TB is useful, e.g. for developing an ART drug-management plan;
  - (6) the primary purpose of data collection may not be surveillance. It is monitoring and evaluation of services (and delivery of clinical services to patients), with surveillance data, however imperfect, as an added benefit. A major debate is whether the data are sufficient to make it meaningful for surveillance;
  - (7) what is the benefit of these data? One benefit is to raise awareness in the health sector about the importance of TB disease in HIV patients;
  - (8) the TB programme recording and reporting forms could be modified to document where HIV-infected patients were referred from. These data could be used in combination with ART or VCT registers to obtain a proportion (persons referred from VCT or ART diagnosed with TB divided by (a) persons diagnosed with HIV in VCT clinics or (b) persons receiving care);
  - (9) TB surveillance in HIV patients can be performed with existing staff and within the existing programme settings, as long as referral systems are developed and strengthened. Data could be derived from HIV treatment programmes because it is already recommended that HIV treatment programmes screen PLWHs for active TB. Recording and reporting needs to be strengthened, because the completeness and yield of this process is not known;
  - (10) the quality and standards of TB screening in HIV patients needs to be addressed because there are no widely-accepted, evidence-based clinical algorithms to screen for and diagnose pulmonary and extra-pulmonary TB in HIV-infected patients. The definitions for TB surveillance in HIV patients should be the same as those used for TB diagnosis;
  - (11) measuring the prevalence of TB disease and infection in HIV patients is a high priority, but should be done in a research context; and
  - (12) can these data be used to improve the understanding of nosocomial TB transmission in HIV clinical facilities (e.g. VCT, ART clinics)?

The group concluded that the specific purpose of TB surveillance in people living with HIV would determine whether and how surveillance should be conducted. Table 1 below summarizes different purposes of TB surveillance in people living with HIV and the general approaches, data sources, sites, and issues related to this.

The purpose of the discussion for the second session of Group B was: to draft recommendations for steps required to operationalize offering HIV testing and counselling for TB patients in settings with generalized HIV epidemic and to identify roles and responsibilities of the two programmes in this regard.

**Table 1: Various purposes of TB surveillance in HIV patients, general approaches and issues**

Primary purpose of TB surveillance in HIV patients	General approach	Sites, data sources	Issues
Strengthen joint planning between TB and HIV services	Using programme data (e.g. intensified case finding) to determine the efficacy of collaboration and referral between services	Laboratory and clinical facilities of TB and HIV diagnosis and care, e.g. VCT, microscopy centres, TB clinics, ART clinics, hospitals	<p>May not require collection of detailed data. To achieve this purpose, other strategies may be employed, as outlined in the SEARO regional TB/HIV strategy, e.g. team-building, human resources development</p> <p>When using VCT services, need to ensure that loss of anonymity associated with TB programme services does not jeopardize VCT demand</p>
Strengthen and plan for clinical services	Systematic collection of standardized TB/HIV indicators, complemented by additional data collection	<p>Laboratory and clinical facilities of TB and HIV diagnosis and care, e.g. VCT, microscopy centres, ART clinics, hospitals</p> <p>Estimated denominators</p> <p>Sentinel sites</p>	<p>Requires data collection from both HIV and TB programmes as part of patient evaluation, including potential modification of existing data collection instruments</p> <p>Sentinel sites should be chosen to account for unique needs of specific sub-groups, e.g., as defined by age, gender, HIV risk factor, geographic location</p>
Estimate TB disease burden in people living with HIV	<p>Population-based TB prevalence survey, stratified by HIV status</p> <p>Notifiable disease reporting</p>	<p>Sites to be selected should be well-defined and have reliable data about demographic, health, and other features</p> <p>Prospective, standardized data collection applied to representative sample of baseline population</p> <p>HIV-related public health surveillance, e.g. AIDS case surveillance, TB reporting systems that incorporate HIV information</p>	<p>For technical, ethical, and financial reasons may be difficult to perform in a general population, but may be more feasible in special populations, e.g. IDUs, institutionalized populations</p> <p>Stratification to account for HIV status may be done at the community-level or within specific population groups</p> <p>Often incomplete</p> <p>Most often involves reporting of first opportunistic infection, but not subsequent opportunistic infections</p> <p>May require modification of TB recording and reporting forms to record HIV information, including source of referral. Needs to account for potential loss of anonymity associated with linking of VCT records to TB clinics.</p>



Primary purpose of TB surveillance in HIV patients	General approach	Sites, data sources	Issues
	Systematic collection of programme data	HIV testing centres, e.g. VCT	May be generalizable if most persons living with HIV know their status and the primary source of HIV diagnoses is VCT  If HIV case detection is low, then this method of TB surveillance will not be generalizable
Programme monitoring and evaluation	Systematic collection of standardized TB/HIV programme management indicators	Periodic review of records from laboratory and clinical facilities involved in TB and HIV diagnosis and care, e.g. VCT, microscopy centres, ART clinics, hospitals	Can be performed on sample of records, but requires pre-existing or ability to link records across services  Can involve review of data quality
Advocacy	Convenience samples, crude estimates derived from modeling	Any existing data most reflective of burden and/or trends	Data sources may vary depending on target audience of advocacy measures, e.g., policy makers, PHA groups.  Ethical obligation to consider effect on stigma of associating HIV and TB
Understanding and monitoring the epidemiology of TB in HIV-infected persons	Operational research, special surveys or studies	Laboratory and clinical facilities of TB and HIV diagnosis and care (e.g. VCT, microscopy centres, ART clinics, hospitals)  Community facilities, e.g. day care centres	May assist with answering or prompting specific questions related to clinical patterns of TB, healthcare-associated TB, TB and HIV drug resistance, molecular epidemiology, vulnerable populations, etc.  Data should be collected to permit comparability across countries and regions

The group discussed and considered that routine offer of HIV testing and counselling should be operationalized both in situations of generalized and concentrated epidemics. Intervention for HIV testing and counselling could be at the time of diagnosis, or at a follow-up point. It needs to be done in a phased manner. Pre-requisites for operationalization include addressing issues such as human resources (numbers, skills, motivation) and technical advice. The group emphasized that confidentiality must be ensured in all settings. It was also highlighted that routine offer of HIV testing and counselling could not be in isolation but should be developed concurrently with the availability of HIV care and treatment services.

The roles and responsibilities of National TB Programmes and National AIDS Programmes were also discussed. It was noted that most of the areas should be taken up jointly. The following key areas were identified for joint responsibilities:

- (1) Policy development and planning (through national/regional advisory bodies meeting regularly, e.g. quarterly at the initial phase);
- (2) Good coordination at all levels;
- (3) Staff development (numbers and distribution, skills development, motivation, retention);
- (4) Infrastructure (more a general health service issue): buildings, allocated space, equipment, transport;
- (5) Supplies and logistics (adapt from DOTS programmes);
- (6) Resource mobilization for additional specific interventions such as additional training needs and enhanced supervision of health staff, joint advocacy and communication, joint proposal development. The need for donor coordination and agreement on resource allocations were also discussed. National AIDS programmes would also need to address additional resources for expansion of counselling and testing services;
- (7) Referral mechanisms: standardized referral forms should be developed jointly and expanded in a phased manner. A stratified approach may need to be considered where numbers are large: high prevalence areas first followed by other areas;
- (8) Data management: Adaptation of existing recording reporting formats and cohort analysis. Mechanism for exchange of information between two programmes (frequency, monthly, quarterly); avoid double reporting. Coded data for NGOs and private providers would be required. Electronic data monitoring system would need to be promoted and strengthened.

The following support mechanisms to increase the uptake of HIV testing among TB patients were also discussed: attention for confidentiality; community involvement; and effective joint delivery care and treatment services. In addition, the pros and cons for introducing patient incentives were also discussed.

The group agreed that the ultimate goal should be to integrate both TB and HIV services under general health services. The group suggested that some operational issues should be considered at the implementation level for offering HIV testing and counselling to TB patients. A few examples are:

- both national TB and AIDS programmes should review the existing IEC materials and develop specific TB/HIV material, as required;
- initiation of counselling at TB or general health services followed by referral for “specialized” VCT at HIV counselling, care and treatment services, for those who give informed consent;



- during the TB treatment, NTP is responsible for recording and reporting, protection of the data such as HIV status and initiation of co-trimoxazole preventive therapy and ART; and
- both programmes should be ready to provide technical advice and to ensure monitoring and evaluation of activities at all levels and to build community support.

At the completion of the two-day consultation, the following conclusions were arrived at and some recommendations were also outlined.

### 6.1 Conclusions

The consultation concluded that a common strategy on TB/HIV surveillance can be developed in the Region, using the WHO global guidelines.

Presently, although TB cases are increasingly being detected in most countries, the majority of HIV cases are not. Current knowledge of the interaction between the epidemics in the Region is restricted to those who access health services and receive a diagnosis of either disease. Experience from the Region has shown that whenever HIV counselling and testing has routinely been made available to people with HIV, high levels of acceptance can be achieved. Therefore, HIV surveillance in TB patients should, whenever possible, rely on routine offer of HIV counselling and testing, using UAT as a second option.

The capacity of public health systems to conduct HIV surveillance among TB patients or TB surveillance among people with HIV varies depending on the burden of the two diseases and programme performance in each country. TB programmes should take the lead in implementing HIV surveillance in TB patients while HIV programmes should take leadership in implementing TB surveillance in PLWH. A national coordinating committee should oversee both activities.

### 6.2 Recommendations

- (1) Countries should develop national policies and guidelines with regard to collaboration between TB and AIDS programmes. These should include surveillance of both diseases and HIV counselling and testing strategies.
- (2) Countries may continue to use Unlinked Anonymous Testing (UAT) for HIV surveillance among TB patients in the current context of limited programme capacity and considering the size of the epidemics in the Region in order to estimate HIV prevalence in TB patients. Informed consent should be obtained

if a specimen other than what is required for the routine diagnosis and management of TB is collected.

- (3) Countries should make efforts to offer HIV counselling and testing to TB patients thought to be at higher risk of HIV for the primary purpose of enhancing access to HIV/AIDS care and treatment.
- (4) Countries should move towards routine, provider-initiated HIV testing and counselling of all TB patients in a phased manner. The transition from UAT to routine offer should develop concurrently with increasing availability of HIV counselling, testing, care and treatment services, and in the context of the burden of TB and HIV in countries. Data generated through HIV counselling and testing of TB patients should also be used for HIV surveillance in TB patients.
- (5) TB case finding in PLWH should be promoted and should use standardized TB diagnostic algorithms. Data generated through TB case finding should be used for TB surveillance in PLWH.
- (6) National AIDS and TB programmes should pay due attention to more effectively using and analyzing routinely collected data for surveillance purposes.
- (7) National programmes should be supported in developing the capacity to conduct TB and HIV surveillance, paying particular attention to human resource development.
- (8) National TB and AIDS programmes should establish and strengthen coordinating mechanisms to ensure that there is an efficient two-way referral system and that respective first-line responsibility for diagnosis, treatment when necessary and follow-up are clearly recognized.
- (9) TB and AIDS programmes should review and adapt their practices to ensure that all health-related data remains confidential. Surveillance systems should not include personally identifying information beyond the level at which such identifiers are needed for case management.

# Annex 1

## Programme

Thursday 17 November 2005

Inaugural session	
0900-0930	Opening remarks <i>Dr A.S. Abdullah, Ag. Director CDS, WHO/SEARO</i>
	Objectives of the Consultation <i>Dr A.S. Abdullah</i>
	Self-introduction of participants
	Announcements, group photograph
Business session – presentations	
0930-0945	TB/HIV: strategic directions and major activities <i>Dr Nani Nair, Regional Adviser (TB), WHO/SEARO</i>
0945-1000	UNAIDS/WHO statement on HIV testing <i>Dr Ying-Ru Lo, Regional Adviser (AIDS), WHO/SEARO</i>
1010-1030	Strategies for HIV surveillance among TB patients <i>Dr Lisa Nelson, TB/HIV activities team leader, CDC</i>
1030-1050	Developing joint TB and HIV/AIDS care surveillance <i>Dr Gilles Pומרol, Medical Officer (AIDS), WHO/HQ</i>
1050-1110	Discussion
1110-1130	Practical experience of India in setting up HIV surveillance for TB patients <i>Dr L.S. Chauhan, Deputy Director-General (TB), India</i>
1130-1150	Routine offering of HIV testing and counselling to TB patients <i>Dr Sonmsak Akksilp, Director, Office of Disease Prevention and Control Region 7, Thailand</i>
1150-1210	Protocol for HIV sentinel surveillance among TB patients in Myanmar <i>Dr Win Maung, National Tuberculosis Programme Manager, Myanmar</i>
1210-1230	Discussion

### Business session – group work part 1

1400-1600	<p>Group A: to review the purpose, utility and ethical issues related to HIV surveillance among TB patients in the Region</p> <p>Group B: to discuss the use of existing HIV sentinel surveillance for HIV surveillance among TB patients and issues regarding offering HIV testing and counselling for TB patients in settings with generalized HIV epidemics</p>
1600-1700	Presentation of group work, followed by plenary discussion

## Friday 18 November 2005

### Business session – group work part 2

0900-1200	<p>Group A: to outline a statement on purpose, utility and ethical issues around HIV surveillance among TB patients in the South-East Asia Region and to outline strategic approaches for HIV surveillance among TB patients</p> <p>Group B: to draft recommendations for steps required to operationalize offering HIV testing and counselling for TB patients in the settings with a generalized HIV epidemic and suggested roles and responsibilities of the two programmes in this regard</p>
1200-1230	Presentation of group work
1400-1500	Plenary discussion

### Closing session

1515-1630	Conclusions and recommendations
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## Annex 2

### List of Participants

#### Temporary Advisers

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## Annex 3

### Guidelines for Group Work Sessions

#### Session 1

##### *Group A*

Purpose: to review the purpose, use and ethical issues relating to HIV surveillance among TB patients

##### *Discussion points:*

- *What is the purpose of HIV surveillance among TB patients in the context of the South-East Asia Region?*
- *What are the methodological issues?*  
*Indicators to be used, Case definitions, Criteria for selecting population for surveillance, HIV testing approaches, Data management.*
- *What are the ethical issues?*
- *How can the information that is obtained be utilized?*

##### *Group B*

Purpose: (i) to discuss the use of existing HIV sentinel surveillance for HIV surveillance among TB patients and (ii) to discuss the issues regarding offering HIV testing and counselling for TB patients in settings with a generalized HIV epidemic.

##### *Discussion points:*

- *What are the current mechanisms for monitoring prevalence of HIV among TB patients in the countries of the Region?*
- *What are the issues for using the ongoing HIV sentinel surveillance system vs. offering HIV testing and counselling at TB services?*
- *What are the concerns and opportunities for HIV testing and counselling among TB patients in these settings?*



## Session 2

### *Group A*

Purpose: (i) to outline a statement on the purpose, use and ethical issues around HIV surveillance among TB patients and (ii) to suggest key approaches for HIV surveillance among TB patients in the South-East Asia Region

The above was changed: to discuss the purpose, approaches, operational aspects and issues around TB surveillance in people with HIV

### *Group B*

Purpose: (i) to draft recommendations for steps required to operationalize offering HIV testing and counselling for TB patients in settings with a generalized HIV epidemic and (ii) to identify roles and responsibilities of the two programmes in this regard.



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