

TB/HIV INTEGRATION

Hello, my name is **Nurse X**

My job is to promote integrated HIV and TB prevention, care, treatment and support. This ensures that we, and my team of health care service providers treat everyone who is living with HIV and TB to have all the antiretroviral therapy (ART) and HIV care services are provided with TB diagnosis and treatment at one facility. Services that we provide include * Infection control education * TB screening and diagnosis * HIV testing * Treatment for those who require it * Adherence support



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What is the impact of TB/HIV co-infection?

- TB is the leading cause of death among HIV positive patients in sub-Saharan Africa, and accounts for approximately 1,000 deaths daily.⁷⁸
- HIV increases the risk of developing active TB among patients with latent TB infection (LTBI), from 10% over a patient's lifetime to 10% per year.⁷⁹
- HIV leads to rapid development of active TB disease among patients recently infected with TB and those with latent TB infection.
- HIV increases the rate of recurrence of TB.
- People with active TB who are co-infected with HIV have a higher risk of mortality compared with HIV- negative patients (16-35% vs 5-8%).⁸⁰
- Active TB increases the risk of HIV-related mortality both during and after successful TB treatment.

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Who are the at risk populations?

Active TB has been diagnosed at rates of up to 10 times higher in pregnant women living with HIV than in women without HIV.⁸¹ Maternal TB is associated with a 2.5-fold increased risk of HIV infection to the unborn child.⁸²

HIV infection is a risk factor for active TB disease in infants or children. More severe types of TB and higher mortality rates have been found in children living with HIV.⁸³ TB-related mortality in HIV co-infected patients is especially high in the first few months of TB treatment.⁸⁴ People living with HIV in congregate settings, including prisons and refugee centres and people who use drugs have a higher risk of HIV infection and incidence of TB.⁸⁵

⁷⁸ TB/HIV Factsheet, World Health Organization (2015). Available at http://www.who.int/tb/challenges/hiv/tbhiv_factsheet_2015.pdf

⁷⁹ Latent Tuberculosis Infection: A Guide for Primary Health Care Providers, Centers for Disease Control and Prevention (2014). Available at <http://www.cdc.gov/tb/publications/ltbi/diagnosis.htm>

⁸⁰ Smart T, HIV and TB in Practice for nurses: Starting ART for treatment and prevention in people with active TB and HIV, (2012). Available at <http://www.aidsmap.com/HIV-and-TB-in-Practice-for-nurses-Starting-ART-for-treatment-and-prevention-in-people-with-active-TB-and-HIV/page/2557005/>

⁸¹ Kali PB et al. Combining PMTCT with active case finding for tuberculosis. *JAIDS*, 2006, 42(3):379–381.

⁸² Gupta A et al. Maternal tuberculosis: a risk factor for mother-to-child transmission of human immunodeficiency virus. *Journal of Infectious Diseases*, 2011, 203(3):358–363.

⁸³ Swaminathan S, Rekha B. Pediatric tuberculosis: global overview and challenges. *Clinical Infectious Diseases*, 2010, 50 Suppl 3:S184–194.

⁸⁴ Mukadi YD, Maher D, Harries A Tuberculosis case fatality rates in high HIV prevalence populations in sub Saharan Africa. *AIDS*, (2001) 15:143–152.

⁸⁵ Getahun H et al. HIV infection-associated tuberculosis: the epidemiology and the response. *Clinical Infectious Diseases*, 2010, 50 Suppl3:S201–207.

Currently, the majority of TB and HIV/AIDS programmes are still being implemented separately, and this leads to:

- Limited coverage of TB and HIV services. Therefore limited access to care, which translates to missed opportunities in treating HIV in TB patients, or treating TB in HIV patients.
- Increased risk of loss to follow up of patients when being referred to different locations to access HIV and TB treatment and risks to non-adherence to treatment as patients are being managed by different health providers.
- Inefficient use of resources both for the health system, where the services can be provided under one roof with one health provider, as well as incurred costs to the patients.

TB/HIV integration aims to:

- Decrease TB and HIV transmission
- Decrease morbidity and mortality from TB and other HIV related illnesses
- Improve the efficiency of healthcare services
- Create a patient-centered approach for co-infected patients to ensure they are not lost to care

A study from South Africa showed that ART initiation in TB clinics can be delayed for as long as 116 days, mainly due to prolonged referral times between TB and ART services.⁸⁵ Up to 9% of HIV-infected patients are lost to follow-up during TB treatment.^{86, 87}

⁸⁵ Lawn SD, Campbell L, Kaplan R, Little F, Morrow C, et al. (2011) Delays in starting antiretroviral therapy in patients with HIV-associated tuberculosis accessing non-integrated clinical services in a South African township. *BMC Infectious Diseases*

⁸⁶ Varma JK, Nateniyom S, Akksilp S, Mankatittham W, Sirinak C, et al. (2009) HIV care and treatment factors associated with improved survival during TB treatment in Thailand: an observational study. *BMC Infect Dis.* 9:42.

⁸⁷ Makombe SD, Harries AD, Yu JK, Hochgesang M, Mhango E, et al. (2007) Outcomes of tuberculosis patients who start antiretroviral therapy under routine programme conditions in Malawi. *Int J Tuberc Lung Dis.* 11(4):412–6

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What are the WHO recommendations for the integration of HIV and TB services?⁸⁸

In recognition of the devastating impact the HIV epidemic has had on TB control, the WHO released policy guidelines on collaborative TB/HIV activities aimed at creating synergy between TB and HIV programmes through strengthening mechanisms to deliver integrated care, reducing the burden of TB among people living with HIV, and reducing the burden of HIV among both TB suspects and those with confirmed TB.

WHO - RECOMMENDED COLLABORATIVE TB/HIV ACTIVITIES

A. Establish and strengthen the mechanisms for delivering intergrated TB and HIV services

A.1. Set up and strengthen a coordinating body for collaborative TB/HIV activities functional at all levels

A.2. Determine HIV prevalence among TB patients and TB prevalence among people living with HIV

A.3. Carry out joint TB/HIV planning to intergrate the delivery of TB and HIV services

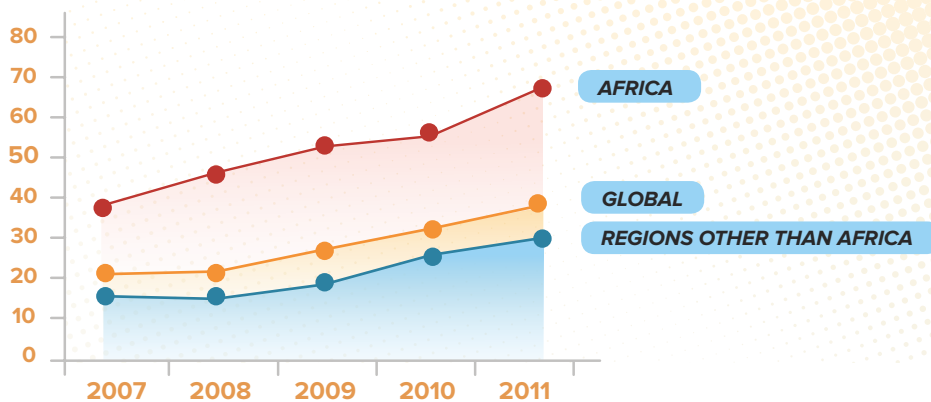
A.4. Monitor and evaluate collaborative TB/HIV activities

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What progress is being made with regards to TB/HIV integration?

There has been a steady increase in the numbers of patients with TB who are tested for HIV. Progress in the African continent is significantly higher than global progress. The number of TB patients tested for HIV went up from approximately 40% to approximately 70% from 2007 to 2011. This represents significant progress in the linkage between TB and HIV services.

TB PATIENTS TESTED FOR HIV (%)

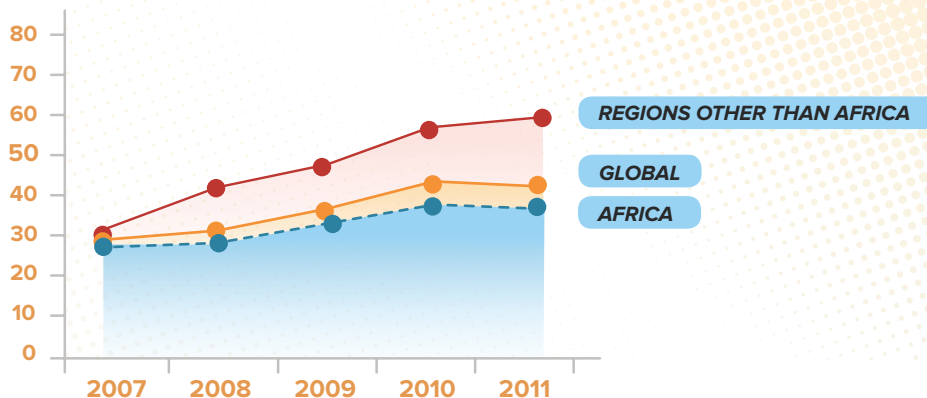


Source: http://www.who.int/tb/challenges/hiv/getahun_art.pdf

⁸⁹ WHO policy on collaborative TB/HIV activities, guidelines for national programmes and other stakeholders, World Health Organisation (2012). Available at http://www.who.int/tb/publications/2012/tb_hiv_policy_9789241503006/en/

The number of TB patients receiving ART has increase steadily since 2007, in Africa (experiencing the highest burden of disease) and globally. The progress is slower in Africa than in other regions of the world. In Africa, the number of patients put on ART increased from approximately 30% to over 40% over the 4 year period.

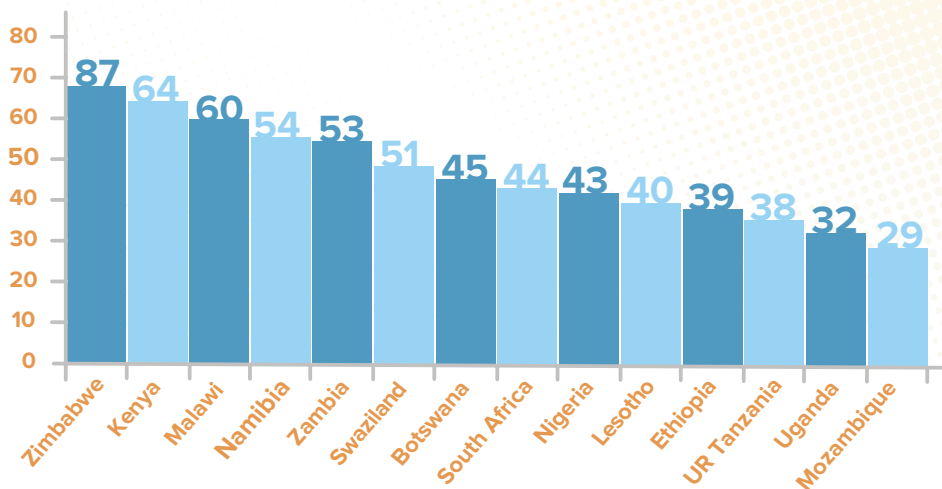
TB PATIENTS RECEIVED ART (%)



Source: http://www.who.int/tb/challenges/hiv/getahun_art.pdf

The graph below represents country specific coverage of ART among patients who are co-infected. There are significant inter-country variations, with Zimbabwe reporting the highest levels of ART coverage at 67% and Mozambique reporting the lowest levels of ART coverage at 29%. It is essential that all newly diagnosed HIV patients with TB be initiated on ART immediately.

2011 ART COVERAGE AMONG NEW HIV POSITIVE TB PATIENTS



Source: http://www.who.int/tb/challenges/hiv/getahun_art.pdf

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What are the barriers to integration?

SERVICE DELIVERY

- Lack of demand among patients and health providers
- Poor referrals system including inadequate access and poor communication between services
- Lack of space at facilities
- Lack of integrated TB and HIV data collection systems
- Lack of integrated TB and HIV governance from national to grass root level of care delivery, which deeply affects TB and HIV collaboration in service delivery at all levels
- Stigma ● Poor infection control
- MDR and XDR-TB pose very high mortality risk for HIV positive patients

HUMAN RESOURCES

- Insufficient numbers of health care workers
- High turnover rates
- Poor motivation among health workers

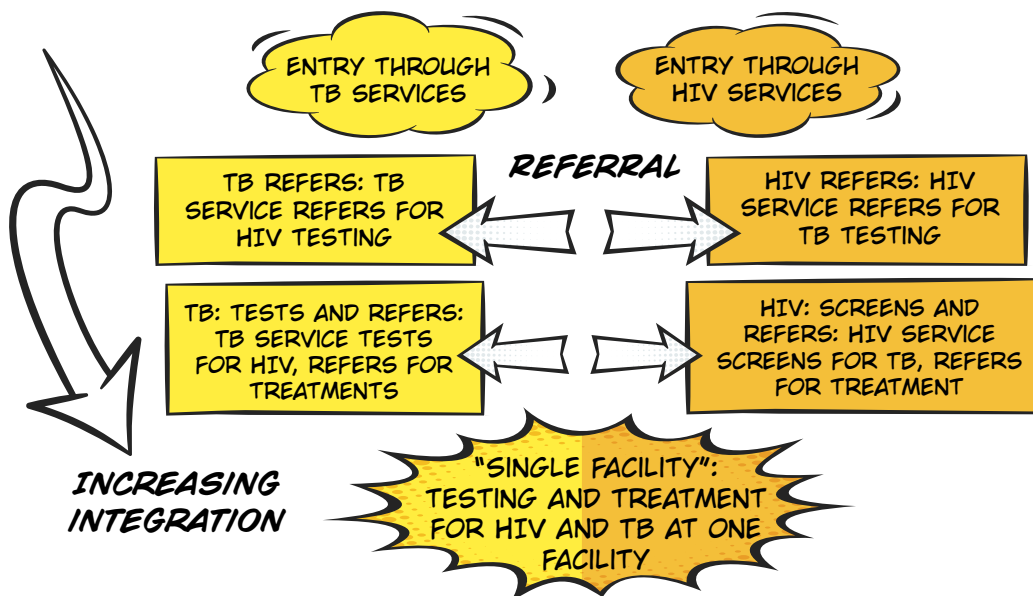
SUPPLY OF MEDICINES AND PRODUCTS

- Challenges with the storage and supply of IPT and ART
- Limited test kit supplies

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What are the different models of TB/HIV integration?

The following section outlines 4 different models through which patients are able to access both HIV and TB services. Patients may either access TB services and be referred for HIV care, access TB care and HIV testing, and those testing positive be referred, access HIV care and be referred for TB services, or through an integrated model, access both services in one location.



Source: *Integrating tuberculosis and HIV services in low and middle income countries: A systematic review* Legido-Quigley et al TMIH Feb 2013

Entry via TB service and referral for HIV testing and care

Under this model, once a patient accesses TB services, they would be responsible for referring patients to facilities providing HIV testing:

BENEFITS:

- Simple to introduce
- Requires minimal additional logistic and financial input

REQUIRES:

- Joint training of health care workers from both programmes,
- Adapting existing record keeping systems and referral forms
- Regular meetings of staff from both services to strengthen referral

WEAKNESSES:

- Loss of patients if referral fails
- Not recommended in high HIV prevalence setting

Entry via TB service and referral for HIV care after HIV testing

Under this model, TB clinics would offer HIV testing and refer HIV positive people for care:

REQUIRES:

- Additional HIV counseling and testing space and possibly additional staff members

WEAKNESS:

- Loss of patients if referral fails, with increased risk of HIV transmission to partners and children and delays in treatment initiation

Entry via HIV service and referral for TB screening, diagnosis and treatment

HIV services refer people living with HIV for TB screening, diagnosis and treatment:

REQUIRES:

- Appropriate referral criteria

WEAKNESS:

- Failure of the referral process can lead to ongoing TB transmission and progression of TB disease

Entry via HIV service and referral for TB diagnosis and treatment after TB screening

People living with HIV are screened for TB and referred for TB diagnosis and treatment based on the outcome of the screening:

REQUIRES:

- Such facilities could provide isoniazid preventive therapy (IPT)
- Should facilities provide sputum sample collection on site there is a need for increased infection control measures

TB and HIV services provided at a single facility

POSSIBILITIES INCLUDE:

- TB clinic provides HIV treatment
- HIV clinic provides TB treatment
- Primary health centre provides integrated diagnosis and treatment for TB and HIV either in one or separate rooms
- Hospital provides integrated diagnosis and treatment for TB and HIV either in one or separate rooms

BENEFITS:

- Efficient in settings with high HIV prevalence, high rates of co-infection, and where human resource availability is limited
- Allows early detection and treatment of undiagnosed TB, and may result in a reduction of TB risk compared with separate services
- Increase in detection of smear-negative pulmonary and extra-pulmonary TB and of treatment success rates with integrated TB/HIV care
- Timely initiation of ART in TB patients living with HIV without the necessity for referral
- Develops staff's skill in managing co-infected patients and results in better management of patients' clinical challenges, including drug interactions and toxicity, Immune Reconstitution Inflammatory Syndrome (IRIS), TB deterioration and optimal timing of ART initiation
- Adherence and social support interventions within integrated programs can reinforce each other rather than competing for scarce resources
- Helps improve efficiency of service delivery by avoiding duplication of logistic and administrative requirements

TB and HIV services provided at a single facility

WEAKNESSES:

- Risk of nosocomial spread of TB.
- Most resource constraint settings have poor infection control measures or nonadherence to infection control measures
- Overburdened staff not being able to implement infection control measures
- Lack of space in clinics leading to overcrowding
- Poor patient flow within facilities

**INTEGRATION IS MORE TIME EFFICIENT AND SAVES TIME.
TIME SPENT FOR CONSULTATION WITH PATIENT:**

INTERGRATED TB/HIV REPEAT CONSULT = LESS TIME	SEPERATED TB AND HIV REPEAT CONSULT = MORE TIME	
	TB REPEAT CONSULT	ART REPEAT CONSULT
<ul style="list-style-type: none"> ● Check combined patient file for monitoring investigation results incl. AFB, culture, ART blood results and previous notes 	<ul style="list-style-type: none"> ● Check combined TB file for monitoring investigation results incl. AFB, culture and previous notes 	<ul style="list-style-type: none"> ● Check patient ART file for monitoring investigation results incl. ART blood results and previous notes
<ul style="list-style-type: none"> ● Phone lab or send CHW to fetch missing results* 	<ul style="list-style-type: none"> ● Phone lab or send CHW to fetch missing results * 	<ul style="list-style-type: none"> ● Phone lab or send CHW to fetch missing results*
<ul style="list-style-type: none"> ● Review patients vital signs 	<ul style="list-style-type: none"> ● Review patients vital signs 	<ul style="list-style-type: none"> ● Review patients vital signscons
<ul style="list-style-type: none"> ● Consult with patient re medical history and TB and ART adherence since last visit. 	<ul style="list-style-type: none"> ● Consult with patient re medical history and TB adherence since last visit 	<ul style="list-style-type: none"> ● Consult with patient re medical history and ARV adherence since last visit
<ul style="list-style-type: none"> ● Examine patient ito HIV and TB clinical management* 	<ul style="list-style-type: none"> ● Examine patient ito TB clinical management 	<ul style="list-style-type: none"> ● Examine patient ito HIV clinical management*
<ul style="list-style-type: none"> ● Determine any require TB and ART monitoring blood/ sputum investigation, take blood or send for sputum collection*, complete lab form* 	<ul style="list-style-type: none"> ● Determine any required TB monitoring sputum, send for sputum collection*, lab form* 	<ul style="list-style-type: none"> ● Determine any required ART monitoring blood investigations, take blood*, lab form
<ul style="list-style-type: none"> ● Dispense TB RX and ART, record in combined patient file and both facility TB and HIV registers 	<ul style="list-style-type: none"> ● Dispense TB RX record in patient TB file and facility register 	<ul style="list-style-type: none"> ● Dispense ART, record in patient ART file and facility ART register
<ul style="list-style-type: none"> ● Provide single TCB date 	<ul style="list-style-type: none"> ● Provide TCB date 	<ul style="list-style-type: none"> ● Provide TCB date

Source: South African Department of Health: A practical guide for TB and HIV service Integration at Primary health care facilities

INTEGRATED SERVICES SHOULD BE CONSIDERED BEYOND THE CLINIC LEVEL

- Congregate settings, such as prisons, public transport, mines, factories, taverns and places of worship
- Households/community

BENEFITS OF INTEGRATION WHERE IT IS BEING IMPLEMENTED ⁹⁰

In January 2006, MSF and the Ministry of Health in Lesotho launched a pilot programme to provide nurse-driven integrated HIV and TB treatment at the primary health care (PHC) level.

BETWEEN 2006 AND 2009:

- Total TB cases identified and treated at PHC level rose from 105 to 332 cases in 2009.
- The proportion of diagnosed sputum negative and extra-pulmonary TB cases increased from 10% to 48% of cases.
- In 2008, 93% of TB cases were tested for HIV (78% were HIV positive), 92% received Cotrimoxazole prophylaxis and 81% received ART.
- The treatment success rate in co-infected and non co-infected patients respectively was 65% and 77% in 2007 and 70% and 79% in 2008. Therefore, the treatment success rate in co-infected and non co-infected patients improved between 2007-2008 due to nurse-driven integrated HIV and TB treatment at PHC level. TB registers and clinical notes of 209 TB/HIV co-infected adults at one primary care HIV/ TB integrated clinic in South Africa were reviewed between June 2008 and May 2009 and found:⁹¹
- Full TB/HIV integration led to a 60% increased chance of co-infected patients starting ART.
- Integration reduced time from TB treatment to ART initiation by an average of 72 days.

ASSESSMENT AT AN ART CLINIC DURING TB TREATMENT REDUCED LOSS TO FOLLOW-UP BY 80% ⁹²

In December 2008, a separate integrated TB/HIV clinic was established for patients attending a large urban HIV clinic in Uganda.⁹³

This resulted in:

- TB treatment cure or completion increased from 62% to 68%,
- Death or default decreased from 33% to 25%
- More patients were started on ART during TB treatment (94% vs. 78%) Furthermore, the majority of patients were initiated on ARVs during the intensive phase of TB treatment (60% vs. 23%)

⁹⁰ Bygrave H, Trivino L, Makakole L. *TB/HIV integration: lessons learned from implementation of a TB/HIV "one stop shop" at primary health care clinics in rural Lesotho.* Vienna, 18th International AIDS Conference, 2010

⁹¹ Kerschberger B, Hilderbrand K, Boule AM, Coetzee D, Goemaere E, et al. (2012) *The Effect of Complete Integration of HIV and TB Services on Time to Initiation of Antiretroviral Therapy: A Before-After Study.* PLoS ONE 7(10): e46988. doi:10.1371/journal.pone.0046988

⁹² *Reduces Loss to Follow-up among HIV-Infected Patients.* PLoS ONE 7: e37634. doi: 10.1371/journal.pone.0037634.

⁹³ Hermans SM CB, Katabira C, Mbidde P, Lange JMA, et al. (2012) *Integration of HIV and TB Services Results in Improved TB Treatment Outcomes and Earlier Prioritized ART Initiation in a Large Urban HIV Clinic in Uganda.* JAIDS 60: e29–e35. doi:10.1097/QAI.0b013e318251aeb4.

OTHER SUCCESSFUL EXAMPLES OF INTEGRATION IN THE REGION:

- Gandhi NR, Moll AP, Lalloo U, Pawinski R, Zeller K, et al. (2009) Successful Integration of Tuberculosis and HIV Treatment in Rural South Africa: The Sizong'oba Study. *J Acquir Immune Defic Syndr* 50: 37–43.
- Gasana M, Vandebriel G, Kabanda G, Tsiouris SJ, Justman J, et al. (2008) Integrating tuberculosis and HIV care in rural Rwanda. *INT J TUBERC LUNG DIS* 12: 39–43.
- Micek M (2005) Integrating TB and HIV Care in Mozambique: Lessons from an HIV Clinic in Beira. Health Alliance International.
- Miti S, Mfungwe V, Reijer P, Maher D (2003) Integration of tuberculosis treatment in a community-based home care programme for persons living with HIV/AIDS in Ndola, Zambia. *INT J TUBERC LUNG DIS* 7: 92–98.
- JB H, SM H, KM R, BH C, NG K, et al.. (2008) Early lessons from the integration of tuberculosis and HIV services in primary care centers in Lusaka, Zambia. *Int J Tuberc Lung Dis* 12.

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What are the WHO recommendations for M&E for TB/HIV integrated services ⁹⁴

Monitoring and evaluation activities are conducted to assess the quality, effectiveness, coverage and delivery of the collaborative TB/HIV activities. Such activities provide the opportunity for learning across the HIV and TB programme, in order to strengthen the individual services and joint programme performance.

Monitor and evaluate collaborative TB/HIV activities

RECOMMENDATIONS

- 1. HIV programme and TB-control programmes should establish harmonised indicators and standard reporting and recording templates to collect data for monitoring and evaluation of collaborative TB/HIV activities.**
- 2. Organisations implementing collaborative TB/HIV activities should embrace harmonised indicators and establish a reporting mechanism to ensure that their data is captured by the national monitoring and evaluation system of the country.**
- 3. THE WHO guide to monitoring and evaluation of collaborative TB/HIV activities and the three inter-linked patient monitoring systems for HIV care/ART, MHC/PMTCT and TB/HIV should be used as a basis to standardise country-specific monitoring and evaluation activities.**

MONITORING AND EVALUATION INVOLVES:

- Collaboration between the HIV care/ART, MCH/PMTCT⁹⁵, and TB/HIV programmes and the general health system
- Development of referral linkages between different services
- Joint supervision

⁹⁴ WHO policy on collaborative TB/HIV activities guidelines for national programmes and other stakeholders, World Health Organisation (2015). Available at www.who.int/tb/publications/monitoring-evaluation-collaborative-tb-hiv/en/

⁹⁵ MCH: maternal and child health & PMTCT: prevention of mother to child transmission

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What are things to consider when developing the monitoring system?

- Integrate with already existing monitoring and evaluation systems if they exist.
- Establish and identify harmonised indicators that should be captured by each service to align and cross-check data between different programmes to verify whether patients have been tested and are accessing care.

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Are there tools developed already for M&E around TB and HIV activities?

The guide below was developed to support the collection of standardised data and facilitate the interpretation and dissemination of information to strengthen the HIV and TB programmes. The guide provides a set of standardised indicators to harmonise data collection, monitor and evaluate programme performance and further highlight the benefits of collaborative HIV/TB activities.

The newly revised TB/HIV indicator guide includes:

Harmonised indicators with 13 instead of 20 indicators, including 2 Infection control indicators:

- TB STATUS AT LAST VISIT
- STARTED TB TREATMENT
- ART & TB TREATMENT / Estimated HIV&TB cases
- NEWLY ENROLLED HIV+ ON IPT
- INFECTION CONTROL PRACTICES
- HEALTH WORKERS WITH TB
- % HIV STATUS KNOWN
- % HIV POSITIVE
- TB/HIV CASE DETECTION
- FREE CONDOMS
- CPT PROVISION
- % TB/HIV in HIV CARE
- ART PROVISION



Source: www.who.int/tb/publications/monitoring-evaluation-collaborative-tb-hiv/en/

Current available tools for M&E:

Three interlinked patient monitoring systems for HIV care/ART, MCH/PMTCT (including malaria prevention during pregnancy), and TB/HIV: standardised minimum data set and illustrative tools

http://apps.who.int/iris/bitstream/10665/77753/1/9789241598156_eng.pdf

Participant training manual

http://apps.who.int/iris/bitstream/10665/78150/1/9789241599825_eng.pdf

Facilitator training guide

http://apps.who.int/iris/bitstream/10665/78143/1/9789241599832_eng.pdf

Set of completed cards, registers and reports. A companion for the Exercise booklet of the three interlinked patient monitoring system

http://apps.who.int/iris/bitstream/10665/83957/1/WHO_HIV_2013.5_eng.pdf

Additional tools for integration:

A practical guide for TB and HIV service Integration at Primary health care facilities

The South African department of health, with the support of partners, developed a guide for the integration of HIV and TB services aimed to support facility managers and health care workers (HCWs). The document includes a step-by-step guide to the integration of HIV and TB services.

Source: <https://www.medbox.org/za-community-health/a-practical-guide-for-tb-and-hiv-service-integration-at-primary-health-care-facilities/preview/>

