

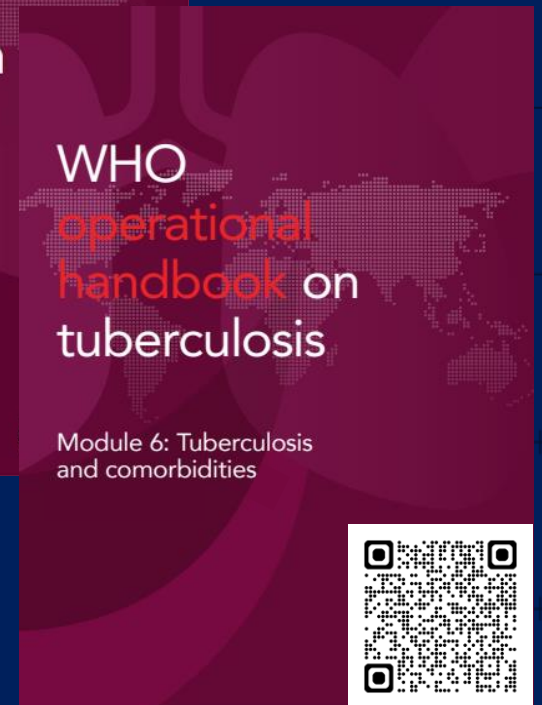
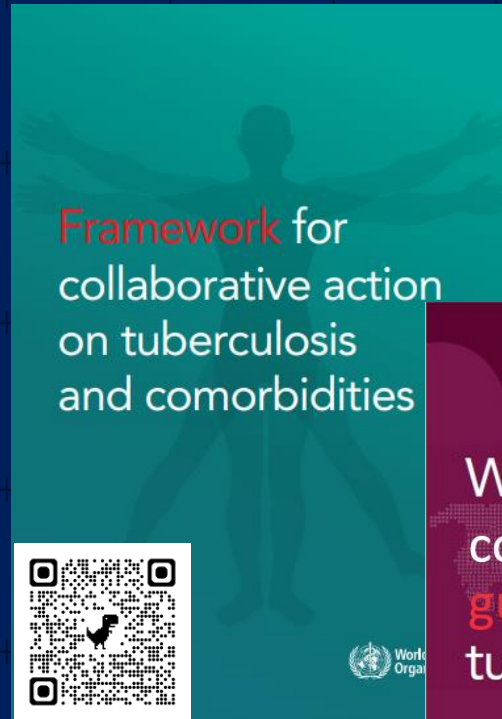
TB and comorbidities:

Mentimeter questions and summary of WHO guidance

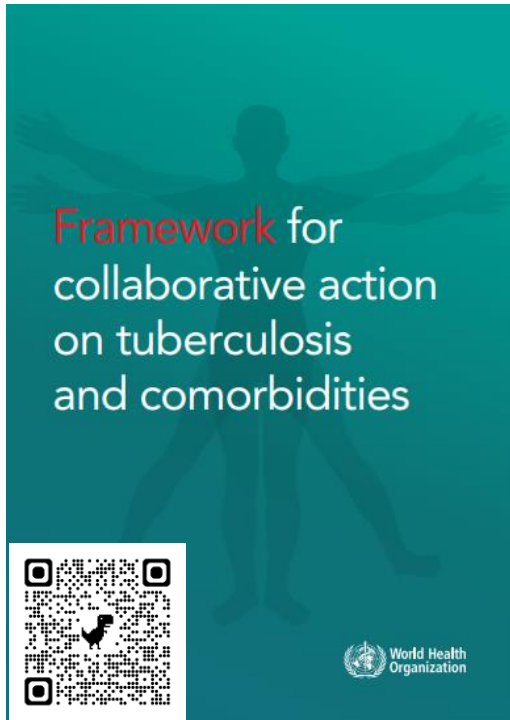
Dr Kerri Viney MPH, PhD
Department for HIV, Tuberculosis, Hepatitis and STIs
World Health Organization
AFRO regional TB meeting: Accelerating progress towards ending TB in the African Region
Addis Ababa, Ethiopia
23-25 June 2026



Accelerating Progress towards
ending TB in the African Region

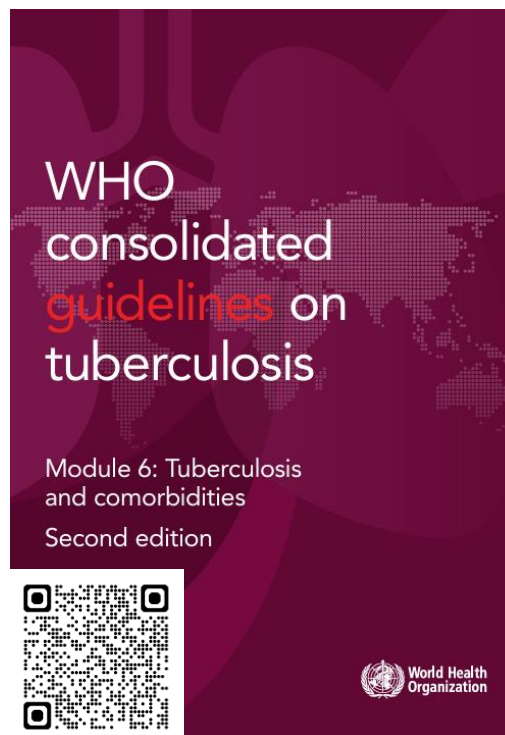
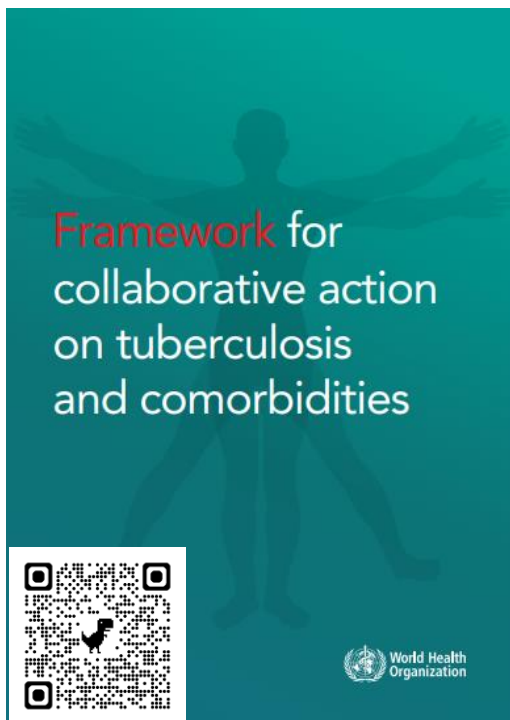


WHO guidance on tuberculosis and comorbidities



- Published in 2022
- Aims to support countries in the evidence-informed introduction and scale-up of holistic people-centred services for TB, comorbidities and health-related risk factors

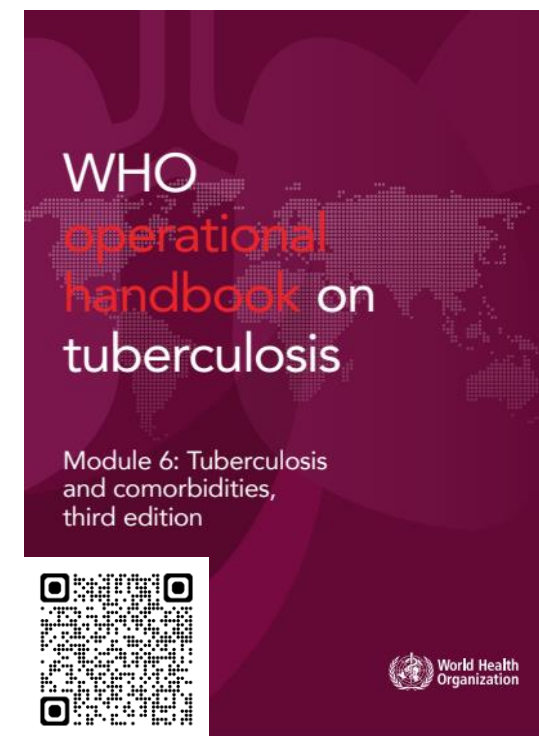
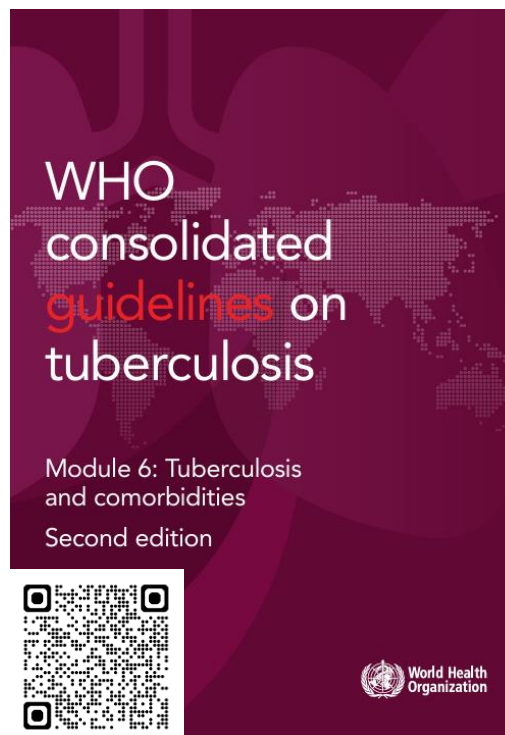
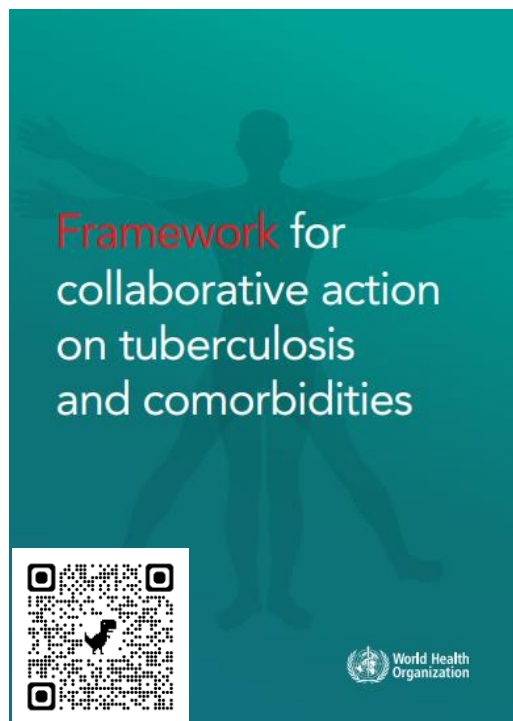
WHO guidance on tuberculosis and comorbidities



- Published in 2022
- Aims to support countries in the evidence-informed introduction and scale-up of holistic people-centred services for TB, comorbidities and health-related risk factors

- Published in 2025
- Contains WHO recommendations on HIV-associated TB, and TB and undernutrition

WHO guidance on tuberculosis and comorbidities



- Published in 2022

- Aims to support countries in the evidence-informed introduction and scale-up of holistic people-centred services for TB, comorbidities and health-related risk factors

- Published in 2025

- Contains WHO recommendations on HIV-associated TB, and TB and undernutrition

- Published in 2025

- Contains implementation considerations on mental health conditions, substance use disorders, HIV and diabetes
- A section on TB and undernutrition is in preparation

Tuberculosis and comorbidities: Answer 1

1. What screening tools does WHO recommend for screening for TB among people living with HIV?
 - A. The four-symptom screen (i.e. current cough, fever, weight loss or night sweats)
 - B. Chest x-ray with or without computer aided detection
 - C. CT chest
 - D. The four-symptom screen (i.e. cough $\geq$ 2 weeks, fever, weight loss or fatigue)
 - E. C reactive protein $>$ 5mg/L
 - F. Molecular WHO-recommended rapid diagnostic tests
 - G. LF-LAM

TB screening for PLHIV

WHO 4 Symptom screen Chest X-ray + computer-aided detection

Among individuals aged 15 years and older in populations in which TB screening is recommended, computer-aided detection software programmes may be used in place of human readers for interpreting digital chest X-rays for screening and triage for TB disease (*new recommendation: conditional recommendation, low certainty of evidence*).

Among adults and adolescents living with HIV, systematic screening for TB disease should be conducted using the WHO-recommended four symptom screen and those who report any one of the symptoms of current cough, fever, weight loss or night sweats may have TB and should be evaluated for TB and other diseases

(*existing recommendation: strong recommendation, moderate certainty of evidence*).

Among adults and adolescents living with HIV, C-reactive protein using a cut-off of $>5\text{mg/L}$ may be used to screen for TB disease

(*new recommendation: conditional recommendation, low certainty of evidence for test accuracy*).

Among adults and adolescents living with HIV, chest X-ray may be used to screen for TB disease

(*new recommendation: conditional recommendation, moderate certainty of evidence for test accuracy*).

Among adults and adolescents living with HIV, molecular WHO-recommended rapid diagnostic tests may be used to screen for TB disease

(*new recommendation: conditional recommendation, moderate certainty of evidence for test accuracy*).

Adult and adolescent inpatients with HIV in medical wards where the TB prevalence is $> 10\%$ should be tested systematically for TB disease with a molecular WHO-recommended rapid diagnostic test

(*new recommendation: strong recommendation, moderate certainty of evidence for test accuracy*).

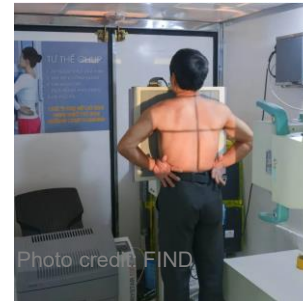
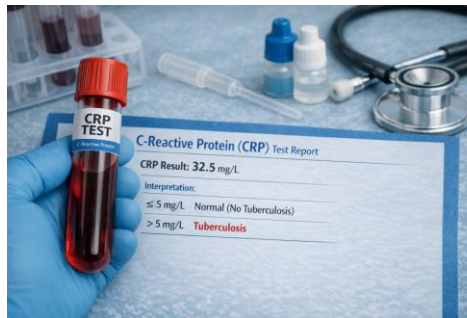


Photo credit: FIND



Photo credit: Stop TB Partnership

C-reactive protein $>5\text{ mg/L}$



Molecular rapid WHO-recommended diagnostic tests



WHO consolidated guidelines on tuberculosis

Module 2: Screening

Systematic screening for tuberculosis disease

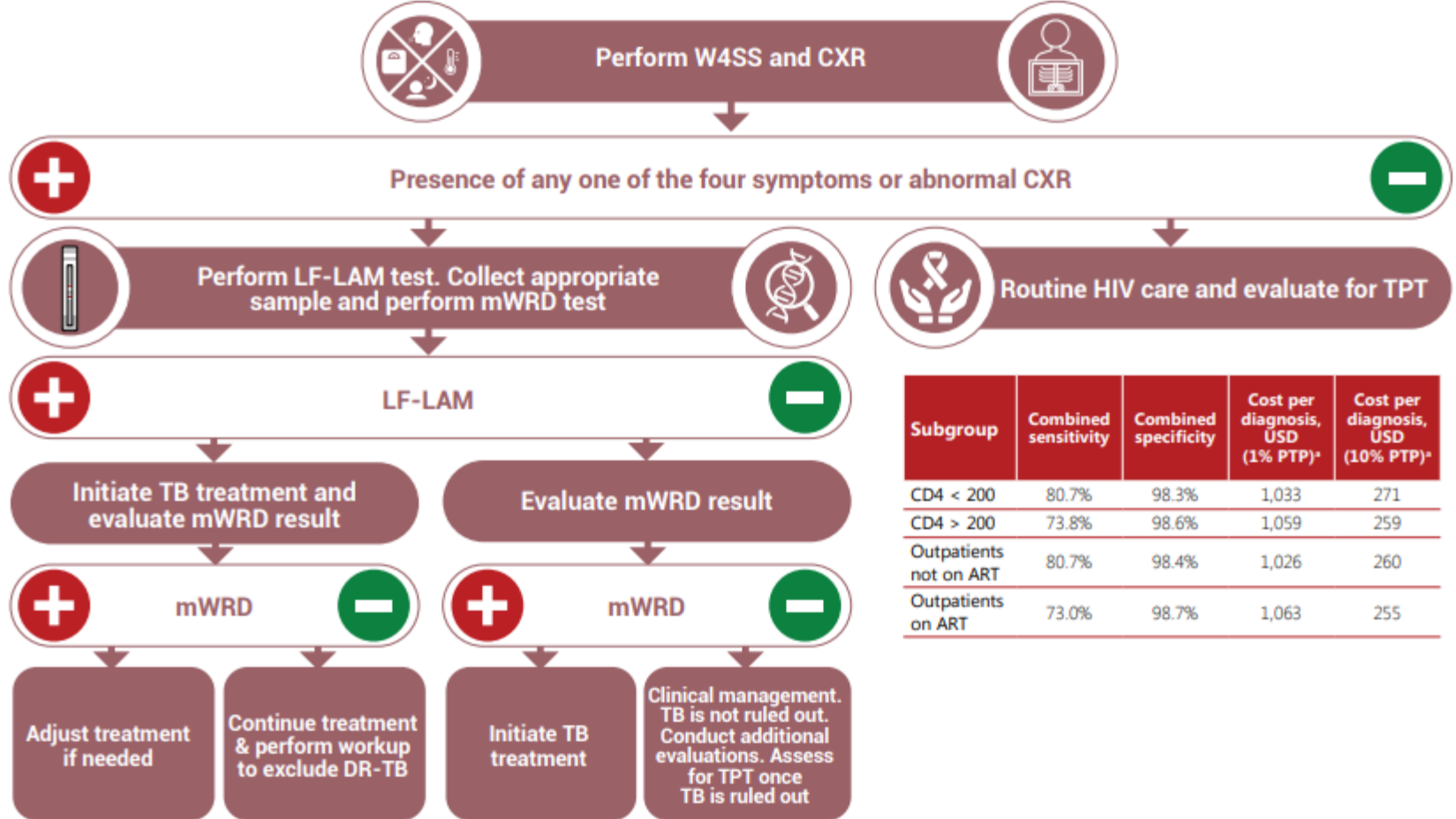


WHO Benchmark

All household contacts, all PLHIV, and other locally relevant high-risk groups are screened for TB

Most sensitive TB screening and diagnostic algorithm for PLHIV

Algorithm 2: W4SS and CXR followed by LF-LAM and mWRD



Subgroup	Combined sensitivity	Combined specificity	Cost per diagnosis, USD (1% PTP)*	Cost per diagnosis, USD (10% PTP)*
CD4 < 200	80.7%	98.3%	1,033	271
CD4 > 200	73.8%	98.6%	1,059	259
Outpatients not on ART	80.7%	98.4%	1,026	260
Outpatients on ART	73.0%	98.7%	1,063	255

Considerations for Algorithm 2:

- » For people who are clinically stable on ART or with a higher CD4 cell count.
- » Recommended during catch-up campaigns to rule out TB disease among people with HIV on ART who have not previously received TPT.
- » Increases sensitivity in outpatients on ART (by 27.5%) and among people with CD4 > 200 (by 14.6%) compared to Algorithm 1.
- » LF-LAM should not be used in asymptomatic individuals who do not have signs of advanced HIV disease or serious illness
- » If resources allow, could be used for a baseline screen and annual screening thereafter to be aligned with visits for viral load monitoring.

WHO
operational
handbook on
tuberculosis

Module 6: Tuberculosis
and comorbidities,
third edition



Tuberculosis and comorbidities: Answer 2

2. When should people living with HIV be screened for TB?

- A. At each visit to a health facility
- B. Once a year
- C. Once every two years
- D. After known contact with a person with TB (household or close contact)
- E. Solely according to the discretion of the treating clinician
- F. According to CD4 count

TB screening for PLHIV

Screening for TB in targeted populations

- 3 People living with HIV should be systematically screened for TB disease at each visit to a health facility
(existing recommendation: strong recommendation, very low certainty of evidence).
- 4 Household contacts and other close contacts of individuals with TB disease should be systematically screened for TB disease
(updated recommendation: strong recommendation, moderate certainty of evidence).

WHO
consolidated
guidelines on
tuberculosis

Module 2: Screening
Systematic screening for
tuberculosis disease



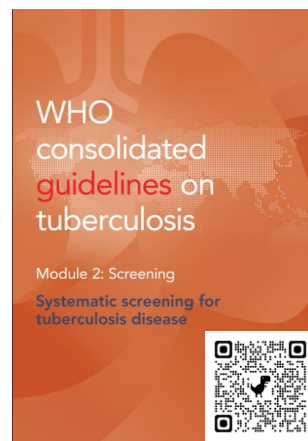
TB screening for PLHIV

Screening for TB in targeted populations

- 3 People living with HIV should be systematically screened for TB disease at each visit to a health facility
(existing recommendation: strong recommendation, very low certainty of evidence).
- 4 Household contacts and other close contacts of individuals with TB disease should be systematically screened for TB disease
(updated recommendation: strong recommendation, moderate certainty of evidence).

WHO benchmark

All household contacts, all PLHIV, and other locally relevant high-risk groups are screened for TB



Tuberculosis and comorbidities: Answer 3

3. Which of the following statements are true regarding the WHO recommended strategies to diagnose pulmonary TB among people living with HIV?

- A. People living with HIV should be tested for TB using a low complexity automated nucleic acid amplification test (LC-aNAAT) as a single testing strategy
- B. People living with HIV should be tested for TB using a concurrent testing strategy, using a LC-aNAAT and LF-LAM as the preferred strategy
- C. In the context of concurrent testing, where LC-aNAATs are not available, NPOC-NAATs may be used concurrently with LF-LAM
- D. In the context of concurrent testing, NPOC-NAATs may be used concurrently with LF-LAM as the preferred strategy
- E. If a respiratory sample is unobtainable in a person living with HIV, a tongue swab may be used concurrently with LF-LAM
- F. If an NPOC-NAAT is used to test for TB among someone living with HIV, a sample should be sent for drug susceptibility testing

TB diagnosis among PLHIV

NEW

For adults and adolescents with HIV who have signs or symptoms of TB, screen positive for TB, are seriously ill or have advanced HIV disease, **concurrent testing** using low-complexity automated NAATs on respiratory samples and LF-LAM on urine should be used as the initial diagnostic strategy for diagnosing TB, rather than low-complexity automated NAATs on respiratory samples alone.

(Strong recommendation, low certainty of evidence)

NEW

For children with HIV who have signs or symptoms or screen positive for pulmonary TB, **concurrent testing** using low-complexity automated NAATs on respiratory and stool samples and LF-LAM on urine may be used as the initial diagnostic strategy for diagnosing TB, rather than low-complexity automated NAATs on respiratory or stool samples alone.

(Conditional recommendation, low certainty of evidence)

NEW

In adults and adolescents with signs and symptoms of pulmonary TB or who screen positive for pulmonary TB, low-complexity automated nucleic acid amplification tests (NAATs) on respiratory samples should be used as initial diagnostic tests for TB rather than smear microscopy or culture.

(Strong recommendation, high certainty of evidence);

When respiratory samples cannot be obtained, low-complexity automated NAATs on tongue swabs may be used as initial diagnostic tests for TB.

(Conditional recommendation, low certainty of evidence)¹

NEW

In adults and adolescents with signs and symptoms of pulmonary TB or who screen positive for pulmonary TB, NPOC-NAATs on sputum should be used as initial diagnostic tests for TB rather than smear microscopy

(Strong recommendation, moderate certainty of evidence);²

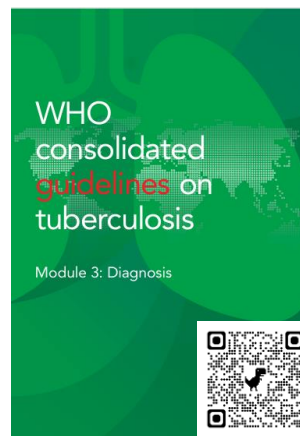
When sputum cannot be obtained, NPOC-NAATs on tongue swabs should be used as initial diagnostic tests for TB.¹

(Strong recommendation, moderate certainty of evidence)



WHO Benchmark

In all facilities in all districts the TB diagnostic algorithm requires the use of a mWRD as the initial diagnostic test for all individuals with presumed TB; including children and PLHIV (combined with lateral flow lipoarabino-mannan [LF-LAM]) and extrapulmonary TB.



1 Tongue swabs should only be used if PLHIV are unable to produce sputum

2 mWRD testing with LC-aNAATs for PLHIV is the preferred, more sensitive technology

TB diagnosis among PLHIV

In adults and adolescents with signs and symptoms of pulmonary TB or who screen positive for pulmonary TB, NPOC-NAATs on sputum should be used as initial diagnostic tests for TB rather than smear microscopy (*Strong recommendation, moderate certainty of evidence*)

When sputum cannot be obtained, NPOC-NAATs on tongue swabs should be used as initial diagnostic tests for TB (*Strong recommendation, moderate certainty of evidence*)

Remarks

- Evidence was available for expectorated and induced sputum
- Sputum remains the preferred sample and should be collected and tested whenever possible, given improved diagnostic accuracy over tongue swabs
- TS may be collected by trained personnel or self-collected with guidance from trained personnel.
- **Applies to adults and adolescents living with HIV. However, concurrent testing with an LC-aNAAT and LF-LAM is the preferred strategy for PLHIV. In the context of concurrent testing, where LC-aNAATs are not available, NPOC-NAATs may be used with LF-LAM; where a respiratory sample is unobtainable, a tongue swab may be used with LF-LAM**
- Extrapolated to children for use with sputum (expectorated or induced), but not tongue swabs or other paediatric samples. Wherever available, concurrent testing with LC-aNAATs on respiratory and stool samples (and LF-LAM among those that are HIV positive) is the preferred testing strategy for children
- As NPOC-NAATs do not provide rifampicin resistance results, all positive tests should be referred for resistance testing

Tuberculosis and comorbidities: Answer 4

4. The provision of nutritional interventions is recommended for which sub-groups of people with TB?

- A. People with drug resistant TB
- B. People with HIV associated TB
- C. People with undernutrition (mild to severe)
- D. All of the above

Recommendations on TB and undernutrition

Undernutrition

WHO consolidated guidelines on tuberculosis

Module 6: Tuberculosis and comorbidities
Second edition



Nutritional assessment and counselling

1. At diagnosis and throughout treatment, all individuals with TB should be offered nutritional assessment and appropriate counselling based on their nutritional status.

(Existing recommendation with language edit: strong recommendation, no direct evidence available)

2. Household contacts of people with TB should be offered nutritional assessment and counselling as part of contact tracing. If undernutrition is identified, it should be managed according to WHO guidance.

NEW

(New recommendation: strong recommendation, low certainty of evidence)

Nutritional interventions to improve clinical outcomes for people with TB

3. Nutritional interventions^a should be offered to individuals with TB who have severe, moderate or mild undernutrition, as part of a comprehensive package of TB care.

NEW

(New recommendation: strong recommendation, low–moderate certainty of evidence)

4. A package of treatment adherence interventions^b may be offered for patients on TB treatment in conjunction with the selection of a suitable treatment administration option.

(Existing recommendation: conditional recommendation, low certainty of evidence)

5. One or more of the following treatment adherence interventions (complementary and not mutually exclusive) may be offered to patients on TB treatment or to health care providers:

- a) tracers or digital medication monitor *(conditional recommendation, very low certainty of evidence)*;
- b) material support^c to patient *(conditional recommendation, moderate certainty of evidence)*;
- c) psychological support to patient *(conditional recommendation, low certainty of evidence)*;
- d) staff education *(conditional recommendation, low certainty of evidence)*.

(Existing recommendation)

Food assistance to prevent TB in household contacts

6. In settings of food insecurity, food baskets in combination with multiple micronutrient supplements should be offered to all households of people with TB.^d

NEW

(New recommendation: strong recommendation, moderate certainty of evidence)

Micronutrient supplementation in people with TB

7. Vitamin D supplementation may be provided to people with TB in the context of rigorous research.

NEW

(New recommendation: conditional recommendation, low certainty of evidence)

TB screening in people with undernutrition and with food insecurity

8. In settings where the TB prevalence in the general population is 100/100 000 population or higher, systematic screening for TB disease may be conducted among people with a risk factor for TB^a who are either seeking health care or who are already in care.

(Existing recommendation: conditional recommendation, very low certainty of evidence)

9. Systematic screening for TB disease may be conducted among subpopulations with structural risk factors for TB.^b These include urban poor communities, homeless communities, communities in remote or isolated areas, indigenous populations, migrants, refugees, internally displaced persons and other vulnerable or marginalized groups with limited access to health care.

(Existing recommendation: conditional recommendation, very low certainty of evidence)

^a Undernutrition is a recognized risk factor for TB, and malnourishment is listed as one of the key risk factors to consider for TB screening.

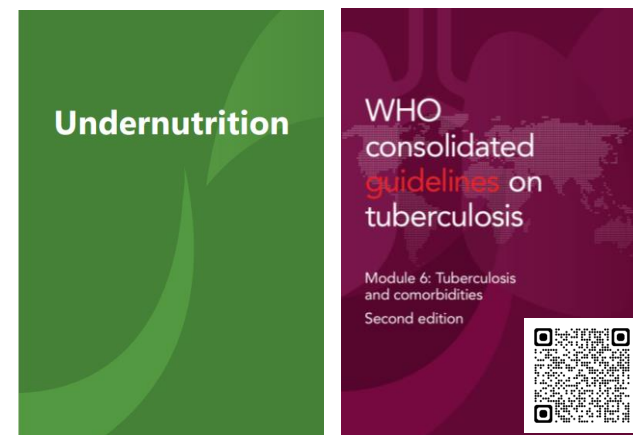
^b Structural risk factors for TB also include food insecurity.

Tuberculosis and comorbidities: Answer 5

5. Is this following statement true or false? Households affected by TB which are located in food insecure settings should be provided with food assistance.

True

Recommendations on TB and undernutrition



Nutritional assessment and counselling

1. At diagnosis and throughout treatment, all individuals with TB should be offered nutritional assessment and appropriate counselling based on their nutritional status.

(Existing recommendation with language edit: strong recommendation, no direct evidence available)

2. Household contacts of people with TB should be offered nutritional assessment and counselling as part of contact tracing. If undernutrition is identified, it should be managed according to WHO guidance.

NEW

(New recommendation: strong recommendation, low certainty of evidence)

Nutritional interventions to improve clinical outcomes for people with TB

3. Nutritional interventions^a should be offered to individuals with TB who have severe, moderate or mild undernutrition, as part of a comprehensive package of TB care.

NEW

(New recommendation: strong recommendation, low–moderate certainty of evidence)

4. A package of treatment adherence interventions^b may be offered for patients on TB treatment in conjunction with the selection of a suitable treatment administration option.

(Existing recommendation: conditional recommendation, low certainty of evidence)

5. One or more of the following treatment adherence interventions (complementary and not mutually exclusive) may be offered to patients on TB treatment or to health care providers:

- a) tracers or digital medication monitor *(conditional recommendation, very low certainty of evidence)*;
- b) material support^c to patient *(conditional recommendation, moderate certainty of evidence)*;
- c) psychological support to patient *(conditional recommendation, low certainty of evidence)*;
- d) staff education *(conditional recommendation, low certainty of evidence)*.

(Existing recommendation)

Food assistance to prevent TB in household contacts

6. In settings of food insecurity, food baskets in combination with multiple micronutrient supplements should be offered to all households of people with TB.^d

NEW

(New recommendation: strong recommendation, moderate certainty of evidence)

Micronutrient supplementation in people with TB

7. Vitamin D supplementation may be provided to people with TB in the context of rigorous research.

NEW

(New recommendation: conditional recommendation, low certainty of evidence)

TB screening in people with undernutrition and with food insecurity

8. In settings where the TB prevalence in the general population is 100/100 000 population or higher, systematic screening for TB disease may be conducted among people with a risk factor for TB^a who are either seeking health care or who are already in care.

(Existing recommendation: conditional recommendation, very low certainty of evidence)

9. Systematic screening for TB disease may be conducted among subpopulations with structural risk factors for TB.^b These include urban poor communities, homeless communities, communities in remote or isolated areas, indigenous populations, migrants, refugees, internally displaced persons and other vulnerable or marginalized groups with limited access to health care.

(Existing recommendation: conditional recommendation, very low certainty of evidence)

^a Undernutrition is a recognized risk factor for TB, and malnourishment is listed as one of the key risk factors to consider for TB screening.

^b Structural risk factors for TB also include food insecurity.

Tuberculosis and comorbidities: **Answer 6**

6. Evidence has demonstrated that food assistance to household contacts of people with TB in a food insecure setting reduced the risk of developing TB by:

- A. 19%**
- B. 29%**
- C. 39%**
- D. 49%**

Recommendations on TB and undernutrition

Nutritional assessment and counselling

1. At diagnosis and throughout treatment, all individuals with TB should be offered nutritional assessment and appropriate counselling based on their nutritional status.

(Existing recommendation with language edit: strong recommendation, no direct evidence available)

2. Household contacts of people with TB should be offered nutritional assessment and counselling as part of contact tracing. If undernutrition is identified, it should be managed according to WHO guidance.

(New recommendation: strong recommendation, low certainty of evidence)

NEW

Nutritional interventions to improve clinical outcomes for people with TB

3. Nutritional interventions^a should be offered to individuals with TB who have severe, moderate or mild undernutrition, as part of a comprehensive package of TB care.

(New recommendation: strong recommendation, low–moderate certainty of evidence)

NEW

4. A package of treatment adherence interventions^b may be offered for patients on TB treatment in conjunction with the selection of a suitable treatment administration option.

(Existing recommendation: conditional recommendation, low certainty of evidence)

5. One or more of the following treatment adherence interventions (complementary and not mutually exclusive) may be offered to patients on TB treatment or to health care providers:

- a) tracers or digital medication monitor *(conditional recommendation, very low certainty of evidence)*;
- b) material support^c to patient *(conditional recommendation, moderate certainty of evidence)*;
- c) psychological support to patient *(conditional recommendation, low certainty of evidence)*;
- d) staff education *(conditional recommendation, low certainty of evidence)*.

(Existing recommendation)

Food assistance to prevent TB in household contacts

6. In settings of food insecurity, food baskets in combination with multiple micronutrient supplements should be offered to all households of people with TB.^d

(New recommendation: strong recommendation, moderate certainty of evidence)

NEW

Undernutrition

WHO
consolidated
guidelines on
tuberculosis

Module 6: Tuberculosis
and comorbidities
Second edition



The nutritional intervention led to a **39%** (aIRR 0.61 [95% CI 0.43–0.85]) relative reduction in the rate of tuberculosis incidence (all forms) and to a 48% (0.52 [0.35–0.79]) relative reduction in the rate of microbiologically confirmed pulmonary tuberculosis in the intervention group.

Nutritional supplementation to prevent tuberculosis incidence in household contacts of patients with pulmonary tuberculosis in India (RATIONS): a field-based, open-label, cluster-randomised, controlled trial



Anurag Bhargava, Madhavi Bhargava, Ajay Meher, Andrea Benedetti, Banurekha Velayutham, G Sai Teja, Basilea Watson, Ganesh Barik, Rajeev Ranjan Pathak, Ranjit Prasad, Rakesh Dayal, Adarsh Kibballi Madhukeshwar, Vineet Chadha, Madhukar Pai, Rajendra Joshi, Dick Menzies, Soorya Swaminathan

Tuberculosis and comorbidities: **Answer 7**

7. Which of the following statements about the WHO recommended interventions for TB and comorbidities are correct?

- A. All people with TB should be screened for diabetes**
- B. Screening for hepatitis B and C is recommended when the prevalence of HepB surface antigen and HCV antibody positivity is more than or equal to 2%**
- C. Brief advice on tobacco cessation should be provided to all people attending TB care who smoke tobacco**
- D. A mental health assessment should be provided to all people with TB at the start of TB treatment**
- E. People living with HIV-associated TB should be offered a package of care for advanced HIV disease**
- F. All of the above**

TB and comorbidities

People with TB should be screened for diabetes at the start of their treatment, where resources for diagnosis are available. The type of screening and diagnostic tests should be adapted to the context of local health systems and the availability of resources, while awaiting additional evidence on the best screening and diagnostic approach or approaches. (Strong recommendation, low quality of evidence) (21)

In settings with a $\geq 2\%$ hepatitis B surface antigen (HBsAg) seroprevalence in the general population, all adults and adolescents should have routine access to and be offered HBsAg serological testing with linkage to prevention, care and treatment services.

General population testing approaches should make use of existing community- or health facility-based testing opportunities or programmes such as those at antenatal, HIV or tuberculosis clinics.

(Conditional recommendation, low-certainty evidence, 2017)

In settings with a $\geq 2\%$ HCV antibody (anti-HCV) seroprevalence in the general population, all adults and adolescents should have access to and be offered anti-HCV serological testing with linkage to prevention, care and treatment services.

General population testing approaches should make use of existing community- or facility-based testing opportunities or programmes such as HIV or tuberculosis clinics, drug treatment services and antenatal clinics.

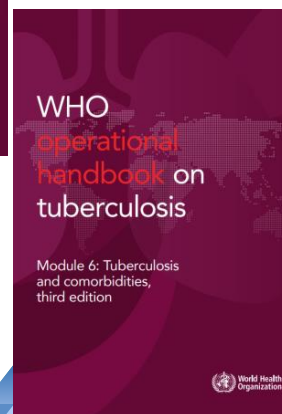
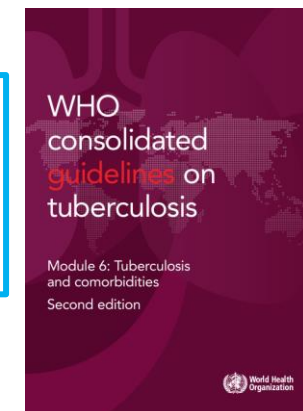
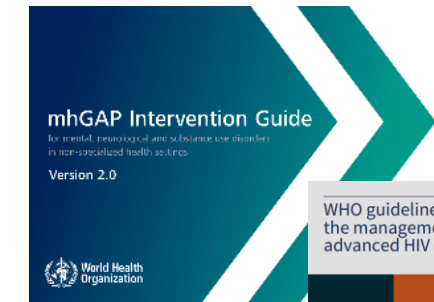
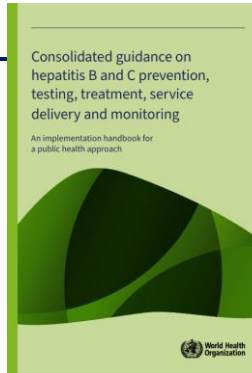
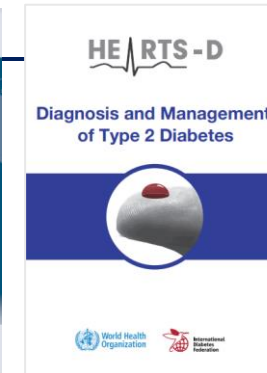
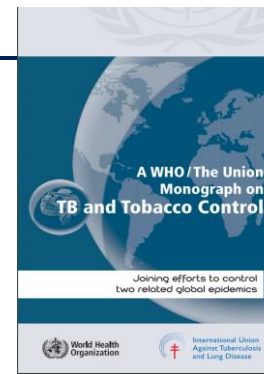
(Conditional recommendation, low-certainty evidence, 2017, updated 2024)

Mental health assessment recommended prior to or upon initiating treatment for TB, and at routine follow-up assessments*

**Note that this is not a formal WHO recommendation*

A package of interventions including screening, treatment and/or prophylaxis for major opportunistic infections, rapid ART initiation and intensified adherence support interventions should be offered to everyone presenting with advanced HIV disease. (2017)

Strong recommendation, moderate-certainty evidence



Summary of package of care for people with advanced HIV disease

Intervention	CD4 cell count	Adults	Adolescents	Children <10 years	Intervention	CD4 cell count	Adults	Adolescents	Children <10 years
Screening					Prophylaxis and presumptive treatment				
Systematic screening for TB disease	All people living with HIV	Yes	Yes	Yes	Co-trimoxazole prophylaxis	<350 cells/mm ³ or clinical stage 3 or 4	Yes	Yes	Yes
Cryptococcal antigen screening	Recommended for both <200 cells/mm ³ and <100 cells/mm ³	Yes	Yes	No		Any CD4 count in settings with high prevalence of malaria or severe bacterial infections			
Diagnosis					TB preventive treatment				
Diagnosis ^a of histoplasmosis with antigen testing	All people living with HIV	Yes	Yes	-	TB preventive treatment	All people living with HIV	Yes (3HP preferred)	Yes (3HP preferred)	Yes
Concurrent testing with low-complexity automated nucleic acid amplification tests (NAATs) on respiratory samples and LF-LAM on urine should be used as the initial diagnostic strategy for diagnosing TB	All people living with HIV	Yes, and/or seriously ill or have advanced HIV disease	Yes, and/or seriously ill or have advanced HIV disease	Yes, and use of low-complexity NAATs on stool samples	Fluconazole pre-emptive therapy for cryptococcal antigen-positive people without evidence of meningitis	Recommended for both <200 cells/mm ³ and <100 cells/mm ³	Yes	Yes	Not applicable (screening not advised)
ART					Counselling				
WHO guidelines on the management of advanced HIV disease					Rapid ART initiation	Any	Yes	Yes	Yes
					Defer if clinical symptoms suggestive of meningitis (TB or cryptococcal)	Any	Yes	Yes	Yes
					Tailored adherence counselling, home visits if feasible	<200 cells/mm ³	Yes	Yes	Yes

Thank you

Acknowledgements and for more information:
Annabel Baddeley - baddeleya@who.int

Colleagues within the Department of HIV, TB, Hepatitis and STIs including
Dr Tereza Kasaeva (Director), Dr Farai Mavhunga (Unit Head), Dr Matteo Zignol (Unit Head) and all other
colleagues who are leading or working on guidelines and operational handbooks

Tuberculosis and comorbidities: Groupwork

Choose the topics that are most applicable to your country context, related to national TB strategic plan and WHO guidance on TB/HIV and TB and comorbidities, for example:

- Political commitment (available budget, national strategic plans, national policies, advocacy carried out)
- Advocacy and community engagement (coordination mechanism, awareness campaigns, collaboration with affected communities, civil society/ TB survivors)
- **TB/HIV collaborative activities including:**
 - Screening of PLHIV for TB – using highly sensitive TB screening and diagnostic algorithms
 - HIV testing among people with presumptive TB and diagnosed TB
 - Linkage to ART for people with HIV-associated TB who are newly diagnosed with HIV
 - TB preventive treatment
 - TB diagnostic testing using concurrent testing i.e. mWRD plus LF-LAM
 - Package of care for people with advanced HIV disease
- Nutritional assessment and counselling for people with TB and household contacts in food insecure settings,
- Nutritional interventions for people with TB who are undernourished, food assistance for household contacts in food insecure settings
- Mental health assessment at start of TB treatment and linkage to mental health care, as needed
- Screening for other comorbidities/ risk factors i.e. viral hepatitis (B and C), diabetes, tobacco smoking, silicosis, etc.
- Capacity building (updated materials, training plan, trained staff, training conducted)
- Surveillance mechanisms in place with regular recording and reporting and data review
- Person-centred approach (psychosocial support, counselling, stigma reduction, free services, social protection)

2

Findings: lessons from implementation

What the group learned about programmatic implementation

Key achievements (up to 3)

- *[achievement 1]*
- *[achievement 2]*
- *[achievement 3]*

Key bottlenecks OR programmatic gaps

- *[bottlenecks/gaps 1]*
- *[bottlenecks/gaps 2]*
- *[bottlenecks/gaps 3]*

Best practices and enablers

- *[Enabler or good practice 1]*
- *[Enabler or good practice 2]*
- *[Enabler or good practice 3]*