A guide to monitoring and evaluation for collaborative TB/HIV activities

World Health Organization

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A guide to monitoring and evaluation for collaborative TB/HIV activities

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Contents

Acronyms and abbreviations

ACSM	advocacy, communication and social mobilization
AIDS	acquired immunodeficiency syndrome
ART	antiretroviral therapy
CBO	community-based organization
CDC	United States Centers for Disease Control and Prevention
CPT	co-trimoxazole preventive therapy
DOTS	the basic package that underpins the Stop TB Strategy
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
HIV	human immunodeficiency virus
HMIS	health management information systems
IEC	information, education and communication
IPT	isoniazid preventive therapy
M&E	monitoring and evaluation
MDG	Millennium Development Goal
MDR-TB	multidrug-resistant tuberculosis
NACP	national AIDS control programme
NGO	nongovernmental organization
NTP	national TB control programme
PEPFAR	United States President's Emergency Plan for AIDS Relief
PMTCT	prevention of mother-to-child transmission of HIV
TB	tuberculosis
TB/HIV	the intersecting epidemics of TB and HIV
TBPT	tuberculosis preventive therapy
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNGASS	United Nations General Assembly Special Session
USAID	United States Agency for International Development
VCT	voluntary counselling and HIV testing
WHO	World Health Organization

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Guide review methodology

The first version of this monitoring and evaluation guide for collaborative TB/HIV activities was published in 2004. WHO decided to revise this guide to reflect further field experience in monitoring TB/HIV activities and to harmonize the indicators with revisions of the Organization's recommended TB and HIV recording and reporting formats, which now capture data on TB/HIV activities.

The initial review draft of this document benefited from valuable input from the PEPFAR TB/HIV indicator revision process and the Stop TB Partnership TB/HIV core group, and its TB/HIV monitoring task force. A monitoring and evaluation guide expert revision group was constituted at a two-day meeting held in Geneva (Switzerland) in September 2008, and this group reviewed the draft and guided the revision process both at this meeting and through a subsequent wider e-mail consultation. The e-mail-based consultation incorporated a wide range of stakeholders, including PEPFAR, CDC, USAID, IUATLD, KNCV, UNAIDS, WHO HIV and TB control staff at headquarters and regional and country offices, as well as HIV and TB control programme managers.

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Glossary

The definitions provided below refer to the use of terms contained in this guide and are not necessarily valid in other contexts.[1]

evaluation

the rigorous, scientifically-based collection of information about program/intervention activities, characteristics, and outcomes that determine the merit or worth of the program/intervention. Evaluation studies provide credible information for use in improving programs/interventions, identifying lessons learned, and informing decisions about future resource allocation.

Related terms: Economic evaluation; Formative evaluation; Impact evaluation; Outcome evaluation, Process evaluation; Operational research; Summative evaluation

impact

the long-term, cumulative effect of programs/interventions over time on what they ultimately aim to change, such as a change in HIV infection, AIDS-related morbidity and mortality.

Note: Impacts at a population-level are rarely attributable to a single program/intervention, but a specific program/intervention may, together with other programs/interventions, contribute to impacts on a population.

impact evaluation

a type of evaluation that assesses the rise and fall of impacts, such as disease prevalence and incidence, as a function of HIV programs/interventions. Impacts on a population seldom can be attributed to a single program/intervention; therefore, an evaluation of impacts on a population generally entails a rigorous design that assesses the combined effects of a number of programs/interventions for at-risk populations.

Related terms: Economic evaluation; Outcome evaluation; Summative evaluation

inputs

the financial, human, and material resources used in a program/intervention.

Synonym: Resources

monitoring

routine tracking and reporting of priority information about a program / project, its inputs and intended outputs, outcomes and impacts.

Related terms: Impact monitoring; Input and output monitoring; Outcome monitoring

outcome

short-term and medium-term effect of an intervention's outputs, such as change in knowledge, attitudes, beliefs, behaviors.

Related terms: Outputs; Impacts

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[1] GLOSSARY OF M&E TERMS Prepared by the Evaluation Technical Working Group of the Joint United Nations Programme on HIV/AIDS (UNAIDS) Monitoring and Evaluation Reference Group June 2008 http://www.globalhivmeinfo.org/DigitalLibrary/Digital Library/Glossary of Monitoring and Evaluation Terms.doc

outcome evaluation

a type of evaluation that determines if, and by how much, intervention activities or services achieved their intended outcomes. An outcome evaluation attempts to attribute observed changes to the intervention tested.

Note: An outcome evaluation is methodologically rigorous and generally requires a comparative element in its design, such as a control or comparison group, although it is possible to use statistical techniques in some instances when control/comparison groups are not available (e.g., for the evaluation of a national program).

Related terms: Economic evaluation; Impact evaluation; Summative evaluation

outputs

the results of program/intervention activities; the direct products or deliverables of program/intervention activities, such as the number of HIV counseling sessions completed, the number of people served, the number of condoms distributed.

Related terms: Impacts; Inputs; Outcomes

processes

The multiple activities that are carried out to achieve the objectives of programmes.

process evaluation

a type of evaluation that focuses on program/intervention implementation, including, but not limited to access to services, whether services reach the intended population, how services are delivered, client satisfaction and perceptions about needs and services, management practices. In addition, a process evaluation might provide an understanding of cultural, sociopolitical, legal, and economic contexts that affect implementation of the program/intervention.

Related terms: Formative evaluation; Operational research

surveillance

the ongoing, systematic collection, analysis, interpretation, and dissemination of data regarding a health-related event for use in public health action to reduce morbidity and mortality and to improve health. Surveillance data can help predict future trends and target needed prevention and treatment programs.

Synonym: Impact monitoring / Related terms: Epidemiology; Second-generation surveillance; Sentinel surveillance

1. Introduction

The rapid growth of the human immunodeficiency virus (HIV) epidemic in many countries has resulted in an equally dramatic rise in the estimated number of new tuberculosis (TB) cases. HIV-related TB continues to increase even in countries with well-organized national TB control programmes (NTPs) that are implementing DOTS – the basic package that underpins the Stop TB Strategy. Full DOTS implementation is clearly insufficient to control TB where HIV is fuelling the TB epidemic, and control of HIV infection must therefore become an important concern for NTPs. In recognition of this, TB/HIV collaborative activities have been incorporated as major components of the Stop TB Strategy and the Global Plan to Stop TB. The high morbidity and mortality from TB among people living with HIV make TB case detection, treatment and prevention a priority for national AIDS control programmes (NACPs). TB and HIV infection coexist in many people worldwide, and HIV and TB control programmes need to collaborate to prevent and relieve the resultant suffering.

The unprecedented scale of the HIV-related TB epidemic demands urgent, effective and coordinated action to improve diagnostic, care and prevention services for people living with HIV and TB. However, this does not require the development of an independent programme for TB/HIV but simply closer collaboration between existing TB and HIV control programmes to exploit synergies, avoid overlaps and fill the gaps in service provision.

Wherever HIV is fuelling the TB epidemic, collaborative TB/HIV activities aim to reduce the burden of disease by expanding the scope of TB and HIV control programmes and improving the quality of service provision. Increasing resources are being allocated for collaborative TB/HIV activities; in many countries, innovative pilot projects are now being replaced by scaled-up national TB/HIV activities. As a result, there is a growing need to monitor these activities and evaluate their impact in order to inform future expansion of the most effective. A firm evidence base is needed to underpin the planning and improvement of future collaborative TB/HIV activities. Programme managers are accountable to the population they serve and often to donors. They need to be able to demonstrate how their programmes are progressing towards their goals – and, if programmes are failing, to identify the reasons and solutions. Programmes, countries and donors also need to demonstrate progress towards the International Development Goals (see box on page 3).

Revision of the guide

The first version of this guide, published by WHO in 2004, took account of collaborative TB/HIV activities as an integral part of national and international responses to the joint TB/HIV epidemics. The indicators developed then, together with subsequent field experience, have informed updates of existing guides to monitoring and evaluation (M&E) for both TB and HIV control programmes.[2,3] This version of the guide has been updated to reflect further field experience in monitoring TB/HIV activities and to harmonize the indicators with the revisions of the WHO-recommended TB and HIV recording and reporting formats.

Main changes

The number of TB/HIV indicators in this update has been reduced from 20 to 13, with indicators for Objective A (establishing the mechanisms of collaboration) being incorporated into the country profile section, which should be consulted as part of country reviews and situation analyses. Indicators for Objectives B and C have been retained and updated, and

[2] *Revised TB recording and reporting forms and registers, version 2006*. Geneva, World Health Organization, 2006 (available at www.who.int/tb/publications/2006/en/index.html).

[3] *Patient monitoring guidelines for HIV care and antiretroviral therapy (ART)*. Geneva, World Health Organization, 2006 (available at www.who.int/hiv/pub/guidelines/patient/en/index.html).

two new indicators have been added: the first (B.3.2) concerns the monitoring of TB in health-care workers; the second (C.1.2.2) measures case-finding, i.e. the detection of HIV-positive TB patients, as a percentage of country-estimated cases.

Aim of this guide

This guide to monitoring and evaluation has been developed to assist the management of TB and HIV control programmes to implement collaborative TB/HIV activities. It is intended to facilitate the collection of standardized data and help in the interpretation and dissemination of these data for programme improvement. It also aims to ensure consistency across all agencies and stakeholders involved in HIV, TB and collaborative TB/HIV activities, avoiding duplication of effort in data collection by providing a core set of internationally accepted and standardized indicators for monitoring and evaluating programme performance. These indicators have been developed in collaboration with the 2008 PEPFAR revision process of TB/HIV indicators and are also incorporated into the latest monitoring and evaluation tool kit (2009 version) produced by the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM).[4] The data collected using these standardized indicators will provide further evidence of the benefits of collaborative TB/HIV activities. It is expected that these indicators will also ensure harmonization of data collection for various partners and donors. Data collection and reporting should be integrated into a single existing national M&E system wherever possible, in accordance with the "Three Ones" principles.[5]

This guide does not detail the information required by programmes to monitor progress towards expanding the Stop TB Strategy or services for HIV prevention, care and treatment, since this is well documented elsewhere.[6,7] However, much of the information gathered for these two purposes will be of assistance in the overall M&E of collaborative TB/HIV activities. Universal access to TB/HIV collaborative activities necessitates both programmes scaling up their activities to detect and treat both diseases in the same manner. The new case-finding indicator in this guide is designed to monitor progress towards this element of universal access.

Target audience

This guide is intended for policy-makers within ministries of health as well as other institutions and role players that have an impact on health; HIV and TB control programme managers at all levels; national, regional and district TB/HIV coordinators or members of coordinating bodies; and staff of development and technical agencies, nongovernmental organizations (NGOs), civil society and community-based organizations (CBOs) involved in supporting collaborative TB/HIV activities.

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4 *Monitoring and evaluation toolkit: HIV, tuberculosis and malaria and health systems strengthening. Part 1: The M&E system and Global Fund M&E requirements*. Geneva, Global Fund to Fight AIDS, Tuberculosis and Malaria, 2009 (available at: www.theglobalfund.org/documents/me/M_E_Toolkit.pdf).

5 Principles by which governments, working in cooperation with their partners in civil society and the international community, may greatly reduce the spread of AIDS. Donors, developing countries and United Nations agencies agreed to harmonize their efforts around three core principles – known as the «Three Ones» – one HIV action framework that provides the basis for coordinating the work of all partners; one national AIDS coordinating authority; and one agreed country-level monitoring and evaluation system.

6 *Revised TB recording and reporting forms and registers – version 2006*. Geneva, World Health Organization, 2006 (WHO/HTM/TB/2006.373; available at: www.who.int/tb/dots/r_and_r_forms/en/index.html).

7 *The three interlinked patient monitoring systems for HIV care/ART, MCH/PMTCT and TB/HIV: standardized minimum data set and illustrative tools*. Geneva, World Health Organization [in preparation].

International Development Goals

Targets have been set by a number of international bodies to stimulate global action to reduce the heavy burden of infectious disease, including TB and HIV, in the developing world. These targets are collectively referred to as the International Development Goals.

Millennium Development Goals (MDGs)

In 2000, the United Nations General Assembly accepted the goals and targets established in the Millennium Declaration. These targets embrace the WHO TB targets (70% case detection and 85% cure rate) and also propose to reduce TB prevalence and death rates by 50% of the year 1990 estimates by 2015. They also aim to halt, and begin to reverse, the spread of HIV by the year 2015.

United Nations General Assembly Special Session (UNGASS) on HIV/AIDS, Declaration of Commitment

In June 2001, UNGASS reaffirmed the Millennium Declaration and set quantified global targets:

- to reduce HIV prevalence by 25% among young men and women aged 15–24 in the most affected countries by 2005 and by 25% globally by 2010;
- to reduce the proportion of infants infected with HIV by 50% by the year 2010.

The WHO Global Health Sector Strategy for HIV/AIDS, endorsed by the World Health Assembly in 2003, has adopted these targets.

The Global Plan to Stop TB 2006–2015

The Global Plan, launched in 2006 (and endorsed by the World Health Assembly in 2007), has set the following targets for TB/HIV to be reached by 2015:

- 26 million (100%) people living with HIV and attending HIV services screened for TB in 2015;
- 3.1 million newly diagnosed and eligible people living with HIV placed on IPT (isoniazid preventive therapy) annually;
- 2.9 million (85%) of TB patients in DOTS programmes HIV-tested and counselled annually;
- 400 000 (57%) of HIV-positive TB patients placed on ART (antiretroviral therapy) annually.

2. Collaborative TB/HIV activities

What are the components of collaborative TB/HIV activities?

In 2004, WHO published the *Interim policy on collaborative TB/HIV activities*,[8] which describes what should be done, under given circumstances in countries, to address TB/HIV. This document clearly defines collaborative TB/HIV activities, their goals and objectives (see Table 1).

The goal of collaborative TB/HIV activities is to reduce the burden of TB and HIV in populations affected by both diseases by expanding the scope of TB and HIV control programmes. The objectives underlying this goal are:

- to establish the mechanisms for collaboration between TB and HIV control programmes;
- to reduce the burden of TB in people living with HIV;
- to reduce the burden of HIV in TB patients.

These objectives can be achieved only through effective implementation of DOTS, enhanced HIV prevention and care, and the delivery of additional collaborative TB/HIV activities. The additional collaborative activities address the interface of the intersecting TB and HIV epidemics and should be carried out as part of the health sector response to the dual TB/HIV epidemic. They will be more successful in the presence of effective implementation of national HIV and TB control strategies that are based on international guidelines. The recommended activities can be implemented by TB and HIV programmes, NGOs, CBOs or the private sector.

What is the rationale for monitoring and evaluating collaborative TB/HIV activities?

Monitoring and evaluating TB/HIV collaborative activities provides the means to assess the quality, effectiveness, coverage and delivery of services and promotes a learning culture within programmes to ensure continual health improvement. By tracking patients who are supported by two well-established, disease-specific control programmes and a range of other services and organizations, M&E of collaborative TB/HIV activities facilitates the provision of comprehensive care. HIV control programmes may be performing activities and collecting data of interest for TB control programme management, and vice versa: information on programme management and patient management must flow between the programmes, services and organizations involved. The challenge is to ensure that patients receive optimal care from both programmes, that data are collected to determine whether this is the case, and that corrective measures are implemented if it is not.

Establishing standard indicators and reporting and recording templates supports the streamlining of M&E processes. Reporting requirements from donors and other agencies that are not harmonized with internationally standardized reporting systems place an unnecessary burden on programmes; and M&E capacity is often weak in high-burden settings.

Internationally agreed and harmonized M&E indicators emphasize to those responsible for making and implementing policy the importance of specific activities and may help to ensure that these activities occur in line with the dictum “what gets measured gets done”.

M&E systems facilitate accountability for resources allocated for activities. TB and HIV control programmes must be accountable for the resources allocated to tackling the joint

[8] *Interim policy on collaborative TB/HIV activities*. Geneva, World Health Organization, 2004 (WHO/HTM/TB/2004.330; WHO/HTM/HIV/2004.1).

epidemics. If, through effective M&E, they can demonstrate a positive impact, they are likely to attract additional resources. Thus, successful M&E can be influential in mobilizing additional resources.

Effective M&E for TB/HIV collaborative activities, including joint supervision, will facilitate the cross-checking and reconciliation of data between the two programmes at local and country levels. Both TB and HIV control programmes should report on the numbers of patients in care being treated for both TB and HIV. If both programmes are cross-referring and counting all cases, the two sets of data should match, as they reflect the treatment of the same patients. At the district level and below, and as part of supervisory activities, data reconciliation using the HIV care and TB registers will reveal any problems with patient referrals between programmes. Any patient with both HIV and TB should appear in both registers, and the HIV care registration number should be noted in the TB register, and vice versa.

When should TB/HIV collaboration be undertaken?

Suggested thresholds for undertaking collaborative TB/HIV activities have been developed. These thresholds differentiate between countries on the basis of national or regional adult HIV prevalence and/or HIV prevalence among TB patients.[9]

Who are the beneficiaries of collaborative TB/HIV activities?

The main beneficiaries of collaborative TB/HIV activities will be communities affected by HIV and/or experiencing a high or rising burden of TB as a result of HIV.

Table 1. Recommended collaborative TB/HIV activities[9]

Establish mechanisms for collaboration	
• Set up a coordinating body for TB/HIV activities • Conduct surveillance of HIV prevalence among TB patients • Carry out joint TB/HIV planning • Conduct monitoring and evaluation	Jointly by NACP, NTP and partners
Reduce the burden of TB in people living with HIV: the "Three Is"	
• Establish intensified case-finding: TB screening and diagnosis • Introduce isoniazid preventive therapy • Ensure TB infection control in health-care and congregate settings	HIV control programmes
Reduce the burden of HIV in people living with TB	
• Provide HIV testing and counselling • Introduce HIV prevention methods • Introduce co-trimoxazole preventive therapy • Ensure HIV care and support • Introduce antiretroviral therapy	TB control programmes

[9] *Interim policy on collaborative TB/HIV activities*. Geneva, World Health Organization, 2004 (WHO/HTM/TB/2004.330; WHO/HTM/HIV/2004.1).

3. Methodology of monitoring & evaluation of HIV/TB collaboration

The M&E system within a programme or project is structured to ensure the most efficient use of resources to generate the data needed for decision-making. It guides data collection and analysis, increasing the consistency of the data and enabling managers to track trends over time. While it should serve many different constituencies – including programme managers, donors and government planners – it should at the same time bring the various interests together into the one system to avoid duplication of effort.

The system should include dedicated individuals at the central level who coordinate M&E for health and who build up national and sub-national capacity to carry out M&E. (It is recommended that 10% of the programme budget be spent on M&E.) It should be based on a strategy that includes clear goals, targets and guidelines for the implementation of activities, as well as specific indicators to measure programme progress. It should also include plans for data collection, analysis and dissemination, and use of results for programme improvement. Table 2 summarizes the key elements of a good M&E system; a more detailed generic overview of, and rationale for, monitoring and evaluation is given in Annex 1.

Various methods are available for monitoring and evaluating collaborative TB /HIV activities. The major ones are outlined in the following paragraphs.

Routine monitoring systems

A good disease-specific health programme uses the data collected routinely for patient care to inform programme management. Both TB and HIV control programmes use patient cards as the data source for disease-specific patient registers. The registers are used to monitor patient progress, and allow regular programme monitoring. Periodically – usually every three months – the registers are used as the basis for quarterly summary reports that provide information on patient enrolment and retention during the quarter, and treatment outcomes using cohort analysis of groups of all patients starting treatment during previously specified time periods. These reports are analysed locally, preferably in conjunction with supportive supervision or quarterly review meetings, and are then sent to district and national levels for further aggregation, analysis, dissemination and management of the programme.

The registers also contain variables used in measuring TB/HIV collaborative activities. For example, the WHO-recommended HIV care registers contain columns for documenting TB treatment and the start date (month and year) of IPT, and also record TB status as assessed during the previous visit. Similarly, TB registers have a column for HIV testing and another for recording the provision of co-trimoxazole preventive therapy (CPT) and ART. These variables are routinely included in the quarterly summary reports of both programmes – and this allows assessment of TB/HIV collaborative activities.

Supportive supervision

Supportive supervision of clinics from the district and/or central level is an essential element of routine monitoring and evaluation of programmes. Good supportive supervision includes quality checks of reporting and recording: patient cards and registers are inspected, the transfer of data is rechecked and some elements of the quarterly reports are recalculated. Supportive supervision should involve identification and discussion of difficulties or misunderstandings in data management and should provide opportunities for learning.

The frequency of supportive supervision depends on resources, but TB control programmes have generally found that, during the year that follows establishment of the system, close

monthly supervision and mentoring are needed. Routine supportive supervision should be conducted at least every three months.

Supportive supervision may also be used to gather data forms for the central level and to provide drugs and stationery supplies to the clinics. Simple tools such as score cards or certificates of excellence for good reporting and recording may be used to motivate health workers.

At least once a year, a more systematic review of the routine monitoring systems may be carried out by the supportive supervision team. Ideally, this should involve members of both TB and HIV control programmes. Activities may include validating the group cohort report and analysis; validating the quarterly report; additional register tallies; and systematic sampling of patient cards to measure the quality of care and to validate core indicators such as assessment and recording of TB status at the last visit. Finally, TB and HIV district supervisors can reconcile HIV and TB register data to cross-check registration of TB patients into HIV care or ART and of HIV patients into TB treatment.

Surveillance and surveys

At all levels of an HIV epidemic (low-level, concentrated, generalized), routine HIV testing of TB patients – when available – should be used for surveillance purposes. The data can be calibrated by periodic (special) or sentinel surveys: these are either separate, stand-alone surveys undertaken periodically, or sentinel surveillance from selected treatment sites. WHO has produced guidelines for conducting these activities in a standardized manner;[10] more details may be found in Section 4 of this guide. Surveillance systems should also be used for measuring TB among HIV patients.

Country situational analysis

The country situational analysis is an important tool that brings together all the available information on disease epidemiology (including surveillance and survey data), and programme structure, function, output and impact within the context of the overall health system. The analysis identifies programme strengths, weaknesses and gaps, and is often carried out as part of the planning cycle in preparation of a strategic multi-year programme plan. It is often a requirement of donor funding applications and should also be carried out to inform external programme reviews. Section 4 of this guide provides guidance on developing a country situation analysis for TB/HIV collaborative activities.

External programme reviews

An external programme review, usually lasting 1–2 weeks, is organized at the request of the programme, often during preparation of a multi-year strategic programme plan. It usually involves forming a team of international and national experts on programme management or technical aspects of the programme; local implementation partners, ministry of health programme staff, civil society and donors are also represented. The team meets for 1–2 days, for orientation with a pre-prepared situational analysis and to agree on a review methodology. The reviewers then travel throughout the country in sub-teams to observe the programme at all levels (national, regional, district, health centre and community), using agreed tools to examine records, observe activities and interview key informants including health staff, clients other health-care providers and members of voluntary civic and social organizations. All this information is then synthesized and brought together at national level to inform the final report with key findings and recommendations to government and stakeholders. A summary of key findings is usually presented to senior ministry of health representatives before the team's departure.

[10] Further detail on HIV surveillance in TB patients can be found in *Guidelines for HIV surveillance among tuberculosis patients*, 2nd ed. Geneva, World Health Organization, 2004 (WHO/HTM/TB/2004.339; WHO/HIV/2004.06; UNAIDS/04.30E).

Collaborative TB/HIV activities should form part of both TB and HIV control programme reviews, preferably bringing together key staff from both programmes. Reviewers should ensure that review findings are shared with and owned by both of these programmes.

Table 2. Checklist of features of a good M&E system[a]

M&E unit

- Dedicated personnel overseeing health service M&E nationally
- A budget for M&E (10% of total programme budget)
- Formalized link with partners: research institutions; leading NGOs, donors and CBOs involved in TB/HIV; private sector; other relevant sectors
- Data processing and statistical expertise in the M&E unit or affiliated unit
- Data dissemination expertise in the M&E unit or affiliated unit
- Local M&E human resource capacity developed and maintained
- Regular independent review of programme

Clear goals

- Well-defined national programme aims, objectives, activities and targets
- Regular evaluation of progress in implementing national M&E plans
- Guidance for districts and regions or provinces on M&E
- Guidelines for linking M&E to the private and other sectors
- Coordination of national and donor M&E needs

Indicators

- A set of priority core indicators for different levels of M&E
- Indicators that are comparable over time
- Indicators that are comparable between geographical areas within a country and between countries

Data collection and analysis

- A national-level data collection and analysis plan
- A logical flow of data from service delivery to national level
- A plan to collect data and analyse indicators at different levels of M&E

Data dissemination and use of results

- A national-level data dissemination plan with clear guidance on how information can be used for programme improvement at all levels.
- A well-disseminated and informative annual M&E report
- Annual meetings to disseminate and discuss M&E and research findings, including programme implementation reviews, with policy-makers and planners
- A centralized database or library of all TB- and HIV-related data collection, including ongoing research
- Coordination of national and donor M&E dissemination needs

[a] Adapted from: *National AIDS programme: a guide to monitoring and evaluation*. Geneva, Joint United Nations Programme on HIV/AIDS, 2000 (UNAIDS/00.17E).

Monitoring and evaluation methods

- External reviews of the programme
- Situation analysis (using country profile checklist)
- Routine monitoring systems
- Surveillance and surveys
- Supportive supervision
- Health management information systems (HMIS)

4. Country profile and situational analysis

A country profile should provide the context for the monitoring and evaluation of collaborative TB/HIV activities. It includes environmental, cultural, political and socioeconomic factors, often captured as a periodic narrative, which may also help to explain changes in indicator values and assist in their interpretation. In addition to these broader factors, other data that are useful for providing context to overall M&E include total population, number of health facilities and burden of TB and HIV disease. These data are likely to be collected routinely, produced in other reports and available from other sources, and therefore no detail on collection methods is given here.

An initial situational analysis should be performed to collate a baseline record of the activities and services already in place and of where there are gaps that can be used for advocacy, resource mobilization and planning purposes; and to ensure that activities can be provided on the basis of local needs and capacity. The information may be collated nationally but for planning should be available down to the level of the basic administrative unit (district or equivalent). These data should be collected regularly as a component of programme M&E, giving some indication of the progress towards national coverage of services for people with TB and/or HIV and the impact that programme activities are having on disease burden. Examples of the data that should be collected in a situational analysis to produce a country profile are given below. A checklist of main items to be assessed is provided in Annex 2.

Population and services

Total population

Total population at all administrative levels (national, provincial, regional, district and subdistrict, or equivalents), including total adult population (aged 15–49 years) and young adult population (aged 15–24 years), to be used as denominators for the time period under evaluation.

Number of administrative units (regions, provinces, districts and sub-districts)

Total number of:

- health districts/subdistricts (or equivalent basic administrative/operational units) in the country;
- health regions (or equivalent second-level administrative/operational units) in the country;
- health provinces (or equivalent third-level administrative/operational units) in the country.

Number of health facilities

The total number of health facilities in the country by category, for example public, private, tertiary hospitals, secondary referral hospitals, district general hospitals, primary health-care clinics, health posts, TB diagnostic and treatment centres, HIV counselling and testing centres, and HIV care and support service providers. Health-care facilities under other jurisdictions (ministry of justice, military, etc.) should also be included.

Staffing levels at each health facility

For each of the above facilities it is useful to know the number of staff by category and grade. If possible, this should be reported by the number of posts allocated to each facility and the number that are actually filled. In decentralized health-care systems, the number of staff and the percentage of their time devoted to TB/HIV activities should be reported.

Similarly, the contribution of community health workers to TB/HIV support activities should also be reported.

Disease-specific information

A clear understanding of the burden of TB and HIV disease in the population is important for planning services and for monitoring the impact of programmes. The Millennium Development Goals (MDGs), approved by the United Nations, have associated indicators.[11] Resources will be available to ensure that these data are available on a regular basis in all high-burden settings. Where possible, the MDG indicators should be included in the overall M&E of collaborative TB/HIV activities.

Burden of HIV

HIV seroprevalence data should be available in most countries from the NACP. Representative national estimates should be obtained – and should be broken down and reported by the smallest administrative unit possible. In high-prevalence settings, HIV prevalence should be reported for the population as a whole, by age group and by risk group (antenatal clinic attendees, injecting drug users, individuals who attend for voluntary counselling and HIV testing (VCT), blood donors, military recruits, prisoners, men who have sex with men, commercial sex workers). In countries with focal epidemics, HIV prevalence should be reported in detail only in the relevant at-risk populations and for all administrative areas within the country with a generalized HIV epidemic (adult HIV seroprevalence >1%).

The relevant MDG indicator is MDG Health Indicator 18 – prevalence of HIV infection among young people aged 15–24 years or at-risk populations, reported separately for urban and non-urban populations. HIV prevalence data are required to monitor MDG 6 (to combat HIV, malaria and other diseases) and Target 7 (to have halted, and begun to reverse, the spread of HIV by 2015). They will give an indication of the scale and distribution of the HIV epidemic at the outset of activities. If monitored regularly over time, this indicator will indicate the trend in HIV burden in the at-risk population and may help in evaluating the likely impact of collaborative TB/HIV activities.

Burden of TB

Comprehensive data on the true prevalence or incidence of TB in a given population are seldom available. However, most NTPs will collect detailed information on all reported TB cases that are registered TB cases. WHO also estimates country incidence of TB, which allows analysis of the proportion of existing TB cases that are actually detected and reported, i.e. the case-detection rate.

Case-detection rates for each country are published in WHO's annual report on global TB control. In many countries, wide confidence intervals are associated with TB estimates, because of the difficulty of assessing prevalence and incidence data in the absence of national surveys. Whenever possible, overall national data on the burden of multidrug-resistant TB (MDR-TB) and special studies on MDR-TB among HIV-positive patients should be reported.

DOTS coverage

It is important to know what proportion of TB cases are managed under DOTS programmes, and what proportion of basic health administrative units (e.g. districts) are considered DOTS districts.

[11] Further information on the Millennium Development Goals can be found at www.un.org/millenniumgoals/ and www.undp.org/mdg/.

The relevant MDG indicator is MDG Health Indicator 24 – proportion of TB cases detected and proportion cured under DOTS.

ART treatment and care

In any country, ART should be available for all those who have tested positive for HIV and who meet the national criteria for ART eligibility. Generally, TB diagnosis and treatment and HIV testing of TB patients are much more decentralized than the provision of ART. In a country analysis, it is important to capture the degree to which ART service provision is aligned with TB service provision, and to what extent ART services have been decentralized within the country.

Mapping the overlap (or absence thereof) of ART and TB services is a useful analytical and planning tool. Millennium Development Goal 6 and Target 6b "achieve, by 2010, universal access to treatment for HIV for all those who need it" are the relevant indicators here.

TB case management and outcome

Data on TB case management in a country should be available from routine NTP monitoring. They will include information on the number of TB suspects investigated, the number of patients in whom TB has been diagnosed (new/relapse, smear-positive, smear-negative and extrapulmonary), and TB case management details, including case notification rates and treatment outcomes (completed, cured, interrupted, died, transferred, failed). This is also a requirement for monitoring progress towards the MDGs.

MDG 6 (to combat HIV, malaria and other diseases), Target 8 (to have halted, and begun to reverse, the incidence of malaria and other major diseases by 2015), requires a measure of prevalence and death rates associated with TB. Without community surveys, however, it is impossible to know the true prevalence and death rate from TB because some cases never present to services. Proxy indicators – case-fatality rates and case-notification rates – are therefore used. Thus the relevant MDG indicators are MDG Health Indicators 23a – TB case-fatality rate per 100 000 (district, regional and/or national if available) – and 23b – TB case-notification rate per 100 000 (district, regional and/or national if available). These are available from routine TB programme monitoring.

Evaluation of the mechanisms for TB/HIV collaboration

Essential mechanisms for ensuring collaboration in TB/HIV activity at all levels were identified in 2004 in WHO's *Interim policy on collaborative TB/HIV activities*. The following paragraphs provide a checklist that will help in the assessment of these mechanisms for a country situational analysis.

National TB and HIV policy addresses links between TB and HIV

National TB and HIV policy should reflect international policy guidance on collaborative TB/HIV activities.[12] The content of the government's TB or HIV policies, plans and/or guidelines should be analysed and compared with the checklist of key policy components.

A policy is considered to be complete if it contains the following 14 key components:

- Explicit recognition of the potential impact of TB morbidity and mortality in people living with HIV.
- Inclusion of representatives of the NTP in the planning process of the NACP, and vice versa.

[12] Source: *Interim policy on collaborative TB/HIV activities*. Geneva, World Health Organization, 2004 (WHO/HTM/TB/2004.330; WHO/HTM/HIV/2004.1).

- Surveillance of HIV prevalence among TB patients that is consistent with international recommendations.
- ACSM (advocacy communication and social mobilization) strategy for HIV to include appropriate information about TB, and vice versa.
- Training for those working in HIV to include appropriate information about TB, and vice versa.
- Regular, intensified TB case-finding recommended for all people living with HIV.
- ART provided for all eligible HIV-positive TB patients in accordance with national protocols.
- HIV-positive TB patients to have full access to the continuum of care for people living with HIV.
- CPT for all HIV-positive TB patients and all people living with HIV in accordance with international guidelines.
- Access to investigation and treatment for TB to be part of a basic package of care for people living with HIV.
- Treatment of latent TB infection to be offered to all people living with HIV in accordance with international guidelines.
- Establishment of a national TB and HIV coordinating body, technical advisory committee or task force.
- HIV testing and counselling routinely offered to all patients in whom TB has been diagnosed.
- Infection control policy and monitoring system.

Existence of a coordinating body for TB/HIV activities effective at all levels

National coordination is essential to reach policy consensus, develop joint strategic plans, mobilize resources, build capacity, and implement and monitor collaborative TB/HIV activities. All countries should have a functioning mechanism or body that can coordinate the activities of the TB and HIV control programmes. The absence of such a mechanism suggests a lack of commitment to TB/HIV collaboration and may jeopardize successful national implementation of such activities. The following checklist should be used for further enquiry into the function of the coordinating body:

- Is there a body or mechanism for coordinating collaborative TB/HIV activities at national level?
- Does the national body or mechanism have representation from all major stakeholders in TB and HIV control?[13]
- Does it meet at least quarterly and are minutes circulated?
- Is a similar coordinating body or mechanism also effective at subnational levels (e.g. regional, district or equivalent) where both TB and HIV are prevalent?

Existence of joint planning at national level for collaborative TB/HIV activities between the NTP and NACP

The content of the national joint TB/HIV plan and budget, endorsed by both NTP and NACP, should be analysed and compared with the checklist of key components.

[13] Membership should be drawn from each programme and include representatives of urban and rural district health management teams, community, TB patients and people living with HIV, and NGOs/CBOs working in TB or HIV, as defined in *Guidelines for implementing collaborative TB and HIV programme activities*, Geneva, World Health Organization, 2003 (WHO/CDS/TB/2003.319; WHO/HIV/2003.01).

In the absence of a joint TB/HIV plan, there should be a content analysis of both the NTP and NACP plans to identify evidence of each of the following key components:

- Clear definition of the roles and responsibilities of the NTP and NACP for implementation of each collaborative TB/HIV activity.
- Joint development of TB/HIV guidelines for prevention, diagnosis, treatment and care.
- Joint resource mobilization for collaborative TB/HIV activities (joint budget if resources are adequate or joint proposal to solicit additional resources).
- Joint strategy for human resource capacity development to ensure adequate staff for the delivery of collaborative TB/HIV activities; this should include attention to recruitment and retention, training, accreditation, and ongoing supervision and support of staff.
- Joint pre-service and in-service training on TB and HIV for all health-care workers.
- Joint communication and advocacy strategy for TB and HIV control programmes (HIV messages include TB, and vice versa).
- Joint plan for involving communities in implementation of collaborative TB/HIV activities, ensuring that community TB programme supporters include HIV prevention, care and support activities in their remit, and vice versa.
- Joint plan for operational research in collaborative TB/HIV activities.
- Joint approach to M&E of collaborative TB/HIV activities.

For completeness, all components should be reflected in a joint plan. Where such a plan is not available, evidence should be sought that each of the key components is stated in both the NTP plan and the NACP plan. In larger countries it may be appropriate to seek evidence of joint planning at subnational level.

Presence of joint TB/HIV IEC materials in TB and HIV services

At national level, a joint approach to ACSM for TB/HIV should be reflected in strategy documents. At local level the presence of comprehensive and linked information, education and communication (IEC) materials is an important step in ensuring community awareness about HIV, TB, the link between them, and the prevention, treatment and care opportunities that are available.

Evidence for the presence of joint TB/HIV IEC materials can be collected at the time of external programme review. The reviewer should determine whether any IEC materials (posters, leaflets, videos) are freely available for clients in health-care settings visited. As a minimum, IEC materials should provide information on TB, HIV and their interaction and on how to reduce the risk of both HIV transmission and TB disease. Materials should be available in local languages and understandable by those who are illiterate.

The absence of IEC materials related to HIV in TB services and to TB in HIV services may be a consequence of failure to produce such materials or to distribute them to the facility level; lack of collaboration between control programmes (HIV-related IEC materials not distributed to TB services); or lack of commitment to HIV awareness at the NTP (and of TB at the NACP). Equally, IEC material on the link between TB and HIV may not be produced nationally or may be inadequately distributed; or a lack of commitment to TB/HIV control at the facility level may mean that distributed materials are not used. Additional investigation will be necessary to identify the reason or reasons.

Presence of an integrated national M&E system for collaborative TB/HIV activities that informs annual NTP and NACP planning cycles and medium-term (3–5-year) plans

Routine monitoring. Evidence (gathered from annual TB, HIV and TB/HIV plans and from interviews with key TB and HIV control programme staff) that the annual TB/HIV monitoring report informs the annual planning process of both programmes.

Evaluation. Evidence (gathered from annual TB, HIV and TB/HIV plans and from interviews with key TB and HIV programme staff) that the report from the detailed medium-term evaluation of collaborative TB/HIV activities informs the medium-term planning process of both programmes.

Evaluation of existing country surveillance and monitoring systems

System for HIV surveillance in TB patients

Is there a system that complies with international standards for monitoring the prevalence of HIV among TB patients?[14] If so, describe the system, detailing the frequency of reporting and the estimated coverage of the surveillance system.

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

- *Routine HIV testing data* can form the basis of a reliable surveillance system in all stages of the HIV epidemic (low-level, concentrated, generalized[15]), provided that high coverage is achieved. These routine data can be calibrated by periodic (special) or sentinel surveys.
- *Sentinel surveillance* collects information in a regular and consistent way from a predetermined number of people from specific sites and from population groups who are of particular interest or are representative of a larger population. The difficulty with sentinel surveillance is in determining the extent to which the sampled population is representative of the population from which they are taken and of the general population of TB patients. Sentinel surveillance systems are usually based on unlinked anonymous testing methods, often using blood samples that have been collected for other purposes and stripped of all identifying markers.
- *Periodic special surveys* have a specific role where the prevalence of HIV among TB patients has not been previously estimated. They can be an essential part of the initial situation analysis. Surveys using representative sampling methods and appropriate sample sizes can provide accurate estimates of the burden of HIV in TB patients. This information may alert TB control programmes to a potential HIV problem and enable action to be taken, which may include the institution of more systematic surveillance.

Ideally, surveillance of HIV prevalence should include all newly registered TB patients in whom the disease has been diagnosed according to international standards.[16]

System for monitoring the incidence of TB among people living with HIV

Is there a system for monitoring the notification of TB among cohorts of people living with HIV? If so, describe the system and detail the frequency of reporting.

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[14] Further detail on HIV surveillance in TB patients can be found in: *Guidelines for HIV surveillance among tuberculosis patients*, 2nd ed. Geneva, World Health Organization, 2004 (WHO/HTM/TB/2004.339; WHO/HIV/2004.06; UNAIDS/04.30E).

[15] Classification according to definitions contained in: *Second generation surveillance for HIV.* Geneva, World Health Organization and the Joint United Nations Programme on HIV/AIDS, 2000 (WHO/CDS/CSR/EDC/2000.5; UNAIDS/00.03E):

Low-level HIV epidemic: HIV prevalence has not consistently exceeded 5% in any defined subpopulation at risk of HIV.

Concentrated epidemic: HIV prevalence consistently >5% in at least one defined subpopulation but <1% in pregnant women in urban areas

Generalized: HIV prevalence consistently >1% in pregnant women in urban areas.

[16] *Treatment of tuberculosis: guidelines for national programmes*, 3rd ed. Geneva, World Health Organization, 2003 (WHO/CDS/TB 2003.313).

The revised HIV care and treatment registers (pre-ART and ART) record TB treatment. These data are also aggregated in the quarterly cross-sectional reports, providing the indicator, proportion of people enrolled in HIV care who start treatment of TB. They can be used for monitoring the incidence of TB among people living with HIV.

System for linkage between HIV and TB reporting databases

Is there a system for identifying cases that are reported to both TB and HIV reporting systems? If so, describe the system and detail the frequency of reporting.

Geographical coverage of collaborative TB/HIV activities

It is important to understand what proportion of any given population can access the services they need, e.g. the proportion of all people living with HIV with access to CPT. Coverage can be defined as the percentage of the population needing a particular service that actually has access to that service. Access may depend on many factors, such as proximity of the nearest service point, timing of service availability, cost of the service and eligibility criteria that may be established by national guidelines or service providers. In practice, measuring coverage in terms of service utilization is often better as data on service utilization, i.e. the percentage of the population in need that actually uses the service, are easier to obtain. However, this can often be difficult to measure accurately because of difficulties in determining the denominator.

In the early stages of establishing a nationwide service, a simple proxy for service coverage is service availability, i.e. the proportion of districts in which a given service is available. This gives no indication of whether the service is actually being used or whether access is equitable or the service is of high quality – but it is cheap and easy to quantify.

The activities outlined in the following paragraphs are further defined in the *Interim policy on collaborative TB/HIV activities*:[17]

Activities to reduce the burden of TB in people living with HIV

The total number of districts (or equivalent) where the following activities are being fully implemented (i.e. implemented in every public sector health facility throughout the district):

- intensified TB case-finding for those found to be HIV-positive during provider-initiated testing and counselling in clinics or during testing at VCT sites;
- intensified TB case-finding for all people living with HIV at every contact with the health service, whether routine or for treatment;
- a formal referral mechanism between HIV diagnostic and care services and TB diagnostic and treatment services for all people living with HIV who have symptoms of TB;
- IPT for people living with HIV;
- TB infection control for all people living with HIV in health-care and congregate settings (e.g. hospitals, clinics, prisons, military barracks).

Availability of HIV testing and counselling at TB diagnostic and treatment centres

The number of TB diagnostic and treatment centres with quality-assured HIV testing and counselling available for TB patients by the following categories, as a proportion of the total number of TB diagnostic and treatment centres or clinics:

- HIV testing and counselling available within the TB clinic or on the same site;
- HIV testing and counselling not available to TB patients;

[17] *Interim policy on collaborative TB/HIV activities*. Geneva, World Health Organization, 2004 (WHO/HTM/TB/2004.330; WHO/HTM/HIV/2004.1).

- total number of TB diagnostic and treatment centres providing HIV testing and counselling divided by total number of TB diagnostic and treatment centres.

Activities to reduce the burden of HIV in TB patients

The total number of districts (or equivalent) in the country where the following activities are being fully implemented:

- routine HIV testing and counselling for all TB patients;
- promotion and provision of HIV prevention (condoms and education) for TB patients;
- CPT for HIV-positive patients during TB treatment;
- ART for eligible HIV-positive TB patients;
- if not available on site, a referral mechanism for HIV-positive TB patients who need HIV care and support.

Services for those attending for HIV testing and counselling or HIV care and support

The number of HIV testing and counselling services or HIV care and support services providing each of the services indicated below, as a proportion of the total number of HIV testing and counselling services or HIV care and support services:

- intensified TB case-finding (among all attendees or only among those found to be HIV-positive);
- TB treatment;
- screening for sexually transmitted infections (all attendees or only those found to be HIV-positive);
- treatment of sexually transmitted infections;
- IPT for HIV-positive people, if no evidence of active TB on screening;
- prevention of mother-to-child transmission of HIV (PMTCT) services for HIV-positive pregnant women;
- HIV care clinic with registration of all HIV-positive individuals on HIV care registers (pre-ART);
- ART;
- support groups for people living with HIV.

Complete package of collaborative TB/HIV activities

The total number of districts adopting a complete package of collaborative TB/HIV activities as detailed in the *Interim policy on collaborative TB/HIV activities* and defined in the national TB/HIV policy, as a proportion of the total number of districts (or equivalent). (See Table 1, *Recommended collaborative TB/HIV activities*, page 5.)

Survey of TB and HIV stakeholders

A list of providers/stakeholders/partners involved in providing TB and/or HIV services in each district,[18] including an assessment of the services offered, target population or catchment area, numbers of clients using each service, client profile (age, sex, risk category), HIV status of clients if known. This will provide information on who is doing what

[18] Guidance on carrying out a survey of stakeholders is given in section 4.1.3 of: *Guidelines for implementing collaborative TB and HIV programme activities*. Geneva, World Health Organization, 2003 (WHO/CDS/TB/2003.319; WHO/HIV/2003.01).

and where, and allow identification of gaps and underserved populations. The range of potential partners includes:

- other government sectors – ministries of agriculture, employment, education, industry, finance, social development, transport, defence, justice, environment;
- private-sector organizations;
- professional organizations;
- civil society organizations – human rights groups, patient groups;
- faith-based organizations;
- implementation agencies;
- NGOs;
- CBOs;
- academic and other public institutions;
- technical and donor organizations.

Funding of TB/HIV activities

The total funds that were available or allocated for collaborative TB/HIV activities from any source (e.g. government, loans, grants, GFATM) in the most recently completed fiscal year. This should include funds from any source (e.g. government, loans, grants, GFATM) in the most recently completed fiscal year.

Assess the total funds budgeted for collaborative TB/HIV activities in the annual plan(s) of the same year. Assess the extent to which adequate funding is available to implement the collaborative TB/HIV activities defined in the annual TB/HIV workplan and/or the annual TB and annual HIV workplans. Assess whether the NTP used the WHO budgeting and planning tool[19] to assist with formulation of the latest 5-year plan, and obtain a copy of such a plan for the situation analysis.

Assess true expenditure against the allocations. Although this is difficult, it often provides important additional insight into the true funding situation.

[19] This tool (www.who.int/tb/dots/planning_budgeting_tool/en/index.html) is designed to help countries to develop plans and budgets for TB control at national and subnational level within the framework provided by the Global Plan and the Stop TB Strategy. These plans can be used as the basis for resource mobilization from national governments and donor agencies.

5. Indicators for collaborative TB/HIV activities

This section gives a range of possible indicators for use in M&E of collaborative TB/HIV activities, grouped by objective and activity area as defined in the WHO *Interim policy*.[20]

Fields for each indicator

- *Indicator title*
- *Definition*. The definition of the indicator, including definition of numerator and denominator, and proposed calculations where necessary.
- *Purpose*. The reason for collecting the information; what the indicator attempts to measure.
- *Methodology*. The suggested methodology for collecting each indicator and the level at which it should be measured (e.g. community, district, provincial, national).
- *Periodicity*. The recommended frequency with which the indicator should be measured.
- *Strengths and limitations*. Main strengths and limitations of indicator.
- *Importance*. Whether the indicator is considered core, desirable, or optional for monitoring and evaluation.
- *Responsibility*. Suggests who should be responsible for ensuring the quality of data collection, analysis and dissemination.
- *Measurement tools*. What is needed to collect the indicator.

Confidentiality considerations

Providing optimal care for HIV or TB requires knowing sensitive information about patients. Care for TB patients is improved when TB care providers know patients' HIV status and can provide, or refer them for, appropriate preventive and treatment services. Similarly, the care of an HIV-infected person is improved when HIV care providers are aware of his or her TB infection or disease status and can provide, or refer the patient for, appropriate TB treatment or prevention. However, this sensitive information must be treated with the utmost confidentiality, and use of such information should adhere to published guidelines. Sensitive information should be shared only with persons who need to know, usually those providing direct patient care. Data regarding HIV are generally considered to be more sensitive than data regarding TB.

All registers – for TB, TB/HIV, and treatment and care of HIV patients – and other documents that contain sensitive information must be stored in a secure location (such as a locked cabinet). Duplicate and unnecessary paperwork should be destroyed when it is no longer needed. Computerized databases that contain sensitive information should be protected by coded passwords and encryption. Particular care should be taken when referrals are made to other services and when information on a patient is transferred from one care facility to another (either manually or electronically). Each programme should develop a policy to ensure the confidentiality of patient data.

In some cases, data used for these indicators may require the collection of sensitive, patient-level information. However, personal identifiers should be removed as soon as possible in the data collection or reporting process and as soon as they are no longer required for matching purposes. Where possible, disaggregated data should be collected and reported. Individual patient data will rarely be needed outside the facility level. For this reason, data reported to districts or for the purpose of collecting indicators in general should not contain patient-level information.

[20] *Interim policy on collaborative TB/HIV activities*. Geneva, World Health Organization, 2004 (WHO/HTM/TB/2004.330; WHO/HTM/HIV/2004.1).

Objective A

A. To establish the mechanisms for collaboration
A.1 A coordinating body for TB/HIV activities effective at all levels
A.2 Surveillance of HIV prevalence among TB patients
A.3 Joint TB/HIV planning
A.4 Monitoring and evaluation

Objective A activities are further explored in the country profile section (Section 4) of this guide. They are no longer listed as indicators, but should be reviewed at each country programme review of either the HIV or TB control programme.

Objective B

B. To reduce the burden of TB in people living with HIV – the "Three Is"
B.1 Establish intensified case finding: TB screening and diagnosis
B.2 Introduce isoniazid preventive therapy
B.3 Ensure tuberculosis infection control in health-care and congregate settings

B.1 Intensified case-finding

Indicator B.1.1 ***Percentage of HIV-positive patients who were screened for TB in HIV care or treatment settings***	
Definition	Number of adults and children enrolled in HIV care[21] whose TB status was assessed and recorded during their last visit during the reporting period, expressed as a proportion of all adults and children enrolled in HIV care and seen for care in the reporting period.
Numerator	Number of adults and children enrolled in HIV care[1] whose TB status was assessed and recorded during their last visit during the reporting period.
Denominator	Total number of adults and children enrolled in HIV care and seen for care in the reporting period.
Purpose	This is a process indicator for an activity intended to reduce the impact of TB among people living with HIV. It reveals the extent of implementation of the recommendation that people living with HIV be screened for TB at diagnosis and at follow-up visits using their previous visit as proxy measure.
Methodology	TB status should be assessed at every visit during the reporting period, recorded ("Yes" if "no signs", "suspect" or "on treatment", and "No" if TB status not assessed) on the patient HIV care/ART card, and transferred onto the pre-ART or ART registers, as appropriate, at all facilities providing routine HIV care.

[21] HIV care includes treatment of HIV, i.e. enrolment in the pre-ART register or in the ART register once started on ART.

Methodology	Enrolled in care includes all those continuing in care and those newly enrolled during the reporting period These data should be analysed and reported, together with other cross-sectional data, at national level. The numerator is taken from the pre-ART and ART registers by counting the number of patients whose TB status was assessed during the reporting period. Any patients who started on ART during the reporting period should be counted in the ART register, not in the pre-ART register. For pre-ART patients, the denominator is those seen for care during the reporting period; for ART patients it is those current on ART during the reporting period. The denominator is taken from the pre-ART and ART registers by counting the number of patients with a visit during the reporting period. This is then recorded on the cross-sectional reporting form. TB and HIV programmes should collaborate to ensure that agreed criteria are used for identifying a TB suspect and that methods of TB screening are consistent with TB control programme protocols.[22]
Periodicity	Data are collected continuously and reported to national level as part of the routine cross-sectional reports. They can be cross-checked during the annual patient monitoring review.
Strengths and limitations	TB status assessment among people living with HIV, followed by prompt diagnosis and treatment, increases the chances of survival, improves quality of life, and reduces transmission of TB in the community. TB status assessment identifies HIV-positive clients who show no evidence of active TB and would benefit from treatment with isoniazid for latent TB infection. The indicator does not measure the quality of intensified TB case-finding nor does it reveal whether those identified as suspects are investigated further or effectively for TB. However, it does emphasize the importance of intensified TB case-finding for people living with HIV at diagnosis and at every contact they have with HIV treatment and care services. Programmes should aim for a high value for this indicator (close to 100%) but should interpret it in conjunction with the values of indicators B.1.2 and B.2.1 to ensure that appropriate action follows the screening process. A low value will demonstrate that Objective B – reducing the burden of TB among people living with HIV – is unlikely to be met.
Importance	Core
Responsibility	NACP
Measurement tools	This indicator is collected from the pre-ART and ART registers and summarized on the cross-sectional quarterly reports. It could also be assessed from a systematic sample of patient HIV care/ART cards during annual patient monitoring reviews.

[22] A suggested method of conducting the screening would be to ask HIV-positive clients whether they are currently on TB treatment. If not, they are then asked about the key symptoms of TB disease (e.g. cough for >2 weeks, persistent fever, night sweats, unexplained weight loss and enlarged lymph nodes). A simple checklist could be used and any positive response would indicate that the individual may be a TB suspect. If on questioning they are defined as a TB suspect (as per national protocols) they should be investigated for TB (or referred to TB service for investigation) and treated appropriately. Those found not to have TB should be offered six months of isoniazid preventive therapy (IPT).

Indicator B.1.2.1 ***Percentage of HIV-positive patients who received TB treatment***	
Definition	Number of adults and children enrolled in HIV care[23] who started TB treatment, expressed as a proportion of adults and children enrolled in HIV care during the reporting period.
Numerator	Number of adults and children enrolled in HIV care who started TB treatment during the reporting period.
Denominator	Number of adults and children enrolled in HIV care during the reporting period.
Purpose	This indicator measures the burden of known TB co-morbidity among people in HIV care. It may be used in drug supply planning for ART drug substitution in people treated for TB.
Methodology	Data for the numerator come from the "TB treatment" column of the pre-ART and ART registers for all those in care during the reporting period, including those continuing in care and those newly enrolled during the reporting period. Among those newly enrolled in HIV care during the reporting period, those on TB treatment at the time of enrolment and those starting treatment during the reporting period should both be included in the numerator. The data needed for this indicator are more difficult to collect where TB diagnosis and treatment are not carried out on the same site as HIV testing or treatment and care. In those circumstances, reliable two-way communication must be established between the TB service and the HIV treatment and care services. For pre-ART patients, the denominator is those seen for HIV care during the reporting period; for ART patients, it is the sum of those retained on treatment at the beginning of the reporting period and those newly enrolled in the programme during the reporting period. The data reported for this indicator should be disaggregated by ART and pre-ART patients. Patients who appear in both the pre-ART and ART registers as having started TB treatment should be counted once as on the ART register. This numerator is used as the basis for the UNGASS core indicator 6 (co-management of tuberculosis and HIV treatment),[24] (See Indicator B.1.2.2) which is: *Numerator*: number of adults with advanced HIV infection who are currently receiving ART in accordance with the nationally approved treatment protocol (or WHO/UNAIDS standards) and who were started on TB treatment (in accordance with NTP guidelines) within the reporting year. *Denominator*: estimated number of incident TB cases in people living with HIV. The estimate for this UNGASS indicator is provided by WHO in its annual *Global tuberculosis control* report. The latest report can be downloaded from the Internet (www.who.int/tb/publications/en/).

[23] HIV care includes HIV treatment, i.e. enrolment in the pre-ART register or in the ART register once started on ART.

[24] http://data.unaids.org/pub/Manual/2007/20070411_ungass_core_indicators_manual_en.pdf

Periodicity	Data are collected continuously and reported quarterly to national level and annually to WHO.
Strengths and limitations	This indicator provides information on the programmatic burden of TB and for requirements of managing co-treatment with TB. It validates the process indicator B.1.1. Low levels of the indicator imply the need to examine whether TB status is being assessed routinely and to cross-check with the local TB programme to see whether HIV-positive TB patients are also being registered on the HIV care registers. Ideally all HIV-positive TB patients on the TB registers should also be registered in HIV/AIDS care (pre-ART and ART), and this can be checked by having a pre-ART or ART number in the TB register. Similarly, all patients registered with TB treatment on the HIV care registers must also be registered in the NTP system (check their registration number). This indicator is important for demonstrating the contribution that collaborative TB/HIV activities can make to increasing TB case-detection rates, thereby reducing the burden of TB in people living with HIV and their communities. Data on trends over time could reveal the need for TB service provision for people living with HIV.
Importance	Core
Responsibility	NACP
Measurement tools	Pre-ART and ART registers. The data are summarized on the quarterly reports.

Indicator B.1.2.2. UNGASS core indicator 6 ***Percentage of estimated HIV-positive incident TB cases that received treatment for TB and HIV***	
Definition	Percentage of estimated HIV-positive incident TB cases that received treatment for TB and HIV.
Numerator	Number of adults with advanced HIV infection who received antiretroviral combination therapy in accordance with the nationally approved treatment protocol (or WHO/UNAIDS standards) and who were started on TB treatment (in accordance with national TB programme guidelines), within the reporting year.
Denominator	Estimated number of incident TB cases in people living with HIV
Purpose	To assess progress in detecting and treating TB in people living with HIV
Methodology	Annual estimates of the number of incident TB cases in people living with HIV in high TB burden countries are calculated by WHO and are available at: http://www.who.int/tb/country/en. Data for this indicator should be disaggregated by sex and by adults (>15 years) and children (<15 years).
Periodicity	Data should be collected continuously at the facility level. Data should be aggregated periodically, preferably monthly or quarterly, and reported annually. The most recent year for which data and estimates are available should be reported here.
Strengths and limitations	Adequate detection and treatment of TB will prolong the lives of people living with HIV and reduce the community burden of TB. WHO provides annual estimates of the burden of TB among people living with HIV, based on the best available country estimates of HIV prevalence and TB incidence. All incident TB cases among people living with HIV should be started on TB treatment and depending on country specific eligibility criteria. Incident TB cases are defined as new cases that have occurred in that year, and specifically exclude latent cases. All or most people living with HIV who have TB should be on ART, depending on local eligibility criteria. TB treatment should only be started in accordance with national TB programme guidelines. This indicator provides a measure of the extent to which collaboration between the national TB and HIV programmes is ensuring that people with HIV and TB disease are able to access appropriate treatment for both diseases. However, this indicator will also be affected by low uptake of HIV testing, poor access to HIV care services and antiretroviral therapy, and poor access to TB diagnosis and treatment. Separate indicators exist for each of these factors and should be referred to when interpreting the results of this indicator. It is important that those providing HIV care and antiretroviral therapy record TB diagnosis and treatment, as this information has important implications for antiretroviral therapy eligibility and choice of antiretroviral regimen. It is therefore recommended that the date of starting treatment is recorded in the antiretroviral therapy register. If possible, the number of patients started on TB treatment among those in HIV care but not yet on antiretroviral therapy should also be reported. This would capture additional cases of TB that are detected and treated among people living with HIV.

Importance	Core
Responsibility	NACP
Measurement tools	Facility antiretroviral therapy registers and reports; programme monitoring tools

B.2 Percentage of new HIV- positive patients starting IPT during the reporting period

Indicator B.2.1 ***Percentage of new HIV-positive patients starting IPT during the reporting period***	
Definition	Number of adults and children newly enrolled in HIV care[25] who are started on treatment for latent TB infection, isoniazid preventive therapy, expressed as a proportion of the total number of adults and children newly enrolled in HIV care during the reporting period.
Numerator	Total number of adults and children newly enrolled in HIV care who start (are given at least one dose of) IPT during the reporting period.
Denominator	Total number of adults and children newly enrolled in HIV care during the reporting period.
Purpose	To ensure that eligible HIV-positive individuals are given treatment for latent TB infection and thus to reduce the incidence of TB in people living with HIV.
Methodology	The data needed for this indicator are collected from pre-ART registers at HIV care service sites. All newly enrolled individuals should be registered on pre-ART registers and provision of IPT should be registered here. Direct registration on ART registers may be part of country adaptations. If, in such adaptations, IPT is prescribed to newly enrolled patients on ART registers, these patients should be included in the denominator. HIV-positive individuals should be screened for TB, as suggested in indicator B.1.1. Those who are found *not* to have evidence of active TB will be offered IPT. All those accepting IPT and receiving at least the first dose of treatment should be recorded. This information is recorded in a column in pre-ART and ART registers. Accurately predicting drug requirements for supply management requires the collection of more detailed information. A pharmacy-based IPT (isoniazid) register should record attendance of clients to collect further drug supplies (usually monthly). From this register, facilities would be able to report the number of new and continuing cases and treatment completion on a quarterly basis. If such information is collected routinely, the indicator of choice would be the number of HIV-positive clients completing treatment of latent TB infection, as a percentage of the total number of HIV-positive clients started on such treatment. From pilot testing sites it is apparent that 10–50% of clients who test HIV-positive can be expected to start IPT; some will not meet the eligibility criteria, some will decline treatment, and some will drop out during the screening process. The proportion likely to start IPT depends on the screening algorithm used (for example, using tuberculin skin test as a screening tool reduces the number who are eligible) and on the type of facility at which HIV diagnosis is made. Among hospital or clinical referrals, more sick patients would be ineligible for treatment of latent TB infection. Higher proportions would be expected from sites linked to PMTCT or stand-alone VCT centres. Most programmes would aim to have more than 60% starting IPT.

[25] HIV care includes HIV treatment, i.e. enrolment in the pre-ART register or in the ART register once started on ART.

Periodicity	Collected continuously and reported and analysed quarterly.
Strengths and limitations	Treatment of latent TB infection will reduce the incidence of TB disease developing in people living with HIV who are infected with TB but have no active TB disease. To include individuals who are given at least one dose is relatively easy, even in resource-limited settings. This information is the minimum necessary to ensure that IPT is being offered to HIV-positive individuals without evidence of active TB. However, unless further data are collected as detailed above, this indicator provides no information on the number of individuals who adhere to, or complete, the IPT course. Programmes may wish to collect more complete data on adherence or completion. These could be taken from a pharmacy IPT register, by undertaking periodic studies, or by having an IPT register. This indicator measures newly registered people living with HIV and started on IPT in the reporting period. Quarterly reporting may miss those who start IPT at a later stage. Annual tallies from programme review can reveal whether people are receiving IPT at a later stage.
Responsibility	NACP and NTP
Measurement tools	Pre-ART register, summarized on the cross-sectional quarterly report. Direct registration on ART registers may be part of country adaptations.

B.3 TB infection control in health-care and congregate settings

Indicator B.3.1 ***Proportion of health-care facilities providing services for people living with HIV that have infection control practices that include TB control***	
Definition	Number of health-care facilities providing, for people living with HIV, services with demonstrable infection control practices that include TB control, expressed as a proportion of the total number of health-care facilities evaluated.
Numerator	Number of health-care facilities providing, for people living with HIV, services with demonstrable infection control practices that include TB control practices consistent with international guidelines.[26]
Denominator	Total number of health-care facilities evaluated. (Also give the total national number of each type of facility to indicate the proportion evaluated.)
Purpose	To ensure that facility-level policy exists to minimize the risk of transmission of TB in health-care settings where people living with HIV are treated, such as primary health-care clinics and hospitals.
Methodology	Facility-level review of written infection control policy with yes/no answers to the following: • Is there a written infection control plan? • Is there a person responsible for implementing TB infection control? • Is the waiting area well ventilated (e.g. windows and doors open)? • Are TB suspects identified on arrival at the facility and separated from other patients? • Are TB cases among health-care workers routinely monitored and reported? A positive response to all questions is required for a facility to be identified as having a TB infection control policy that is consistent with international guidelines. A positive answer to the question asking for a written infection control plan requires that a hard copy of the plan be available. Documentation for other components should also be sought. In generalized epidemics, all health-care facilities provide HIV care and would be included, while in low-HIV settings only care facilities providing HIV care would be included. This indicator and the methodology can also be adapted for prisons, refugee camps, military barracks and other congregate settings.
Periodicity	Collected annually from each facility at the time of supervisory visits and/or external review of TB/HIV activities or TB and HIV programme reviews.

[26] *Guidelines for the prevention of tuberculosis in health-care facilities in resource-limited settings*. Geneva, World Health Organization, 1999 (WHO/CDS/TB/99.269).

Tuberculosis infection control in the era of expanding HIV care and treatment (Addendum to WHO guidelines for the prevention of tuberculosis in health-care facilities in resource-limited settings).

Strengths and limitations	The existence of a written infection control policy that addresses TB and is consistent with international guidelines is the first basic step in ensuring TB infection control in health-care and congregate settings where HIV prevalence is high. However, the existence of a policy does not mean that it is effectively implemented. Further inquiry will be needed to establish whether the infection control policy is implemented and adhered to. Analysis of policy involves subjective judgement, which can limit its use in cross-national comparisons and for capturing trends over time. This indicator goes a step beyond measuring the simple existence of an infection control policy by defining standards that must be met in order for there to be an acceptable practice that addresses the issue of control of TB infection in health-care and congregate settings with a high HIV prevalence according to international guidelines – thus eliminating some, though not all, subjective judgement.
Responsibility	NACP
Measurement tools	Facility review checklist

Indicator B.3.2 ***Proportion of health-care workers, employed in facilities providing care for people living with HIV, who developed TB during the reporting period***	
Definition	Number of health-care workers, employed in facilities providing care for people living with HIV, who develop TB in one year, expressed as a proportion of the total number of health-care workers employed in facilities providing care for people living with HIV during that same year.
Numerator	Number of health-care workers employed in HIV care facilities who develop TB in one year.
Denominator	Total number of health-care workers employed in HIV care facilities during that same year.
Purpose	To measure the incidence of TB among health-care workers over time as a measure of the impact of infection control measures on health workers.
Methodology	In countries with a generalized HIV epidemic, all health-care facilities will be providing HIV care. The definition of health-care worker is context-specific: as well as medical and nursing staff, it may include those who have patient contact and/or whose work is within the facility walls, e.g. domestic staff. It is unlikely to include gardeners, security staff, maintenance staff, etc., who are likely to have little prolonged exposure to TB. The issue here is risk of exposure to TB. The number of health-care workers starting TB treatment during the reporting period is used as the numerator. Facility-level employment records and staff health records with age and sex details should be available for all workers working in HIV care facilities, and the relevant summary data from each clinic/district should be aggregated to the national level where this indicator should be compared with TB rates in the general population (after direct age and sex standardization).
Periodicity	Collected annually from each facility.
Strengths and limitations	This indicator can be used to reveal changes in TB rates in health workers as a means of monitoring the impact of infection control policies[27] and highlights a very important potential drain on scarce human resources for health. It can thus provide good information for use in advocacy for better working conditions for health staff and better infection control. The numbers of TB cases reported by each facility are likely to be low even if incidence rates are very high and may give rise to “small number” problems that make meaningful comparisons at subnational/local level problematic. Trends in this indicator should be monitored. This indicator can be disaggregated by sex and age standardized against population at national level. The HIV status rates among health workers compared with the general population may also be a factor in differential TB rates. It may be useful to assess TB rates by different cadres of staff, e.g. laboratory, care giving. Concerns are likely to be raised about confidentiality and special efforts must be made to ensure protection of staff data.
Responsibility	NACP
Measurement tools	Facility health worker staffing and occupational health records.

[27] Harries AD et al. Tuberculosis in health care workers in Malawi. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 1999, 93(1):32–35.

Harries AD et al. Preventing tuberculosis among health workers in Malawi. *Bulletin of the World Health Organization*, 2002, 80(7):526–531.

Objective C

C. To reduce the burden of HIV in TB patients
C.1 HIV testing and counselling C.2 HIV prevention methods C.3 Co-trimoxazole preventive therapy C.4 HIV care and support C.5 Antiretroviral therapy

C.1 Provision of HIV testing and counselling

Indicator C.1.1 ***Proportion of TB patients with known HIV status***	
Definition	Percentage of TB patients who had an HIV test result[28] recorded in the TB register.
Numerator	Number of TB patients registered during the reporting period who had an HIV test result[28] recorded in the TB register.
Denominator	Total number of TB patients registered during the reporting period.
Purpose	This indicator measures the HIV status of TB patients. Knowledge of HIV status enables HIV-positive TB patients to access the most appropriate HIV prevention, treatment, care and support services. Trends over time demonstrate progress towards national and international targets. The indicator is an additional recommended UNGASS indicator (6) for national AIDS programmes.[29]
Methodology	The numerator should include all TB patients previously known to be HIV-positive (e.g. documented evidence of enrolment in HIV care) or with a negative HIV result from previous testing that was acceptable to the clinician (e.g. done in the past 3–6 months in a reliable laboratory). All TB patients with unknown HIV status should be offered a provider-initiated HIV test. A referral system may need to be established so that the TB control programme records when a TB patient is referred for an HIV test and receives the result. TB patients should ideally be tested at the start of TB treatment so that they can benefit from appropriate care throughout their treatment. However, a recording and reporting system should be able to capture these tests otherwise the total number of TB patients knowing their HIV status will be underreported. This indicator measures the ability of HIV and TB services ability to ensure that the HIV status in people with HIV and TB is known. A high proportion of TB patients knowing their status provides a sufficiently robust estimate of the true HIV prevalence among TB patients for surveillance purposes. It also forms the basis for more in-depth prevention efforts (e.g. condoms, partner testing).

[28] This should include all TB cases previously known to be HIV-positive or with a negative HIV result from previous testing that was acceptable to the clinician (e.g. done in the past 3–6 months in a reliable laboratory).

[29] *Core indicators for national AIDS programmes: guidance and specifications for additional recommended indicators*. Geneva, Joint United Nations Programme on HIV/AIDS, 2008 (UNAIDS/08.26E).

Periodicity	Data are recorded continuously and reported quarterly at the time of reporting TB case-finding. Additional reporting at the time of the TB treatment outcome report allows HIV results to be recorded at any time during treatment.
Strengths and limitations	HIV infection rates are higher among TB patients than in the general population. Knowledge of HIV status can help promote safer behaviour to reduce HIV transmission and improve access to appropriate care for TB patients to reduce stigma. Health-care workers who know the HIV status of their patients at the start of TB treatment are able to provide the most appropriate treatment, care and support. A high value for the indicator value suggests good referral from HIV care sites or a high uptake of HIV testing at TB treatment sites – both signs that the TB/HIV collaboration system as a whole is working well. A low value suggests problems with HIV testing uptake at the start of TB treatment and late detection of HIV, but provides no indication of where the problem lies. The indicator gives no information on whether a patient knows his or her status or has received appropriate pre- or post-test counselling, which is crucial if behaviour change is to be achieved to reduce HIV transmission.
Responsibility	NTP
Measurement tools	Facility TB registers and quarterly case-finding reports. Countries may also wish to record this during quarterly TB treatment outcome analysis to include late HIV tests.

Indicator C.1.2.1 ***Proportion of all registered TB patients who had documented HIV status recorded who are HIV-positive***	
Definition	Number of registered TB patients with documented HIV status on TB register who are HIV-positive, expressed as a proportion of the total number of all registered TB patients with documented HIV status over the reporting period.
Numerator	Total number of all TB patients registered during the reporting period with documented HIV-positive status.
Denominator	Total number of TB patients registered during the reporting period with documented HIV status.
Purpose	To assess the prevalence of HIV among TB patients. Measuring the proportion of HIV-positive TB patients gives important information for targeting of resources, strategic planning of activities, and monitoring the effectiveness of HIV prevention interventions over time.
Methodology	Documentation of a positive HIV status is obtained from HIV test results. The data for this indicator should include all those TB patients previously known to be HIV-positive (documented evidence of enrolment in HIV care) or with a previous negative HIV result that was acceptable to the clinician (e.g. done in the past 3–6 months in a reliable laboratory). HIV status will influence patient care plans (e.g. partner testing, referral to support group for people living with HIV, CPT, ART). The risk of ongoing HIV transmission can be reduced with appropriate post-test counselling. Patient information, including HIV test results, should be accessible only to health-care staff directly responsible for an individual's care. Confidentiality is the responsibility of facility-level staff and the district TB coordinator. HIV status can be recorded in facility and district TB registers as these already contain patient-specific health information. The confidentiality of patient data that reveal HIV status must be maintained. The number of new smear-positive TB patients tested for HIV who are found to be HIV-positive is also reported as a subset of these data on the WHO-recommended quarterly case-finding forms.[30]
Periodicity	Recorded continuously and reported and analysed quarterly at the time of TB case-finding. Additional reporting as part of the quarterly report on TB treatment outcomes allows for HIV testing to take place and results to be recorded at any time during treatment.

[30] The proportion of HIV-positive cases among new sputum smear-positive cases is a very specific indicator, includes only definitive TB diagnoses, and allows information on HIV prevalence in smear-positive cases to be compared.

Strengths and limitations	This indicator will measure the proportion of TB patients with known HIV test results who test HIV-positive. This defines an important population for specific interventions aimed at reducing the burden of HIV among TB patients and their communities, such as CPT and ART. It will be used as the denominator for indicators that measure the uptake of these interventions (see indicators C.3.1 and C.5.1). A high value relative to the national average may suggest that true HIV prevalence among TB patients is higher in that particular area or that only patients with a higher risk of HIV infection are encouraged to have a test. Any variation from expected results should prompt further investigation. The value of the indicator may provide a robust estimate of true HIV prevalence among TB patients[31] if a high proportion of TB patients undergo HIV testing and may back up surveillance data on HIV prevalence in the general population obtained from other sources. This information is useful for raising political and professional awareness of HIV-related TB, targeting resources and planning activities. The indicator does not capture whether patients are made aware of their HIV status or are given post-test counselling.
Responsibility	NTP. NTP staff may have to obtain HIV test results outside the TB service before submitting quarterly reports.
Measurement tools	These data, obtained from TB registers, are summarized in quarterly case-finding reports. They data may also be collected in quarterly treatment outcome reports so that late testing data are captured and included in the denominator data for CPT and ART provision.

[31] Further detail on HIV surveillance in TB patients can be found in *Guidelines for HIV surveillance among tuberculosis patients*, 2nd ed. Geneva, World Health Organization, 2004 (WHO/HTM/TB/2004.339; WHO/HIV/2004.06; UNAIDS/04.30E).

Indicator C.1.2.2 ***Case-detection rate of TB patients with documented HIV-positive status***	
Definition	Number of TB patients registered with documented HIV status on TB register who are HIV-positive, expressed as a proportion of HIV-positive TB patients estimated to exist countrywide each year.
Numerator	Total number of all TB patients registered over the reporting period with documented HIV-positive status.
Denominator	Estimated number of incident TB cases in people living with HIV.[32]
Purpose	This case-detection indicator measures the extent to which HIV-positive TB cases are detected by national TB programmes. This allows programmes to assess their case-finding of HIV-positive TB patients and to focus their case-finding efforts if this indicator is low. TB programmes would ensure that the HIV status of all registered TB patients is known and that other causes of low TB case-detection by full implementation of the Stop TB Strategy are addressed. Low case-finding in countries where HIV is concentrated in populations with increased HIV risk (such as drug users and sex workers) may suggest that TB and HIV services are not sufficiently available to these populations.
Methodology	Documentation of a positive HIV status is obtained either from the test result or from enrolment of the TB patient in HIV care. Estimated numbers of incident TB cases living with HIV are produced by WHO for national level. This indicator should be applied only at national level or in exceptional circumstances where subnational estimates for incident TB cases in people living with HIV have been made. Country-specific annual estimates of the number of incident TB cases in people living with HIV are calculated by the TB Monitoring and Evaluation unit of WHO using the best available data and are published in the annual report on global TB control. In countries where there is no direct testing or survey data, WHO currently uses an indirect measurement approach, making assumptions based on the country HIV prevalence data from UNAIDS multiplied by an incidence rate ratio, i.e. the TB incidence rate in HIV-positive people divided by the TB incidence rate in HIV-negative people based on a review (updated periodically) of the literature. The details of this methodology are further explained in WHO's annual global TB control report. More precise estimates of these measures are achieved when countries perform routine testing of HIV in TB patients.
Periodicity	Data should be collected continuously at the facility level. Data should be aggregated quarterly and reported annually. The most recent year for which data and national estimates are available should be reported on.

[32] The estimate for this indicator is provided by WHO in its annual report on global TB control. The latest (2009) report can be downloaded from the Internet at www.who.int/tb/publications/en/

Strengths and limitations	This indicator allows case-finding of diagnosed HIV-positive TB patients to be monitored. Like all other case-detection indicators, its limitation is the uncertainty of the estimate. Estimates of incident TB cases in people living with HIV tend to be more precise in countries where these have been informed by national data obtained mainly by HIV testing of TB patients, or by sentinel or periodic surveillance.
Responsibility	*NTP*. NTP staff will have to follow up on the results of TB patients referred for HIV testing outside the TB service before submitting quarterly returns.
Measurement tools	*Numerator*. Facility TB registers and quarterly case-finding reports; in addition, countries may wish to record this indicator as part of quarterly TB treatment outcome analysis to include the data of those who are HIV-tested later during treatment. *Denominator*. Country-specific annual estimates of the number of incident TB cases in people living with HIV are calculated by WHO and are available on the Internet: www.who.int/tb/country/en

C.2 Promotion and provision of HIV prevention methods for TB patients

Indicator C.2.1 ***Availability of free condoms at TB services***	
Definition	Number of TB facilities where free condom distribution is practised and condoms are available, expressed as a proportion of all TB facilities.
Numerator	Total number of TB facilities (any health facility where TB patients are managed) where free condoms are available (in stock) and accessible.
Denominator	Total number of TB facilities evaluated. (Also give the total number of TB facilities nationally to indicate the proportion evaluated.)
Purpose	To monitor commitment and capacity of programmes at facility level to promote HIV prevention among TB patients.
Methodology	Ideally, data on this indicator should be collected on all supervisory visits made by the district TB manager and thus be available for all TB facilities. The indicator requires collection of information only on the presence of condoms at TB facilities, not on the number of condoms distributed.
Periodicity	Collected annually, at the time of supervisory visits and/or external review of TB control programmes.
Strengths and limitations	Condoms are a simple, cheap and effective tool for preventing HIV transmission and as such should be made freely available for use by all groups at risk of HIV infection, including TB patients, especially in settings where the HIV epidemic is driving the TB epidemic. Availability of condoms at a facility is simple to measure and gives some indication of commitment at facility level to HIV prevention among TB patients. The absence of free condoms may indicate a failure of distribution either locally or nationally or a lack of commitment at facility level to maximizing HIV prevention opportunities. However, the indicator will give no information on why condoms are not available: the reasons for this will require further investigation. The availability of free condoms at a facility gives no indication of how many are distributed or whether the condoms are used appropriately or HIV infections are prevented. It provides no information about the ability of health-care workers to encourage safe sexual practices or a reduction in other risk practices among TB patients.
Responsibility	NTP
Measurement tools	Facility review checklist

Note: In some settings it may be appropriate to create additional indicators (using the above indicator as a framework) for other HIV prevention interventions within the TB service; for example, where injecting drug use is a common mode of HIV transmission, it may be useful to measure the frequency of safe needle exchange services available at TB facilities.

C.3 Co-trimoxazole preventive therapy during TB treatment

Indicator C.3.1 ***Proportion of HIV-positive TB patients who receive CPT***	
Definition	Number of HIV-positive TB patients who are started on or continue previously initiated CPT, during TB treatment, expressed as a proportion of all HIV-positive TB patients registered over the reporting period.
Numerator	Number of HIV-positive TB patients, registered over the reporting period, starting or continuing CPT treatment during their TB treatment.
Denominator	Total number of HIV-positive TB patients registered during the reporting period.
Purpose	To monitor commitment and capacity of programmes to provide CPT to HIV-positive TB patients. It is important for programmes to know the proportion of HIV-positive TB patients who receive this potentially life-saving therapy.
Methodology	The numerator should include TB patients who may have been identified as HIV-positive and who were started on CPT before being diagnosed with TB. To be able to include all HIV-positive TB patients who start CPT during their TB treatment, it will be necessary to assess and report the numerator at the end of treatment. These data are reported along with the quarterly cohort outcome data. The use in the definition of the clarifying statement – that patients be given at least one dose of CPT – is intended to capture all patients who have been assessed and started on treatment. It does not imply that one dose of CPT is sufficient. Where CPT is provided through HIV care or other services, a mechanism should be established to ensure that this information is documented by the NTP.
Periodicity	The data for this indicator should be collected continuously and reported and analysed quarterly at the end of TB treatment along with the outcome of treatment. In addition, countries may wish to report the provision of CPT as part of quarterly case-finding reports, although this is unlikely to capture data on all those who end up on CPT.
Strengths and limitations	CPT reduces morbidity and mortality among HIV-positive TB patients. This indicator measures the degree to which TB services are able to ensure that HIV-positive TB patients receive CPT. It will not provide information on when CPT is started during TB treatment or on adherence to treatment. NTPs may also choose to report on CPT adherence although this is considered to be a lower priority for programmes than TB treatment. CPT uptake will be affected by drug availability and health worker commitment to CPT provision for HIV-positive TB patients.
Responsibility	NTP
Measurement tools	Both numerator and denominator are obtained from TB registers and should be summarized on the quarterly TB treatment outcome reports. Countries may also report the provision of CPT in quarterly case-finding reports.

C.4 Access to HIV care and support during TB treatment

Indicator C.4.1 ***Proportion of HIV-positive TB patients enrolled in HIV care services during TB treatment***	
Definition	Number of HIV-positive TB patients enrolled in HIV care services during TB treatment, expressed as a proportion of the total number of HIV-positive TB patients.
Numerator	Number of HIV-positive TB patients, registered over the reporting period, who are enrolled in HIV care services during their TB treatment.
Denominator	Total number of HIV-positive TB patients registered during the reporting period.
Purpose	Process indicator to measure commitment and capacity of TB services to ensure that HIV-positive TB patients access HIV care and support services.
Methodology	Pre-ART and ART register numbers from HIV care registers are recorded on TB patient cards in the latest TB recording and reporting forms revision.[33] It will be relatively straightforward for a programme to also record this in a modified TB register by use of a checkbox. If this modification is made in the TB register, the numerator for the indicator will be the number of TB patients during the reporting period who are registered in HIV care, and the denominator will be all TB patients who are documented as HIV-positive. HIV diagnosis may take place at any time during TB treatment – and the need for referral to specific services may also arise at any time during treatment. It is thus important that the information for this indicator be collected and reported at the end of treatment with the quarterly cohort outcome data. Data can be collected as a single indicator, i.e. number of HIV-positive TB patients referred to any HIV care/support service during their TB treatment.
Periodicity	Collected continuously and reported quarterly with data on cohort outcomes.
Strengths and limitations	Wherever TB patients are encouraged to undergo HIV testing, new cases of HIV infection will be identified. In addition to appropriate post-test counselling, it is important that TB patients newly diagnosed with HIV infection are able to access the full range of care and support services that are available for people living with HIV, as stipulated in local and national HIV policy. This indicator aims to ensure that TB health-care workers monitor continuity of care for HIV-positive TB patients. This indicator captures only the enrolment step in the referral process and gives no information on whether patients subsequently attend the service or whether they receive appropriate care and support if they do attend. Low rates of enrolment may indicate a lack of services in some areas or lack of engagement with this among TB staff. In settings where HIV and TB services are fully integrated and provided within the same site, it will be simple to record this.
Responsibility	NTP
Measurement tools	Modified TB register

[33] *Revised TB recording and reporting forms and registers – version 2006. Geneva, World Health Organization, 2006* (WHO/HTM/TB/2006.373; available at: www.who.int/tb/dots/r_and_r_forms/en/index.html).

C.5 Access to antiretroviral treatment

Indicator C.5.1 ***Proportion of HIV-positive registered TB patients given ART during TB treatment***	
Definition	Number of HIV-positive TB patients who are started on or continue previously initiated ART during their TB treatment, expressed as a proportion of all HIV-positive TB patients. registered over the reporting period.
Numerator	All HIV-positive TB patients, registered over the reporting period, who receive ART (are started on or continue previously initiated ART).
Denominator	Total number of HIV-positive TB patients registered during the reporting period.
Purpose	Outcome indicator to measure commitment and capacity of TB services to ensure that HIV-positive TB patients are able to access ART.
Methodology	Data for this indicator can be captured in the TB register. The data should be reported at the completion of TB treatment in order to include all TB patients started on ART at any time over the course of their treatment. In settings where TB patients are referred to HIV or other care services to be assessed and started on ART, a system must be established to ensure that the TB programme is informed of the outcome of the referral, i.e. whether or not TB patients are started on ART or not, and that this information is recorded in a modified TB register or TB/HIV register. This is important not only for programme management but also for individual patient care. TB programme personnel need to be aware of a TB patient starting on ART so that they can manage drug reactions and interactions appropriately. TB patients may be started on ART at any time during their TB treatment. The start of ART may be delayed because of delay in HIV testing or to reduce the risk of drug interactions occurring in the intensive phase. The data collection methods should be able to capture ART treatment starting at any time during TB treatment.
Periodicity	Collected continuously and reported with the quarterly cohort outcome data.

Strengths and limitations	ART significantly improves the quality of life, reduces morbidity, and enhances the survival of people with advanced HIV infection or AIDS. HIV-positive TB patients are one of the largest groups already in contact with the health service who are likely to benefit from ART, and efforts should be made to identify and treat those who are eligible. This indicator measures the degree to which ART has become a component of the package of care offered to HIV-positive TB patients and provides a measure of the accessibility of ART to HIV-positive TB patients, drug availability, the degree to which health-care providers encourage ART as a part of routine care, and the success of TB and ART health services in referring, managing and tracking registered TB patients eligible for ART (i.e. the strength of the referral process). It does not measure whether patients are treated correctly with an appropriate regimen, at what point during TB treatment patients are started on ART, whether they adhere to therapy, or the quality of patient monitoring or follow-up. It also cannot measure the impact of ART among persons who are treated. The expected values for the indicator will vary with national eligibility criteria for ART and according to whether CD4 cell counting is available. Countries would need to determine their own targets for this indicator based on eligibility criteria and the stage of disease at which most patients present. In the absence of CD4 cell counts, it would be expected that most HIV-positive TB patients would be started on ART, with the exception of those who decline or who, for some other reason, are not eligible to start ART. Intra- and inter-country comparisons using this indicator need to be interpreted with caution.
Responsibility	NTP
Measurement tools	Both numerator and denominator are obtained from TB registers and should be summarized on the quarterly TB treatment outcome reports. Countries may also report the provision of ART in quarterly case-finding reports.

6. Indicator disaggregation by age and sex

Rationale

For many years, children with TB were excluded from routine recording and reporting practices and little was known at national or international level about childhood burden of disease. Childhood TB is usually acquired from parents, often the mother. In countries with a high HIV burden. the burden of TB among HIV-infected women of childbearing age has been growing, and this in turn has resulted in an increased risk of both TB and HIV infection in children. Children make up about 10–15% of the annual caseload of tuberculosis. In response to this significant burden of disease, recent WHO guidelines have stipulated that all NTPs must report on childhood TB cases, preferably in two age bands: under 5 years and 5–14 years.

The incidence of TB in HIV-infected children is 20 times higher than that in uninfected children, and there is high associated TB/HIV-related morbidity and mortality. Collaborative activities to reduce the burden of TB in HIV-infected children and treat HIV in children coinfected with TB are the same as for adults. Nevertheless, in monitoring these collaborative activities it is important to disaggregate by age into children (aged 0–14 years) and adults. First, this is in alignment with recent WHO guidelines for national TB programmes.[34] Second, some of the details regarding counselling and HIV testing, use and dosage of co-trimoxazole and isoniazid, and treatment with antiretroviral drugs are different in adults and children, and rational planning of logistics, drugs and commodities requires disaggregated data.

Similarly, HIV-related TB is being increasingly reported in women, to the extent that, in some countries of southern Africa, these women form a growing proportion of new smear-positive cases reported to WHO. It is important to monitor this "feminization" of the TB epidemic in the face of HIV.

Recommendation

Wherever possible, all indicators relating to TB/HIV collaborative activities should be disaggregated by age into adult and child (aged 0–14 years) and by sex (male and female).

[34] *Revised TB recording and reporting forms and registers – version 2006*. Geneva, World Health Organization, 2006 (WHO/HTM/TB/2006.373; available at: www.who.int/tb/dots/r_and_r_forms/en/index.html).

7. Indicator prioritization

Many countries are now moving towards harmonizing their health indicators through health management information systems (HMIS). Usually only one or two TB and HIV indicators may be considered for inclusion in countries; the indicators listed in Table 3 are recommended as priority indicators.

Table 3. Priority indicators for HMIS

Indicator	Rationale for choice of indicator
Indicator B.1.2.1 TB treatment for people living with HIV in care	This indicator is most important as undiagnosed TB in HIV care is invariably fatal. Additionally, prompt identification and treatment helps with TB infection control for partners, family, other patients and health-care workers. Emphasis on measuring trends in the detected burden of TB among those registered in HIV care will help to ensure that TB screening is carried out on all in HIV care.
Indicator C.1 HIV testing of TB patients	This is the gateway for HIV prevention and provision of ART to reduce transmission and mortality/morbidity This indicator also provides early warning of an approaching HIV epidemic and gives an indication of the burden of disease among those with TB
Indicator C.5.1 ART in TB patients with HIV	This indicator is a measure of the availability of both TB and HIV treatment services to patients. Services located at the same site or close to one another will result in higher ART uptake among TB patients diagnosed with HIV.

8. Quality assurance indicators for TB and HIV

Increasingly, indicators for the evaluation of the quality of population-based and personal health services are being requested. These indicators should ensure that there is improving user satisfaction and that decision-making in public health at the subnational level ensures improved quality in personal and population-based health services.

This guide recommends that key quality improvement indicators should include the following, all of which measure the quality of care received by patients with TB/HIV:

Indicator B 1.1

TB status assessment in people living with HIV in care

Indicator B.1.2.1

TB treatment for people living with HIV in care

Indicator C.1

HIV testing of TB patients

Indicator C.5.1

ART in TB patients with HIV

Additional resources

Monitoring the Declaration of Commitment on HIV/AIDS. Guidelines on construction of core indicators: 2010 reporting. Geneva, Joint United Nations Programme on HIV/AIDS, 2007 (UNAIDS/09.10E / JC1676E).

http://data.unaids.org/pub/Manual/2009/2009_ungasscoreindicators2009_en.pdf

Monitoring and evaluation toolkit: HIV, tuberculosis and malaria and health systems strengthening. Part 1: The M&E system and Global Fund M&E requirements, 3rd ed. Geneva, Global Fund to Fight AIDS, Tuberculosis and Malaria, 2009 (available at: www.theglobalfund.org/documents/me/M_E_Toolkit.pdf).

Revised TB recording and reporting forms and registers – version 2006. Geneva, World Health Organization, 2006 (WHO/HTM/TB/2006.373; available at: www.who.int/tb/dots/r_and_r_forms/en/index.html).

WHO HIV/AIDS Monitoring and evaluation publications: http://www.who.int/hiv/pub/me/en/

Millennium goals and targets: *http://www.undp.org/mdg/basics.shtml*

MEASURE Evaluation web site: www.cpc.unc.edu/measure/publications/

PEPFAR Strategic Information/Monitoring and Evaluation Field Office web site: www.globalhivevaluation.org/

The use of indicators for communicable disease control at district level. Geneva, World Health Organization, 2001 (WHO/CDS/TB/2001.289; available at: http://whqlibdoc.who.int/hq/2001/WHO_CDS_TB_2001.289.pdf).

Rehle T et al., eds. *Evaluating programs for HIV/AIDS prevention and care in developing countries: handbook for program managers and decision makers*. Arlington, VA, Family Health International, 2001.

Guidelines for HIV surveillance among tuberculosis patients, 2nd ed. Geneva, World Health Organization, 2004 (WHO/HTM/TB/2004.339; WHO/HIV/2004.06; UNAIDS/04.30E).

PEPFAR Next Generation Indicators Reference Guide, version 2.1 (available at http://www.pepfar.gov/guidance/indicator/index.htm; accessed May 2009).

GLOSSARY OF M&E TERMS Prepared by the Evaluation Technical Working Group of the Joint United Nations Programme on HIV/AIDS (UNAIDS) Monitoring and Evaluation Reference Group June 2008 http://www.globalhivmeinfo.org/DigitalLibrary/Digital Library/Glossary of Monitoring and Evaluation Terms.doc

Annex 1 Brief overview of, and rationale for, monitoring and evaluation

Monitoring and evaluation: what is it and why is it important?

M&E plays an important role in the management of health programmes, ensuring that the resources going into a programme are being utilized, services are being accessed, activities are occurring in a timely manner, and expected results are being achieved. This management function facilitates the most effective and efficient use of human and financial resources for the achievement of maximum health benefit for the population served – which is especially relevant in areas where resources are limited.

Monitoring is the **routine** tracking of service and programme performance using input, process and outcome information collected on a regular and ongoing basis from policy guidelines, routine record-keeping, regular reporting and surveillance systems, and occasional health facility observations and client surveys. This information is used to assess the extent to which a policy or programme is achieving its intended activity targets on time. In a well-designed M&E system, monitoring will contribute greatly to evaluation.

Evaluation is the **episodic** assessment of results that can be attributed to programme activities; it uses monitoring data and often indicators that are not collected through routine information systems. Evaluation allows the causes of failure to achieve expected results on schedule to be explored and any necessary mid-course corrections to be applied. **Process evaluation** assesses progress in programme implementation and coverage. **Outcome and impact evaluation** measures the effect of programme activities on the target population.

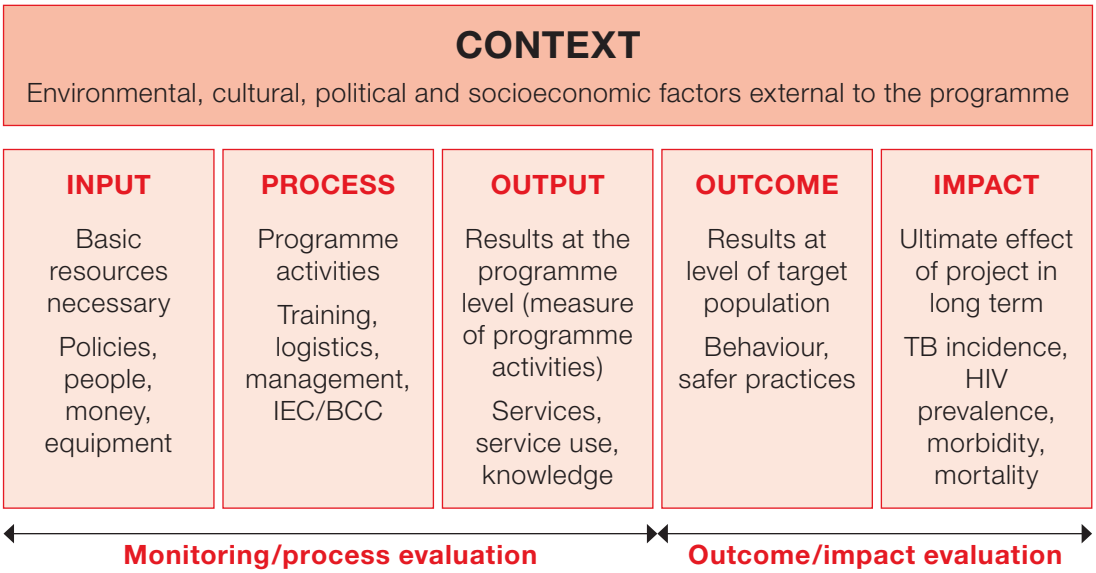
M&E is generally planned and performed by staff in the TB and HIV programmes or by general health service staff, but in some instances – particularly for a programme evaluation or review – external consultants or experts are brought in to help.

The monitoring and evaluation framework

The elements of M&E described above are brought together into a framework that forms the basis for a complete M&E plan. The framework is a visual concept of how the elements of the programme fit together. The most commonly used framework for the selection of indicators for M&E is the input–process–output–outcome–impact framework illustrated in Figure A1.1.

For a programme or project to achieve its goals, **inputs**, such as money, staff time and policies, must result in **outputs**, such as drug stocks and supply systems, new or improved services, trained staff. These outputs are often the result of specific **processes,** such as training sessions for staff, which are key activities aimed at achieving the outputs. If these outputs are well designed and reach the populations for which they were intended, the programme or project is likely to have positive short-term effects or **outcomes**, such as an increased number of people living with HIV being screened for TB symptoms or of TB patients being tested for HIV. These positive short-term outcomes should lead to changes in the longer-term **impact** of programmes, reflected in fewer new cases of TB or HIV. (More detailed definitions are provided in the Glossary, page vi.)

Figure A1.1 Monitoring and evaluation framework



Monitoring and evaluation demonstrate the impact of programme effort and resources on achieving programme goals, providing managers and decision-makers at all levels with the relevant information for action, i.e. policy formulation, priority setting, strategic planning, design and implementation of programmes and projects, and the allocation or reallocation of resources. An abundance of information of varying quality is often available from M&E. Information must be carefully selected for direct relevance to the task at hand and must be analysed and presented in an accessible, comprehensible, consistent and coherent form that is appropriate for each audience, e.g. policy-makers, the general public. Broad dissemination of appropriate M&E results can foster transparency and accountability, as well as promote a learning culture with dissemination and replication of best practice. This is particularly relevant to a new strategy of which experience is limited.

Steps in developing an M&E plan

1. Identifying goals and objectives of the programme
2. Developing an M&E framework
3. Defining and selecting relevant indicators
4. Identifying sources and methods of data collection
5. Developing an M&E implementation plan

The independent M&E systems that exist for TB and HIV control programmes may not adequately capture the programme effort expended on collaborative TB/HIV activities or may result in duplication of effort, conflicting data collection requirements and difficulties in evaluating the performance of collaborative activities as a whole. Consensus is needed between both programmes on data requirements, indicator definitions and allocation of responsibility to ensure effective M&E of collaborative TB/HIV activities. A core group of simple indicators, including those to trigger actions, is essential for the programmes to work effectively together.

Indicators

An indicator is a variable used to measure progress towards the stated goals, objectives and targets of the programme, allowing managers to assess progress towards benchmarks. It is a specific measure of programme performance that is tracked over time by the monitoring system. The value of an indicator in itself is usually of limited use; however, unexpected values or changes in the indicator value suggest the need for further investigation.

Indicators are usually selected and targets set during the process of programme planning. The choice of indicators will also depend on what services are being offered and the capacity of programmes to carry out M&E. Table A1.1 lists standard selection criteria for judging the relevance of specific indicators.

Table A1.1 Criteria for indicator selection[a]

Valid	Indicators should measure the condition or event they are intended to measure
Reliable	Indicators should be objective and produce the same results when used more than once to measure the same condition or event, all things being equal (for example, using the same methods/tools/ instruments)
Specific	Indicators should measure only the conditions or events they are intended to measure
Sensitive	Indicators should reflect changes in the state of the conditions or events under observation
Operational	Indicators should be measured with definitions that are developed and tested at the programme level and in accordance with reference standards
Affordable	The costs of measuring the indicators should be reasonable
Feasible	It should be possible to carry out the proposed data collection under normal programme conditions
Measurable	Indicators can be objectively measured
Comparable	Indicators should be comparable over time and across different geographical sites

[a] Adapted from *Development of health programme evaluation: report by the Director-General*. Geneva, World Health Organization, 1978 (document A31/10).

Annex 2 Checklist for country profile and situational analysis

Disease-specific information

- Burden of HIV.
- Burden of TB.
- DOTS coverage.
- TB case management and outcome.
- ART coverage.

Evaluation of the mechanisms for TB/HIV activity collaboration

- National TB and HIV policy addresses links between TB and HIV.
- Existence of a coordinating body for TB/HIV activities effective at all levels.
- Existence of joint planning at national level for collaborative TB/HIV activities between the NTP and the NACP.
- Presence of joint TB/HIV IEC materials in TB and HIV services.
- Presence of an integrated national M&E system for collaborative TB/HIV activities that informs annual NTP and NACP planning cycles and their mid-term (3–5-year) plans.

Evaluation of existing country surveillance and monitoring systems

- System for HIV surveillance in TB patients:
  - routine HIV testing;
  - sentinel surveillance;
  - periodic special surveys.
- System for monitoring the incidence of TB among people living with HIV.
- System for linkage between HIV and TB reporting databases.

Geographical coverage of collaborative TB/HIV activities

- Activities to reduce the burden of TB in people living with HIV.
- Availability of HIV testing and counselling at TB diagnostic and treatment centres.
- Activities to reduce the burden of HIV in TB patients.
- Services for those attending for HIV testing and counselling or for HIV care and support.
- Complete package of collaborative TB/HIV activities.

Survey of TB and HIV stakeholders

- Funding TB/HIV activities.

Summary of indicators measured in HIV care settings by the HIV control programme

Indicator and definition	What to measure	Data sources	Level	Periodicity
Indicator B.1.1 Number of adults and children enrolled in HIV care whose TB status was assessed and recorded during their last visit during the reporting period, expressed as a proportion of all adults and children enrolled in HIV care and seen for care in the reporting period.	*Numerator*: Number of adults and children enrolled in HIV care1 whose TB status was assessed and recorded during their last visit during the reporting period. *Denominator*: Total number of adults and children enrolled in HIV care and seen for care in the reporting period.	HIV care registers: both pre-ART and ART registers	National, regional, district, facility	Continuous data collection; quarterly reports
Indicator B.1.2.1 Number of adults and children enrolled in HIV care who startedTB treatment, expressed as a proportion of adults and children enrolled in HIV care during the reporting period.	*Numerator*: The number of adults and children in enrolled in HIV care who started TB treatment during the reporting period. *Denominator*: Number of adults and children enrolled in HIV care during the reporting period.	HIV care registers: both pre-ART and ART registers	National, regional, district, facility	Continuous data collection; quarterly reports
Indicator B.1.2.2 Percentage of estimated HIV-positive incident TB cases that received treatment for TB and HIV.	*Numerator*: Number of adults with advanced HIV infection who received antiretroviral combination therapy in accordance with the nationally approved treatment protocol (or WHO/UNAIDS standards) and who were started on TB treatment (in accordance with NTP guidelines) within the reporting year. *Denominator*: Estimated number of incident TB cases in people living with HIV	HIV care, ART registers	National.	Continuous data collection reported annually.
Indicator B.2.1 Number of adults and children newly-enrolled in HIV care, who are started on treatment for latent TB infection, isoniazid preventive therapy, expressed as a proportion of the total number of adults and children newly-enrolled in HIV care during the reporting period.	*Numerator*: Total number of adults and children newly-enrolled in HIV care who start (given at least one dose) isoniazid preventive therapy during the reporting period. *Denominator*: Total number of adults and children newly-enrolled in HIV care over the reporting period.	Pre -ART register: (All newly enrolled should be registered on pre-ART registers.) Direct registration on ART registers may be part of country adaptations.	National, regional, district, facility	Continuous data collection; quarterly reports
Indicator B.3.1 Number of health-care facilities providing services for people living with HIV with demonstrable infection control practices that include TB control, expressed as a proportion of the total number of health-care facilities evaluated.	*Numerator*: Number of health-care facilities with demonstrable infection control practices that include TB control that are consistent with international guidelines. *Denominator*: Total number of health-care facilities evaluated. (Also give the total number of each type of facility nationally to indicate the percentage evaluated.)	Facility visits as part of regular supervision or external review	National, regional, district, facility	Annual
Indicator B.3.2 Number of health-care workers employed in facilities providing care for people living with HIV who develop TB in one year expressed as a proportion of the total number of health-care workers employed in facilities providing care for people living with HIV during that same year.	*Numerator*: Number of health-care workers employed in HIV care facilities who develop TB in one year. *Denominator*: Total number of health-care workers employed in HIV care during that same year.	Facility visits as part of regular supervision or external review	National, regional, district, facility	Annual

Summary of indicators measured in TB care settings by the TB control programme

Indicator and definition	What to measure	Data sources	Level	Periodicity
Indicator C.1.1 Percentage of TB patients who had an HIV test result [a] recorded in the TB register.	*Numerator*: Number of TB patients registered during the reporting period who had an HIV test result a recorded in the TB register. *Denominator*: Total number of TB patients registered during the reporting period.	TB register	National, regional, district, facility	Continuous data collection; quarterly reports
Indicator C.1.2.1 Number of registered TB patients with documented HIV status on TB register who are HIV-positive, expressed as a proportion of the total number of all registered TB patients with documented HIV status over the reporting period.	*Numerator*: Total number of all TB patients registered over the reporting period with documented HIV-positive status. *Denominator*: Total number of TB patients registered during the reporting period with a documented HIV status.	TB register	National, regional, district, facility	Continuous data collection; quarterly reports
Indicator C.1.2.2 Number of TB patients registered with documented HIV status on TB register who are HIV-positive, expressed as a proportion of HIV-positive TB patients estimated to occur countrywide each year.	*Numerator*: Total number of all TB patients registered over the reporting period with documented HIV-positive status. *Denominator*: Estimated number of incident TB cases in people living with HIV.	Numerator data from TB register. Denominator data from WHO published estimates (*Global TB control* report)	National.	Continuous data collection; annual reports
Indicator C.2.1 Number of TB facilities where free condom distribution is practised and condoms are available, expressed as a proportion of all TB facilities.	*Numerator*: Total number of TB facilities (any health facility where TB patients are managed) where free condoms are available (in stock) and accessible. *Denominator*: Total number of TB facilities evaluated.	Facility visits as part of regular supervision or external review	National, regional, district, facility	Annual
Indicator C.3.1 Number of HIV-positive TB patients who are started on or continue previously initiated CPT, during TB treatment, expressed as a proportion of all HIV-positive TB patients registered over the reporting period.	*Numerator*: Number of HIV-positive TB patients, registered over the reporting period, starting or continuing CPT treatment during their TB treatment *Denominator*: Total number of HIV-positive TB patients registered during the reporting period.	TB register	National, regional, district, facility	Continuous data collection; quarterly reports
Indicator C.4.1 Number of HIV-positive TB patients enrolled in HIV care services during TB treatment, expressed as a proportion of the total number of HIV-positive TB patients.	*Numerator*: Number of HIV-positive TB patients, registered over the reporting period, who are enrolled in HIV care services during their TB treatment. *Denominator*: Total number of HIV-positive TB patients registered during the reporting period.	TB register	National, regional, district, facility	Continuous data collection; quarterly reports
Indicator C.5.1 Number of HIV-positive TB patients who are started on or continue previously initiated ART, during TB treatment, expressed as a proportion of all HIV-positive TB patients registered over the reporting period.	*Numerator*: All HIV-positive TB patients, registered over the reporting period, who receive ART (are started on or continue previously initiated ART). *Denominator*: Total number of HIV-positive TB patients registered during the reporting period.	TB register	National, regional, district, facility	Continuous data collection; quarterly reports

a This should include those TB cases previously known to be HIV-positive (e.g. documented evidence of enrolment in HIV care), or with a negative HIV result from previous testing that was acceptable to the clinician (e.g. done in the past 3–6 months in a reliable laboratory).

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