REPUBLIC OF KENYA

MINISTRY OF HEALTH

GUIDELINES ON THE PROGRAMMATIC MANAGEMENT OF TUBERCULOSIS PREVENTIVE THERAPY (PMTPT)

DIVISIONS OF NATIONAL TUBERCULOSIS, LEPROSY & LUNG DISEASE PROGRAM & NATIONAL AIDS AND STI CONTROL PROGRAM - 2020

Ministry of Health
National Tuberculosis, Leprosy and Lung Disease Unit

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2020

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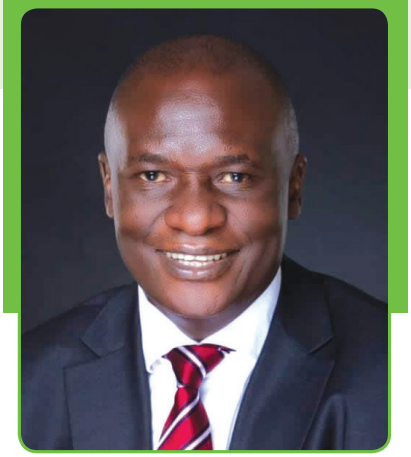
Foreword



Tuberculosis (TB) is one of the top 10 causes of death worldwide and the leading cause of death from a single infectious agent (ranking above HIV/AIDS). Globally, an estimated 10 million people fell ill from TB in 2019. There were an estimated 1.2 million TB deaths among HIV negative people and an additional 208,000 deaths among people living with HIV. It is estimated that one- quarter of the world's population is latently infected with TB bacteria, out of which 5-10% are at risk of progressing to TB disease.

Latent TB infection occurs when a person is infected with TB bacteria but does not exhibit any symptoms. Apart from being at risk of progressing to TB disease, people with latent TB infection may transmit TB when they develop the disease and become infectious. TB preventive therapy is offered to individuals who are considered at risk of developing TB disease in order to reduce the risk of progression to disease.

The first United Nations High Level Meeting (UNHLM) held in 2018, led to a political declaration on TB, whose targets included initiating at least 30 million people on TB Preventive Treatment. Kenya committed to put over 700,000 people with latent TB on preventive treatment between 2018 and 2022, including people living with HIV, close contacts of people with TB and other at-risk populations.

This guideline provides a comprehensive approach to the management of Latent TB Infection as a key component of the End TB strategy by 2035 in Kenya. This will be achieved through the systematic implementation of evidence-based interventions to identify the at-risk populations, timely screening and testing for TB, offer appropriate and effective treatment for either active TB or LTBI and support these individuals throughout their treatment journey and beyond.

The development of this guideline has been a participatory process involving various stakeholders and it is my belief that it will provide additional drive to the efforts of ending TB in Kenya.

Dr. Patrick Amoth, EBS
Ag. Director General
Ministry of Health

Acknowledgement

The development of this Programmatic Management of Tuberculosis Preventive Therapy (PMTPT) guideline involved stakeholders' engagement and adaptation of World Health Organization (WHO) guidelines on TB preventive therapy to fit the country context.

The Ministry of Health wishes to acknowledge the immerse contribution of various organizations and individuals listed below for their efforts in this process. We take note of the support from the office of the Cabinet Secretary, the Principal Secretary, Head of Directorate of Medical Services / Preventive and Promotive Health, the Head, Department of National Strategic Public Health Programs and County Governments.

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Executive summary

Tuberculosis (TB) is one of the top 10 causes of death worldwide and the leading cause of death from a single infectious agent (ranking above HIV/AIDS). Globally, an estimated 10 million people fell ill from TB in 2019. There were an estimated 1.2 million TB deaths among HIV negative people and an additional 208,000 deaths among HIV positive people. It is estimated that one- quarter of the world's population is latently infected with TB bacteria.

Approximately 5-10% of people with LTBI develop active TB disease during their lifetime, usually within the first five years. However, this risk increases several fold in the presence of immunosuppressive conditions like HIV. Preventive treatment can avert the development of active TB disease with efficacy ranging from 60-90%.

The Ministry of Health, Kenya, has reviewed its TB Preventive Therapy (TPT) guidelines to be in line with the recent World Health Organization recommendation. This includes an expanded at-risk population and more treatment options; the population targeted to benefit from TPT now includes adults, adolescents, children and infants living with HIV, household contacts of bacteriologically confirmed pulmonary TB patients, health care workers, prisoners and prison staff and other clinical risk groups like patients on immunosuppressive therapy, people on renal replacement therapy (dialysis), those preparing for organ or haematological transplant and patients with silicosis.

The TPT guideline recommends that tuberculosis should first be ruled out by screening for the cardinal symptoms of TB (for adults: cough of any duration, fever, weight loss or night sweats; for children: cough of any duration, failure to thrive/ poor weight gain, fever, reduced playfulness). LTBI testing is not a requirement to initiating TPT in Kenya. Where available, testing for LTBI using either the tuberculin skin test (TST) or the interferon gamma release assay (IGRA) should be carried out before TPT is initiated.

Persons aged 15 years and above who screen negative for TB disease, regardless of their HIV status, should be treated with a weekly combination of Isoniazid and Rifapentine for 3 months (3HP). Children aged <15 years should be treated with a daily dose of Rifampicin and Isoniazid for 3 months (3RH) if HIV negative or a daily dose of Isoniazid monotherapy for 6 months (6H) if HIV infected. Anyone with a contraindication to 3HP or 3RH should be provided with 6H regimen.

In the implementation of this guideline, other important considerations will include monitoring for adverse events, enhancing adherence and strengthening the capacity of Health care workers. This will be supported by a comprehensive monitoring and evaluation system.

List of abbreviations

3HP	Weekly dose of Rifapentine plus high dose Isoniazid for 12 weeks
3RH	Three months of daily Rifampicin plus Isoniazid
6H	Six months of daily isoniazid monotherapy
ADR	Adverse Drug Reaction
ART	Antiretroviral Therapy
ARVs	Antiretroviral Drugs
BCG	Bacille Calmette-Guérin (vaccine)
CALHIV	Children and Adolescents Living with HIV
CXR	Chest radiograph
DILI	Drug-induced Liver Injury
FDC	Fixed-Dose Combination
HIV	Human Immunodeficiency Virus
IGRA	Interferon-Gamma Release Assay
INH	Isoniazid
IPT	Isoniazid Preventive Treatment
KHIS	Kenya Health Information System
LTBI	Latent Tuberculosis Infection
MTB	Mycobacterium Tuberculosis
PLHIV	People living with HIV
RIF	Rifampicin
RPT	Rifapentine
TPT	Tuberculosis Preventive Treatment or Therapy
TST	Tuberculin Skin Test
TB	Tuberculosis
UNHLM	United Nations High Level Meeting on Tuberculosis
WHO	World Health Organization

Definition of terms

Note: The definitions listed below apply to the terms as used in these guidelines. They may have different meanings in other contexts

Adolescent: A person aged 10–19 years

Adult: A person aged 15 years and above

Asymptomatic: A state of not showing any symptoms related to a given disease. In TB, asymptomatic refers to not showing any symptoms related to TB disease.

Bacteriologically confirmed TB: TB diagnosed through testing of a biological specimen by smear microscopy, culture or a WHO-approved molecular test such as Xpert® MTB/RIF or Ultra

Child: A person aged 0–14 years

Contact: An individual who has been exposed to a person with tuberculosis

Index person with of TB: A person with TB disease and whom contact investigation is centered.

Contact investigation: A systematic process for identifying previously undiagnosed people with TB among the contacts of an index person with TB which consists of identification, prioritization and clinical evaluation of these persons. It may also include testing for LTBI to identify candidates for TB preventive treatment**.**

False Positive: A result that indicates that a given condition is present when it is not

False Negative: A result that indicates that a given condition is absent when indeed it is present

Household contact: A person who shared the same enclosed living space as the index person with TB for one or more nights **or for frequent or extended daytime periods** during the 3 months before the start of current treatment.

Infant: A child under 1 year (12 months) of age

Latent tuberculosis infection (LTBI): A state of persistent immune response to stimulation by *M. tuberculosis* antigens with no evidence of clinically manifest active TB. This is also at times referred to as TB infection. Most infected people have no signs or symptoms of TB but are at risk of developing TB disease.

People who use drugs: People who engage in the harmful or hazardous use of psychoactive substances, which could impact negatively on the user's health, social life, resources and legal situation.

Programmatic Management of Tuberculosis Preventive Therapy (PMTPT): All coordinated activities by public and private health caregivers and the community aimed at scaling up TB preventive treatment to people who need it.

Sensitivity: This is the ability of a test to correctly identify those with the disease (true positive rate)

Specificity: This is the ability of the test to correctly identify those without the disease (true negative rate)

Symptomatic: A state of having or showing features characteristic of a given disease. In TB, symptomatic refers to having symptoms pertinent with active TB disease e.g., cough, fever, night sweats, weight loss and/or reduced playfulness in children.

TB preventive therapy (TPT): Treatment offered to individuals who are considered at risk of TB disease in order to reduce that risk. Also referred to as treatment of TB infection, LTBI treatment or TB preventive therapy.

Tuberculosis (TB): The disease state due to *M. tuberculosis*. In this document, it is commonly referred to as "active" TB or TB "disease" in order to distinguish it from TB infection.

Underweight: in adults usually refers to a body mass index <18.5, in children 5-17 years BMI for age z-scores <-2 and children 6-59 months a z-score<-2.

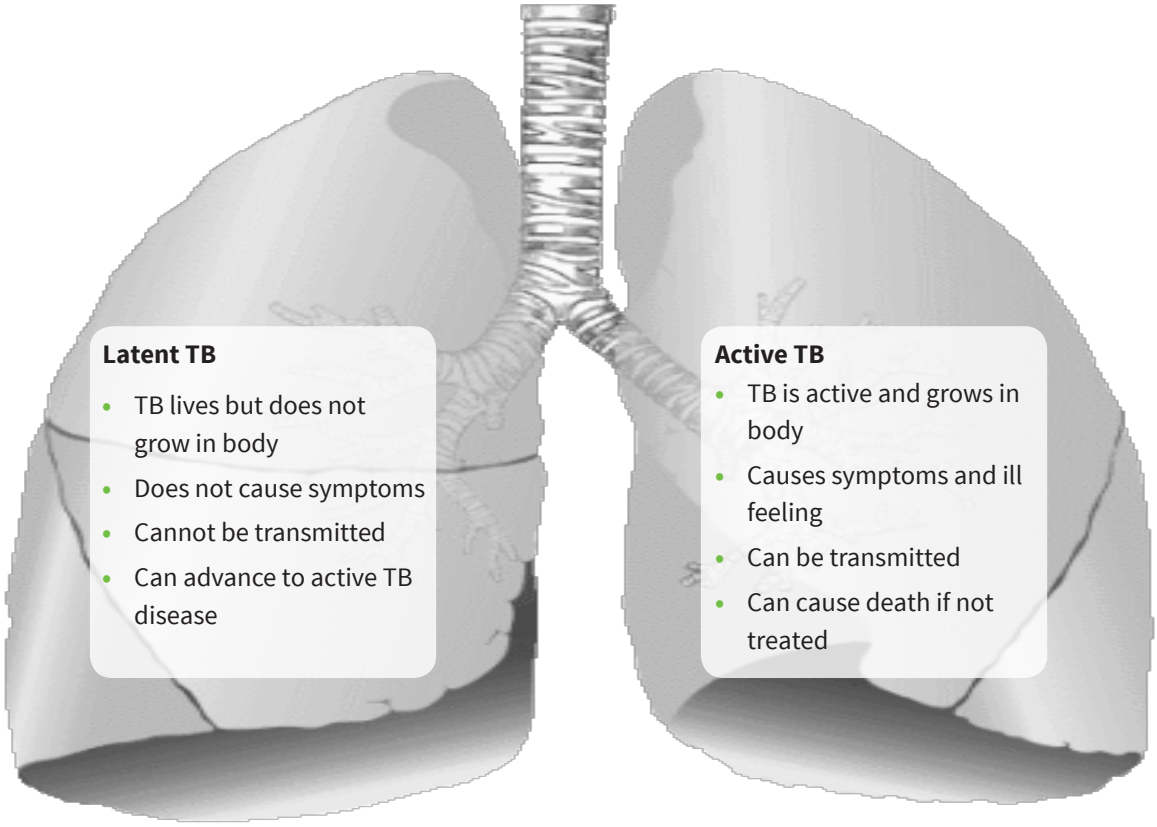
1 Target Population for Tuberculosis Preventive Therapy

1.1 Introduction

Latent TB infection (LTBI) is defined as a state of persistent immune response to stimulation by Mycobacterium tuberculosis (MTB) antigens without evidence of clinically manifest active TB. Studies have shown that, on average, 5–10% of those infected with MTB will develop active TB disease over the course of their lives, usually within the first 5 years after initial infection. The risk for active TB disease after infection depends on several factors, the most important being immunological status such as HIV, severe malnutrition, immunosuppressive therapy, etc. TB Preventive therapy (TPT) is a critical component of the WHO's End TB Strategy and it is an effective intervention to avert the development of active TB disease, with efficacy ranging from 60% to 90%.

When a person inhales air that contains droplets with MTB bacilli, most of the larger droplets become lodged in the upper respiratory tract (the nose and throat). However, smaller droplet nuclei may reach the small air sacs of the lung (the alveoli), where infection may begin. In the alveoli, some of the tubercle bacilli are killed, but a few multiply and enter the bloodstream and spread throughout the body. The body's immune system usually intervenes within 2-8 weeks, halting multiplication and preventing further spread. At this point, the person has latent TB infection (LTBI).

Figure 1: Difference between Latent TB Infection and Active TB Disease



1.2 Risk factors for Latent TB infections

- High prevalence of TB disease in population
- Smear positivity of cases in population (infectivity of cases)
- Type of TB disease
- Proximity and duration with the infectious cases
- Environmental factors e.g poor ventilation, overcrowding
- Immunocompromised patients (HIV, patient on dialysis, diabetic, organ transplant patients, Patient using immunosuppressive drugs)

1.3 Targeted Population for TPT

The selection of the population at risk described in this chapter for programmatic management of LTBI has taken into consideration the epidemiology, evidence and patterns of transmission of TB in the country, and balances the risks and benefits to the individual. TPT is offered to individuals who are considered at risk of TB disease in order to reduce that risk. Unless otherwise indicated, TPT should be offered once in a lifetime in these population.

1.3.1 Population for TPT

These include;

a) People living with HIV (PLHIV)
b) All household contacts of persons with bacteriologically confirmed pulmonary TB
c) Prisoners and staff working in prison settings
d) Health care workers and other staff in healthcare settings
e) Clinical risk groups
    i. Patients on treatment for cancer
    ii. Patients on dialysis
    iii. Patients undergoing organ or haematological transplant
    iv. Patients with silicosis

NB- The country is not yet recommending TPT for contacts of multidrug-resistant (MDR) or extensively drug-resistant TB.

1.3.2 Population excluded from TPT

i. Persons with diabetes
ii. Those who inject drugs
iii. The homeless
iv. Immigrants from high TB burden countries

Unless they belong to other risk groups above

a) People Living with HIV

People living with HIV (PLHIV) have a higher risk of getting TB disease compared to the general population. The likelihood of progression from TB infection to active disease depends on bacterial, host, and environmental factors. HIV infection is the strongest risk factor associated with the development of active TB, resulting in up to 50% lifetime risk of progressing to TB disease after exposure. PLHIV also have approximately 21 times higher risk of TB disease compared to the HIV negative persons.

According to Kenya Health Information System, approximately 2% of PLHIVs get infected with TB annually. In Kenya, mortality among HIV-infected TB patients during TB treatment is three times more than the HIV-uninfected TB patients. TB continues to be the number one cause of death among PLHIV, contributing up to one-third of deaths despite increased antiretroviral therapy (ART) coverage.

Early initiation of TPT among PLHIV reduces the overall risk of TB occurrence by 33%-64%. ART alone reduces TB incidence by 70-90% and TB mortality by 50%. TPT when given with ART reduces the risk of TB by 89% and the risk of mortality by 70%. To reduce mortality and risk of progression to TB among PLHIV, preventive TB therapy is critical. Adults, adolescents and children living with HIV who do not have active TB should receive TB preventive therapy as part of a comprehensive package of HIV care. TPT should be given to these individuals irrespective of the degree of immunosuppression, ART status, previous TB treatment or pregnancy.

A Tuberculin skin test (TST) or Interferon-Gamma Release Assay (IGRA) test is not a prerequisite for initiation of TB preventive therapy for PLHIV.

Summary of recommendations

- TB preventive therapy should be given to all PLHIV above 12 months of age who do not have active TB disease. This should be done irrespective of immune status, ART status, previous history of TB and pregnancy status.
- Children aged <12 months living with HIV who are household contacts of a person with bacteriologically confirmed pulmonary TB, and whom active TB has been ruled out should receive TB preventive therapy.
- TPT may be given immediately following successful completion of TB treatment among the PLHIV.
- Repeat TPT is not recommended among PLHIV except if a PLHIV becomes a household contact of a person with bacteriologically confirmed pulmonary TB

b) Household contacts of bacteriologically confirmed pulmonary TB patients

Systematic reviews conducted by WHO showed that prevalence of LTBI was higher among persons above 5 years of age compared to children below 5 years. However, children below 5 years are at a higher risk of progression to active TB disease. Nevertheless, all household contacts, regardless of their age or LTBI status were at a significant higher risk of progression to TB disease when compared to the general population.

Symptomatic evaluation for ruling out active TB is recommended for this population who may also be provided with TST, IGRA or any radiologic investigations based on the clinical findings. Although an LTBI test may be justifiable among those aged 5 years and above before initiation of TPT, this should not hinder provision of TPT as the prevalence of LTBI and the risk of progression to active TB disease is higher in this population. Any contacts presumed to have active TB should be appropriately investigated.

Summary of recommendations

- All household contacts of bacteriologically confirmed pulmonary TB should be given TB preventive therapy after ruling out active TB disease. This is irrespective of age or HIV status
- Active TB disease should be ruled out with appropriate clinical evaluation and testing in accordance with the National guidelines.
- Testing for LTBI among Adults, adolescents and children contacts aged ≥5 years is not mandatory and should not hinder initiation of TPT.

NB - Screening of DRTB Contacts shall continue, however TPT shall not be offered to this group until further guided.

c) Prisoners and staff working in prison settings

The Stop TB Partnership estimates that the global risk of TB in prison on average is 23 times higher than in the general population. Late diagnosis, inadequate treatment, overcrowding, poor ventilation and repeated prison transfers encourage the transmission of TB infection. HIV infection and other pathologies (e.g. malnutrition, substance abuse etc) in prisons encourage the progression of latent TB to active disease and further transmission of infection. Due to constant interaction with the prisoners, staff working in prison settings are also at an increased risk of TB infection and eventually TB disease.

It is important to not only seek to identify active TB disease amongst this population but also prevent TB. Prisoners should be screened for TB at entry to prison and thereafter bi-annually. TPT should be given to those incarcerated for at least 3 months to ensure completion. Staff working in prison settings should also be routinely screened for active TB every 6 months. Those without active TB disease should be put on a course of TPT once in their lifetime. This has to be accompanied by routine follow up among those initiated on TPT to ensure completion.

Summary of recommendations

- Prisoners should be screened for active TB disease at entry into prisons and at least bi-annually. Staff working in prison settings should also be screened for active TB at least bi-annually. Those found to be asymptomatic for TB should be offered TPT while those found with TB symptoms should be offered TB diagnostic services and managed appropriately.
- Prisoners incarcerated for at least 3 months and whom active TB has been ruled out should be provided TPT.
- Staff in prison settings in whom active TB has been ruled out should be provided a course of TPT once in their lifetime.

d) Health workers and other staff in healthcare settings

For the purposes of TB prevention in Kenya, the definition of health care workers extends beyond those frequently engaged in direct clinical and nursing care to include even those in administrative and clerical duties. It also includes students who are in their clinical years or interact with patients frequently. This broad definition thus includes, and is not limited to, doctors (including those in administrative roles), clinical officers, nurses, laboratory technologists, radiographers, community health workers, students (especially those in clinical years), paramedical staff (e.g., public health officers, physiotherapists, community health volunteers, occupational therapists), support staff (including clerical officers, casual workers, drivers, receptionists, telephone operators) among others.

Healthcare workers face a two- to three-fold increased risk of developing TB compared with the general population due to frequent and prolonged exposure to undiagnosed persons with TB in the workplace. The increased risk is also attributed to close contact with TB patients and TB specimens in the line of duty.

The risk appears particularly high when there is increased exposure combined with inadequate infection control measures. A study on tuberculosis risk among staff of a large public hospital in

Kenya showed that the annual incidence of TB is associated with factors that include long hours spent in rooms with patients, working in areas where TB patients received care and HIV infection. Undiagnosed TB amongst patients also increases the risk of TB amongst this population. In health facility settings, effective TB infection control would be beneficial.

All healthcare workers should be regularly screened for TB (at least bi-annually) and adhere to infection prevention and control measures. Active TB disease has to be ruled out prior to initiating TPT. Those found to be asymptomatic for TB should be offered TPT while those found with TB symptoms should be investigated for TB. It is also advisable that healthcare workers know their HIV status.

Summary recommendations

- All healthcare workers should be screened for TB at least bi-annually.
- All healthcare workers found not to have active TB on routine screening should be offered TPT at least once in the course of their lifetime.

e) Other populations at risk

Tuberculosis is among the prevalent infections in immunocompromised patients. They are at an increased risk of TB infection progressing to TB disease. Therefore, early diagnosis and treatment of LTBI in these patients is essential to prevent its progression to disease. With regard to LTBI management, the clinical risk groups in need of TPT include:

1. Patients initiating chemotherapy or those on certain immunosuppressive drugs
2. Patients receiving dialysis
3. Patients preparing for an organ or hematological transplant
4. Patients with silicosis

NB - TPT is not recommended for people with diabetes, people with harmful alcohol use, tobacco smokers and underweight people unless they belong to the other risk groups.

f) TPT in Pregnancy

Pregnancy may increase the risk of LTBI progression to active TB therefore women who are pregnant should not be exempted from TPT if they fall in the at risk population. Several studies have shown that TPT is safe in pregnancy. Given the negative consequences of TB disease during pregnancy for the mother and the fetus, it is therefore recommended that they also receive TPT. TPT should not be delayed on the basis of pregnancy alone, even during the first trimester.

2 Diagnosis of Latent TB Infection

Symptomatic screening for TB should be carefully and thoroughly done by a healthcare worker before offering TPT. Active TB disease should be excluded with a high level of certainty before initiating TPT to avoid suboptimal treatment of TB.

To ascertain the absence of TB disease, the first step is a good clinical evaluation i.e. medical history and physical examination. TB disease should be suspected in persons who have any of the following TB cardinal symptoms:

In adults;

- Cough of any duration
- Night sweats
- Unexplained weight loss
- Fever

In children;

- Cough of any duration
- Fever/ night sweats
- Failure to thrive/ poor weight gain
- Reduced playfulness

If TB disease is in other parts of the body (extra pulmonary), symptoms will depend on the area affected.

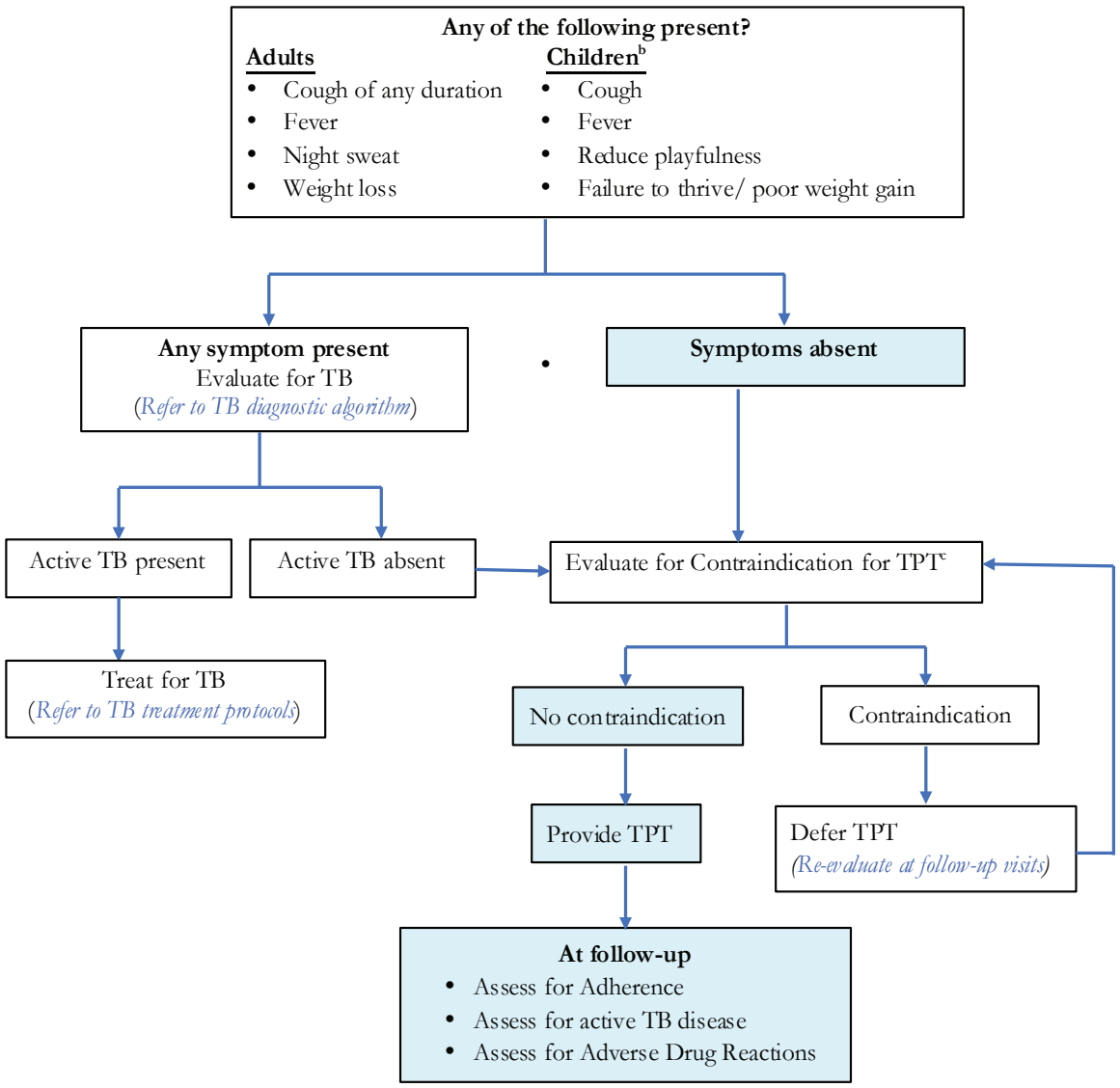
TB diagnostic tests should be offered to those who have any of the TB-related symptoms. Other differential diagnoses in those presenting with TB-like symptoms should be considered and investigated in accordance with the national guidelines. TPT may be offered in individuals who presented with TB-like symptoms and active TB has been ruled out. The alternative diagnoses must be managed appropriately.

Testing for LTBI

Tuberculin skin test (TST) or interferon-gamma release assay (IGRA) can be used to test for LTBI, where available. However, there is no gold standard test for LTBI and the absence or unavailability of these tests should not hinder uptake of TPT in any of the at-risk populations.

Note: LTBI testing using TST or IGRA, or even assessment with chest radiography is not mandatory and should not be a hindrance for initiating TPT.

Algorithm for Tuberculosis Preventive Therapy (TPT) in individuals at risk[a]



TPT Treatment Options			
Age category	**HIV status**	**Treatment Options**	**Frequency[d]**
<15 years	HIV negative	3RH (Rifampicin/Isoniazid)	Daily for 3 months
	HIV positive	6H (Isoniazid)	Daily for 6 months
≥15 years	Regardless of HIV status	3HP (Isoniazid/Rifapentine)	Once weekly for 3 months
If 3HP or 3RH is contraindicated or In Pregnancy		6H	Daily for 6 months
Pyridoxine is given with all of the above options (Once a week for those on 3HP and daily for those on RH and Inh)			

Note:

a. Individuals at risk are: PLHIV, household contacts of bacteriologically confirmed pulmonary TB, healthcare workers, prisoners, patients on dialysis, on cancer treatment, undergoing organ or haematological transplant and those with silicosis
b. Child – a person under the age of 10 years
c. Contra-indications for TPT include active hepatitis (*acute or chronic*), symptoms of peripheral neuropathy and chronic alcohol abuse
d. Refer to dosing charts for appropriate dose

LTBI testing by TST or IGRA is not a requirement for initiating TPT in PLHIV and child household contacts aged <5 years. However, it *may* be provided prior to TPT to the rest of the at-risk population if available and does not delay or hinder access to TPT.

Fig 2: Algorithm for Tuberculosis Preventive Therapy (TPT) in individuals at risk

3 Treatment of LTBI

LTBI can be treated effectively to prevent progression to active TB, thus resulting in a substantial benefit to both the individual and the community. The treatment is for infection with strains of *Mycobacterium Tuberculosis* that are presumed to be drug-susceptible.

The selection of a treatment regimen should be based on an individual's assessment of risks and benefits. This should follow a patient centered approach and includes pre-treatment preparation, counseling and provision of health education to optimize compliance and adherence to treatment.

3.1 Initiation of TPT

3.1.1 Patient Preparation

Before initiation of TPT, eligible persons should be subjected to symptom-based screening to rule out active TB disease. Persons screening negative for TB disease and are eligible, should be initiated on the appropriate regimen.

The following factors should be considered in selecting TPT regimen

- Co-existing medical conditions
- Potential for drug-drug interactions
- Age

3.1.2 The recomended regimens for TPT are:

- Isoniazid and Rifapentine weekly for 3 months (3HP)
- Rifampicin and Isoniazid daily for 3 months (3RH)
- Isoniazid daily for 6 months (6H)

3.1.3 Contraindications to TPT

1. Active TB disease
2. Active hepatitis (regardless of transaminase levels)
3. Active substance abuse or regular alcohol consumption
4. Peripheral neuropathy: In adults and older children – persistent numbness, tingling or burning sensation in limbs; In younger children – regression in motor milestones, refusal to crawl, walk or run.
5. Contacts of patients with drug-resistant TB

If the client has any of the above contraindications, defer TPT and manage the underlying cause.

History of TB and current pregnancy should not be contraindications to starting TB preventive therapy.

Table 1: Recommended regimens for TPT

TPT Regimen	Indications	Further considerations
Rifapentine and isoniazid (3HP) Once Weekly for three months (*12 doses*)	• Adult PLHIVs excluding patients on PI-based ARV regimens • All household contacts of Bacteriologically confirmed pulmonary TB patients, who are aged ≥15 years • Health care workers • Prisoners and staff in prison settings • Other adult population at risk (e.g., patients undergoing chemotherapy, patients on dialysis, patients undergoing transplant, patients with silicosis)	• There is currently insufficient data to support the use of RPT and INH in pregnancy • Rifapentine can decrease levels of hormonal contraception • INH should not be given to persons with known pre-existing liver damage to avoid an additive effect on liver dysfunction • INH can cause peripheral neuropathy. Vitamin B6 helps prevent peripheral neuropathy
Rifampicin plus Isoniazid (3RH) Daily for 3 Months (*84 doses*)	• HIV negative children aged <15 years who are contacts of Bacteriologically confirmed pulmonary TB patients	
Isoniazid (6H) Daily for 6 months (*168 doses*)	• Adult PLHIV on PI-based ARV regimens • All CLHIV aged below 15 years • Any patient with intolerance or contraindication to 3HP or 3RH • Pregnant women	

NB:

- Patients on TPT should receive pyridoxine while taking isoniazid-containing regimens. (Once a week for those on 3HP and daily for those on RH and Inh)
- *Ensure availability of medicines for the entire treatment period before initiation.*

Table 2: Treatment options and Common side effects

Treatment Option	Common side Effects
INH daily for 6 months [6H]	• Hepatotoxicity • Peripheral neuropathy • Mild skin rash (including the acneiform facial rash)
RPT + INH weekly for 3 months [3HP]	• Hepatotoxicity • Peripheral neuropathy • Gastro-intestinal intolerance • Orange-red discloration of body fluids, e.g., of urine
RIF + INH daily for 3 months [3RH]	• Hepatotoxicity • Peripheral neuropathy • Gastro-intestinal intolerance • Orange-red discolouration of body fluids, e.g., of urine • Mild skin rash

Table 3: Dosage schedule for TPT Regimens

A. Daily INH for 6 months (6H)			
Weight (kg)	**Dose (mg)**	**Number of 100mg INH tablets**	**Number of 300mg (Adult) tablet**
<5	50	½ tablet	-
5.1-9.9	100	1 tablet	-
10-13.9	150	1 ½ tablet	½ tablet
14-19.9	200	2 tablets	-
20-24.9	250	2 ½ tablet	-
≥25	300	3 tablets	1 tablet
Adult	300	3 tablets	1 tablet
Note: Syrup INH (50mg/5ml) is available for younger children			

B1. Daily RH for 3 months (3RH) for children <25kgs		
Weight (kg)	**Number of tablets (RH 75/50mg)**	**How to reconstitute the medicine**
Less than 2	¼	Dissolve one (1) tablet of RH in 20 ml of safe drinking water. Once fully dissolved, give 5ml (1/4) of this solution measured with a syringe.
2 – 2.9	½	Dissolve one (1) tablet of RH in 20 ml of safe drinking water. Once fully dissolved, give 10ml (1/2) of this solution measured with a syringe.
3 – 3.9	¾	Dissolve one (1) tablet of RH in 20 ml of safe drinking water. Once fully dissolved, give 15ml (3/4) of this solution measured with a syringe.
After giving the child their dose for that day, discard the rest of the solution. Prepare a fresh solution every day.		
4-7.9	1	Dissolve the tablet(s) of RH in 20mls of safe drinking water. Once fully dissolved, give ALL this solution to the child
8-11.9	2	
12-15.9	3	
16-24.9	4	

B2. Daily RH for 3 months (3RH) for children ≥25kgs (To use Adult formulation)	
Weight (kg)	**Number of tablets (RH 150/75 mg)**
25-39.9	2
40-54.9	3
55kg and above	4

C. Weekly 3HP (3HP) (For adults and adolescents ≥15 years)	
3HP products	**No of Tablets**
Rifapentine 150mg tabs	6
Isoniazid 300 mg tabs	3
Rifapentine 300mg+Isoniazid 300mg (FDC)	3

D. Dosage of Pyridoxine (Vitamin B6)			
Weight (kgs)	**Dosage in mg**	**Number of 25mg tablets**	**Number of 50mg tablets**
<5	6.25 mg	½ Tablet 3 times a week, alternate days	-
5.0-7.9	12.5 mg	Half a tablet	-
8.0-14.9	25 mg	One tablet	Half of 50mg tablet
15kg and above	50 mg	Two tablets	One 50mg tablet
Adults	50 mg	Two tablets	One 50mg tablet

3.2 Common drug-drug interactions with TB Preventive Therapy

Below are the common drug-drug interactions expected with TB preventive therapy.

Table 4: Common Drug-Drug Interactions with TB Preventive Therapy

Drug Affected	Rifapentine	Management
LPV/r and ATV/r	Decreases significantly the levels of LPV/r and ATV/r	• Avoid co-administration • Offer 6H as TPT
Hormonal contraceptives	Decreases the levels of oral and implant contraceptives	Use non-hormonal methods or Use barrier methods
Quinine, Artemether and Lumefantrine	Decreases the level of Antimalarials significantly	If a patient is diagnosed with malaria but is not yet on TPT, decisions regarding 3HP initiation should be delayed until the episode of malaria has resolved.
RAL, EFV, DTG	No interactions expected	No dose adjustment required

3.3 Management of Drug Toxicities

The Management of drug toxicities should be based on severity, with appropriate grading of individual patients. The most common adverse drug reactions associated with TPT are: peripheral neuropathy, drug-induced liver injury (DILI), and rash.

3.3.1 Peripheral Neuropathy - *Suspected drug: INH*

Diagnosis of Peripheral Neuropathy

- Rarely severe enough to require drug withdrawal
- Symptoms include; burning sensation, numbness, or tingling, usually starting at the feet on both sides
- May have decreased sensation on examination
- May develop weakness in severe cases
- May be potentiated by other neurotoxic drugs, alcoholism, metabolic disease (e.g., diabetes), malnutrition and infections

Management of INH-induced Peripheral Neuropathy

- Increase the dose of pyridoxine to 100 – 200 mg per day depending on severity
- For children give double the standard weight-based dose
- Relief of symptoms can be done using Analgesics, Tricyclic antidepressants (amitriptyline, nortriptyline), Anticonvulsants (carbamazepine, phenytoin)
- If symptoms do not improve, or there is any worsening, then discontinue INH

3.3.2 Drug-Induced Liver Injury (DILI) -*Suspected drugs include INH, RPT, R*

- Elevation of liver enzymes may occur in the first weeks of treatment
- Serum liver enzyme levels do not need to be monitored routinely, as asymptomatic mild elevation of serum liver enzymes (less than five times the normal values) is not an indication to stop treatment
- All clients with gastrointestinal symptoms (nausea and vomiting, liver tenderness, hepatomegaly or jaundice) should have their liver function assessed
- Patients should be screened for other causes of liver Injury (the hepatitis viruses-A, B, C), and no attempt should be made to reintroduce these drugs until liver functions have normalized. An

expert with experience in managing drug-induced hepatotoxicity should be involved in the further management of such cases

Diagnosis of DILI

- Abdominal pain, nausea, vomiting
- Abnormal liver enzyme (following a hepatitis pattern or mixed pattern)

Table 5: Grading and management of Hepatitis

	Grade 1: Mild	Grade 2: Moderate	Grade 3: Severe	Grade 4: Life threatening
ALT (SGPT)	*1.25 – 2.5 x ULN*	*2.6 – 5.0 x ULN*	*5.1 – 10.0 x ULN*	*> 10.0 x ULN*
AST (SGOT)	*1.25 – 2.5 x ULN*	*2.6 – 5.0 x ULN*	*5.1 – 10.0 x ULN*	*> 10.0 x ULN*
ACTION	Continue treatment regimen; Patients should be followed until resolution (return to baseline) or stabilization of AST/ ALT elevation.	Continue treatment regimen; Patients should be followed until resolution (return to baseline) or stabilization of AST/ALT elevation.	Stop all drugs, including TPT drugs; Measure LFTs weekly; Treatment may be reintroduced after toxicity is resolved.	Stop all drugs, including TPT drugs; Measure LFTs weekly. Treatment may be reintroduced after toxicity is resolved

3.3.3 Management of TPT-associated Rash - *Suspected drugs include INH, RPT, R*

- Flu-like and other systemic hypersensitivity reactions are rare amongst children. Hypersensitivity reactions in adults are usually mild and self-limiting
- More serious reactions are thought to be rare
- A rash may occasionally develop, usually within a few days following initiation of TPT. It is often a relatively mild maculopapular rash with or without pruritus. Rarely, rash may develop with severe exfoliation of the skin and Stevens-Johnson syndrome.
- Rash severity should be assessed and managed appropriately.

Table 6: Management of TPT-Associated Skin Rash

Severity	Characteristics	Action
Mild	Dry; erythema +/- fine papules; pruritus; affecting < 50% of body surface area	Continue TPT; close monitoring; symptomatic treatment with antihistamines +/- topical steroids (NOT oral steroids)
Moderate	Dry; erythema +/- fine papules; pruritus; affecting ≥ 50% of body surface area	Stop TPT; symptomatic treatment with antihistamines +/- topical steroids (NOT oral steroids); trial of desensitization after symptoms completely resolved
Severe	Mucosal involvement; blistering; associated fever; any % of body surface area	Stop TPT; admission to hospital for supportive management (IV fluids, wound care, pain control, infection control, monitoring for super-infection); **patient should NEVER be re-challenged;** document and report adverse event and issue patient alert card

3.3.4 Reporting Adverse Events

Clients starting TPT should be educated on its potential side effects and adverse events. ADRs can have a significant impact on client's adherence and must be identified early and managed aggressively. All ADRs should be reported to the Pharmacy and Poisons Board using existing pharmacovigilance tools (http://www.pv.pharmacyboardkenya.org/).

3.4 Management of TPT interruptions

Below is a table presenting various scenarios of TPT interruptions and how to manage them

Table 7: Managing interruptions for TPT

Scenario	Action
1. For a client initiated on TPT and discontinues for any reason within the first 4 weeks 2. For a client on TPT for more than 28 days and subsequently misses TPT doses for more than 2 weeks	• Conduct adherence counseling • Address reasons for interruptions • Screen for active TB and if asymptomatic **restart TPT** • Ensure they have completed a full course of treatment • For the weekly doses, take the missed dose as soon as they remember
3. For a client on TPT for more than 28 days and subsequently misses TPT doses for less than 2 weeks (<28 days)	• Conduct adherence counseling • Address reasons for TPT interruption • Screen for active TB and if asymptomatic **continue with TPT** and compensate for the duration doses were missed • Ensure they have completed a full course as per the national guidelines
4. For a client with maximum two TPT interruptions	• Do not re-initiate on TPT

3.5 Post-treatment follow-up

The healthcare worker should re-educate the patient on the signs and symptoms of TB and encourage the patient to present to a health facility whenever s/he experiences any of these symptoms.

Instruct the patient that s/he will be required to visit the health facility for routine assessments at the 6th and 12th month post-completion of TPT.

TPT Outcomes

At the end of scheduled duration of a TPT regimen one of the following outcomes should be document in client/patient case file and/ or TPT register where available. Following are the likely outcomes:

1) **Completed** – an individual who has completed the prescribed duration of treatment and remained well or asymptomatic during the entire period.
2) **Lost to follow-up** – an individual who interrupted TPT for eight consecutive weeks or more for 6H, 4 consecutive weeks or more for 3HP and 3RH.
3) **Died** – an individual who dies for any reason during the course of TPT.
4) **Not evaluated** – an individual who has been transferred to another health facility with proper referral slip for continuation of TPT and whose treatment outcome is not known; document the reason for referral. This category may also include individuals whose TPT is discontinued by physician because of ADR or the individuals opted out of TPT or refused to continue.
5) Treatment discontinued, which may be due to treatment limiting adverse events or other reasons

4 Patient Monitoring and Education

To ensure safety and efficacy of therapy, the health care provider should assess the patient's progress monthly. This evaluation involves clinical monitoring, laboratory testing, and patient education

4.1 Clinical Monitoring

Patients on TPT should be followed up on a monthly basis and their return to clinic dates harmonized with any other routine schedules. During each clinic visit, conduct the following;

- Symptom screening for active TB disease and update status
- Assess and reinforce adherence to treatment
- If a patient screens positive for TB while on TPT, stop TPT and manage according to National TB guidelines
- Assess for any adverse drug reactions at each visit and intervene appropriately.
- Document and update the relevant recording and reporting tools, e.g., ICF/TPT cards, Contact Management/TPT register

4.2 Laboratory Monitoring

- Baseline liver function test is not mandatory for all patients at the start of TPT
- This may be considered on an individual basis, especially for patients taking other medications for chronic medical conditions or symptomatic patients suspected to have active hepatitis

4.3 Health Education and adherence

- Explain the disease process and rationale for medication in the absence of symptoms or radiographic abnormalities
- Review the importance of completing TPT
- Inform patients that Rifampicin and Rifapentine may cause urine or other body fluids to turn orange. This side effect is harmless unless one has contact lenses which may be permanently discolored
- Advise clients to report any adverse events and seek medical attention immediately
- Advice the client on the symptoms of TB and the need to seek care when they occur
- Clients are at risk of new or worsening barriers to adherence, so adherence monitoring, counselling and support should continue throughout the duration of treatment.

Table 8: Factors that influence adherence to TPT

Patient related Factors	Health care system related factors	Drug related factors
• Lack of understanding of disease/ treatment • Mental health issues and substance abuse • Malabsorption • Social barriers including Stigma and discrimination • Presence of comorbid conditions • Economic barriers e.g., lack of transportation • Non-disclosure	• Inadequate counseling • Absence of guidelines • Non adherence to guidelines • Inadequate training or capacity • Poor or no treatment monitoring • Poorly organized or funded system or program • Inadequate or erratic supply of medicines • Wrong dose or combination • Poor regulations of medicine	• Adverse reactions • Pill burden • Drug-drug interaction • Poor quality of drugs

5 Monitoring and Education

5.1 Monitoring

Monitoring is the routine tracking of service and program performance. It is a continuous process intended to provide information on the extent to which a program is achieving its intended targets within specified time frames. It involves actual recording and reporting processes using standard tools (*as described below and annexed in these guidelines)*.

5.2 Recording and Reporting Tools

Recording tools

All facilities should have the following tools either in paper or electronic form:

1. TPT/ Contact management register
2. TPT Appointment card
3. TPT/ICF Patient record card
4. Daily activity drugs register (DADR)
5. Facility consumption data report and request form (FCDRR)

Reporting tools

1. KHIS- MOH 731, FMAPS (729B)
2. TIBU (Case finding form and Cohort analysis form)

5.2.1 The TPT/ Contact management register

This register is used to capture all clients put on TPT regardless of their HIV status. It also serves as the contact management register thus capturing the details of the index case whenever appropriate. Depending on the setting at the facility, it is advisable to place this register in all relevant service delivery points. Health care workers handling this register are advised to go through the instructions on how to fill this register.

5.2.2 TPT appointment card

This card is issued to the client upon initiation of TPT. It contains the client's demographic details, a brief on the clinical information and the clinic schedule. The client should be advised to present this card every time they are visiting a health facility for review and/or drugs collection.

5.2.3 TPT/ ICF Patient record card

This card serves as the client's file as it contains all details of the patient from the time TPT is initiated to its completion. All clinical details related to the client while on TPT should be well captured.

5.2.4 Daily activity drug register

This register captures drugs transactions and regimens dispensed to clients on a specified clinic date.

5.2.5 Facility consumption data report and request form

This is a monthly data capturing tool that summarizes consumption, reporting and ordering of commodities for the health facility.

5.2.6 Reporting tools

Data from the CCC shall be reported on the MOH 731 tool and entered on KHIS on monthly basis while that from all other clinics shall be entered in TIBU by the sub-county TB and Leprosy coordinator on a monthly basis. FMAPs(729B) summarizes patients on TPT regimen among PLHIV.

Note: Every health care provider involved in TB treatment or prevention has a professional responsibility to record and report people treated for TB (latent or active TB)

TB is a notifiable disease under the Public Health Act Cap 242, and therefore all those treated (by the public or private sector) must be notified to the MOH.

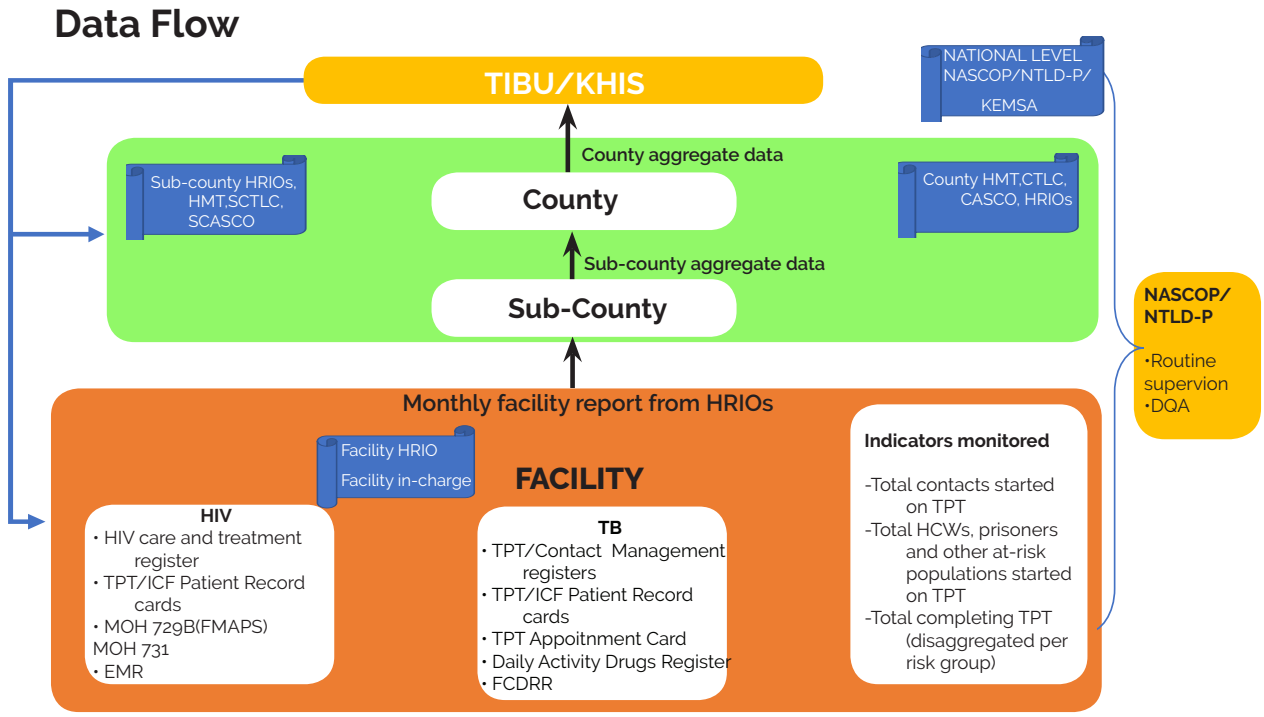


Figure 3: PMTPT data flow

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Annexes

Annex 1: Testing options for Latent TB Infection

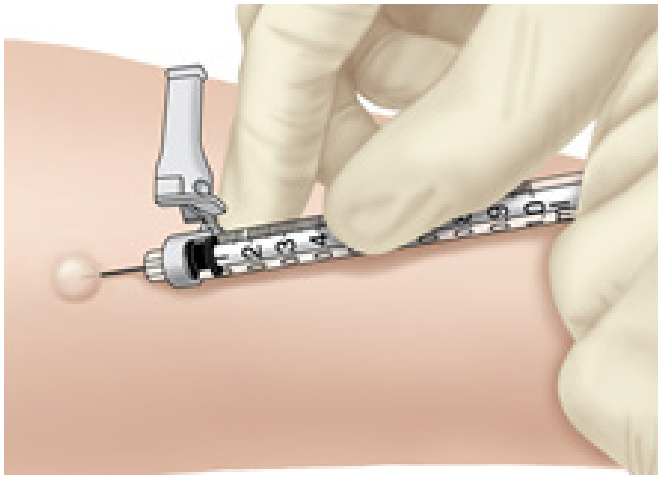
1. Testing using a Tuberculin Skin Test (Mantoux)

The Tuberculin Skin Test (TST) is used to determine if a person is infected with M. tuberculosis. Persons infected with M. tuberculosis within 2 to 8 weeks prior to TST present with a delayed-type hypersensitivity reaction.

How to administer TST

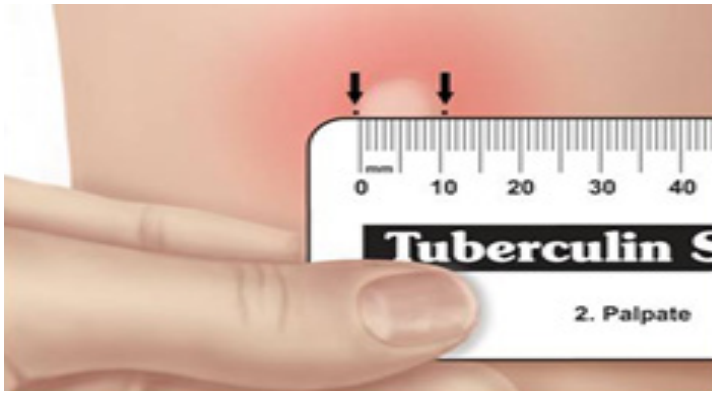
The test is administered intradermally using the Mantoux technique by injecting 0.1ml of 5 TU purified protein derivative (PPD) solution on the volar surface of the lower arm using a 27-gauge needle.

Figure A1: How to administer TST



Reading and interpretation of TST

The reading and interpretation of TST reactions should be conducted within 48 to 72 hours of administration. Reading the skin test means detecting a raised, thickened local area of skin reaction, referred to as an induration. Induration is the key item to detect, not redness or bruising. Patients must be educated regarding the significance of a positive TST result. Positive TST reactions and negative reactions can be read accurately at 72 hours.



Note: Reaction is recorded in millimeters not "negative" or "positive"

Interpretation of a TST result

Criteria for grading positive TST test		
A TST reaction of ≥5 mm of induration is considered positive for the following	**A TST reaction of ≥10 mm of induration is considered positive for the following**	**A TST reaction of ≥15 mm of induration is considered positive for the following**
• HIV-infected persons • A recent contact of a person with TB disease • Persons with fibrotic changes on chest radiograph consistent with prior TB • Persons who are immunosuppressed for other reasons (e.g on chemo-therapy) • Patients with organ transplants	• Health care workers • Infants, children, and adolescents exposed to adults in high-risk categories • Injection drug users • Residents and employees of high-risk congregate settings (Prisons, schools, etc) • Persons with clinical conditions that place them at high risk	• Persons with no known risk factors for TB.

The causes of false-positive or false-negative reactions may include, but are not limited to the following:

False-Positive Reactions	False-Negative Reactions
• Infection with nontuberculous mycobacteria • Previous BCG vaccination • Incorrect method of TST administration • Incorrect interpretation of reaction	• Cutaneous anergy (anergy is the inability to react to skin tests because of a weakened immune system) • Recent TB infection (within 8-10 weeks of exposure) • Very old TB infection (many years) • Very young age (less than 6 months old) • Recent live-virus vaccination (e.g., measles and smallpox) • Overwhelming TB disease • Some viral illnesses (e.g., measles and chickenpox) • Incorrect method of TST administration • Incorrect interpretation of reaction

Repeat of TST

There is no risk associated with repeated tuberculin skin test. If a person does not return within 48-72 hours for a tuberculin skin test reading, a second test can be placed as soon as possible. There is no contraindication to repeating the TST, unless a previous TST was associated with a severe reaction.

Advantages of TST

- Clinical applications are very well studied
- Cheaper to procure and can be done even at lower level facilities

Limitations of TST

1. Poor performance in immunocompromised persons (Anergy)
2. Availability constraints due to market forces
3. Unreliable in differentiating whether a person is currently having TB or LTBI (Confirmatory tests such as chest X-ray, sputum culture, or both—are usually done to rule out an active TB infection).
4. False-Positive and false negative reactions
5. Requires cold chain, return visit and training

2. Testing using Interferon Gamma Release Assay

Interferon Gamma Release Assay **(**IGRA) is used to determine if a person is infected with *M. tuberculosis* by measuring the immune response to TB proteins in whole blood. Specimens are mixed with peptides that simulate antigens derived from *M. tuberculosis* and controls. If a person is infected with M. tuberculosis, the white blood cells recognize the simulated antigens and release interferon-gamma (IFN- γ) and the results are based on the amount of IFN- γ released. There are only two commercially available IGRAs; QuantiFERON®-TB Gold In-Tube and T-SPOT®

2a. QuantiFERON®-TB Gold In-Tube (QFT-Plus)

Principle: QFT-Plus uses blood collection tubes that enable immediate exposure of viable blood lymphocytes to highly specific TB antigens and test controls coated on the inner surface of the tubes. Exposure to these TB antigens causes lymphocytes (specifically CD4 and CD8 T cells) to produce a quantifiable small molecule called Interferon-γ (IFN-γ). Interferon-gamma production is correlated to the presence or absence of TB infection, and this IFN-γ response is measured in a laboratory to aid in the diagnosis of TB infection.

Test Assay:

1. Blood is collected in a lithium-heparin tube (5mls) or directly into the 4 QFT-Plus tubes (1ml in each) and incubated within 12hours from collection time (when collected in lithium heparin tubes it should be transferred into the QFT-Plus tubes and mixed well before incubation). Incubation is done between 16-24hours at 37^0c.
2. The tubes are centrifuged in the lab at 2000–3000 x g (RCF) for 15 minutes. (Centrifuged tubes should be handled with care to avoid mixing of plasma. Plasma in centrifuged tubes is stable for up to 28 days when stored at 2–8°C.)
3. Plasma is then harvested. (After centrifugation and prior to harvesting, avoid pipetting up and down or mixing plasma by any means. At all times, take care not to disturb material on the surface of the gel) Plasma samples should be harvested only using a pipet and can be loaded directly from centrifuged blood collection tubes into the QFT®-Plus ELISA plate, even when automated ELISA workstations are used.**Note:** ***Plasma samples can be stored for up to 28 days at 2–8°C when and for extended periods below –20°C***
4. ELISA is then performed in the lab by adding 50 µl of working-strength conjugate to each well of the QFT-Plus ELISA plate. Then add 50 µl of test plasma or standards to the appropriate wells. Incubate for 120 minutes at room temperature (22°C ± 5°C). Wash plate ≥6 times. Add 100 µl of substrate solution. Incubate for 30 minutes at room temperature.Add 50 µl of stop solution. Read absorbance at 450 nm (620–650 nm ref).
5. Results are calculated using the QuantiFERON-TB Gold Plus Analysis Software.

NOTE: Unincubated samples and harvested plasma can be transferred to referral labs (16 -24hours in QFT-Plus tubes at room temperature and within 28days respectively). Blood collected in lithium heparin tubes can be transferred within 48 hours at 2-8^0c.

Interpretation of QFT Plus Results

Possible results: Positive, Negative, Indeterminate
Turn around time -2-4 days but dependent on sample transport time to the diagnostic lab
2b. T-SPOT®.

Principle: The T-SPOT.*TB* test is an *in vitro* diagnostic test for the detection of effector T cells that have been specifically activated by Mycobacterium tuberculosis antigens and is intended for use as an aid in the diagnosis of *Mycobacterium tuberculosis* infection (both latent and active disease).

Test assay
Blood samples are collected and need to be processed within 8 hours.

Sample collection guide

Children below 2 years	2ml pediatric tube
Children between 2 and 9 years	4ml vacutainer CPT tubes
Children above 10 years and adults	• one 8ml or two 4ml tubes CPT tubes • one lithium heparin 6ml Tubes

1. In the Lab, blood sample collected is centrifuged to separate white cells which are washed and counted to maximize sensitivity. White blood cells and TB specific antigen is added to wells precoated with antibodies to IFN-γ and incubated overnight at 37^0c with 5% CO 2
2. IFN-γ is released from activated T cells. Wells are washed and a secondary conjugate antibody is added and incubated for 1hour.Wells are then washed and a substrate added and incubated for 7mins, the reaction is then stopped with water. One spot it the footprint of one activated T cell.

Interpretation of the results.

Possible results: Positive, Negative, Borderline, Invalid

IFN-gamma is captured and presented as spot from T cells sensitized to TB infection. Results are interpreted by subtracting the spot count in the negative (NIL) control from the spot count in panels A and B. After blood samples are drawn, they should be processed within 8hours. Samples may be successfully stored at room temperature until processed.

- The test result is positive if panel A and/or panel B is>8 spots
- The test result is negative if both panels are <4 spots
- Results where the highest of the panel A or B spot count is 5, 6, or 7 spots should be considered borderline and retesting by collecting another specimen is recommended.
- If the results are still borderline after the retesting with another specimen, then other diagnostic tests and/or epidemiologic information should be used to help determine the TB infection status of the patient. A more detailed description of how to interpret the results is provided with the product.

Repeating IGRA tests

- Repeating an IGRA or performing a TST might be useful when the initial IGRA result is indeterminate, borderline, or invalid and a reason for testing persists
- In contact investigations, negative results obtained prior to 8weeks typically should be confirmed by repeating the test 8-10 weeks after end of exposure

Advantages of IGRA

- Results can be available within 24 hours.
- Does not boost responses measured by subsequent tests.
- Prior BCG (bacille Calmette-Guérin) vaccination does not cause a false-positive IGRA test result.
- IGRA has a better positive predictive value because of their higher specificity.

Limitations of IGRA

- Requires collection of a blood sample
- Although the test has higher specificity compared to TST, errors in collecting or transporting blood specimens or in running and interpreting the assay can decrease the accuracy of IGRAs.
- Limited data on the use of IGRAs to predict who will progress to TB disease in the future.
- Limited data on the use of IGRAs for:
    - Children younger than 5 years of age;
    - Persons recently exposed to M. tuberculosis;
    - Immunocompromised persons;
- Tests is more costly and require laboratory infrastructure and expensive equipment

Annex 2: Grading of Hepatitis

	Grade 1: Mild	Grade 2: Moderate	Grade 3: Severe	Grade 4: Life threatening
ALT (SGPT)	*1.25 – 2.5 x ULN*	*2.6 – 5.0 x ULN*	*5.1 – 10.0 x ULN*	*> 10.0 x ULN*
AST (SGOT)	*1.25 – 2.5 x ULN*	*2.6 – 5.0 x ULN*	*5.1 – 10.0 x ULN*	*> 10.0 x ULN*
ACTION	Continue treatment regimen; Patients should be followed until resolution (return to baseline) or stabilization of AST/ ALT elevation.	Continue treatment regimen; Patients should be followed until resolution (return to baseline) or stabilization of AST/ALT elevation.	Stop all drugs, including TPT drugs; Measure LFTs weekly; Treatment may be reintroduced after toxicity is resolved.	Stop all drugs, including TPT drugs; Measure LFTs weekly. Treatment may be reintroduced after toxicity is resolved

4.4.2 Standard Adherence Support Interventions	
Structural interventions	• Conduct a baseline psychosocial assessment to explore the various aspects of the client's life that may influence their adherence to treatment and prevention, and their general well-being and tease out issues that need to be explored in detail during the counselling session e.g., family planning, living circumstances • Use a multidisciplinary team approach to develop and implement treatment plans for each client • Engage peers to lead TPT education and support services • Adequately prepare and assess the patient's readiness to initiate and continue with TPT • Implement a system for identifying and taking action when patients miss an appointment • Formalize a system for providing health talks • Formalize a system for linking patients to community-based resources, including: community support groups, religious groups, CBOs, groups supporting income-generating activities, organizations providing food support, child welfare societies, community health volunteers/units, schools, children's homes
TPT education and counselling	• Remind the client about TB Infection and disease, how TPT works, the importance of high level adherence and the consequences of non-adherence • Discuss and agree on a treatment plan with the patient. Gain commitment from the patient to follow through • Discuss use of alcohol and drugs and how to prevent these from affecting the treatment plan • It is important to maintain a non-judgmental attitude, and if child or adolescent, establish trust with parents/caregivers, and involve the child as they mature

Treatment supporter	• Encourage the patient to identify a treatment supporter/buddy who will provide the client with encouragement and social support and even remind the patient to take medication • Invite the treatment supporter to at least one of the adherence counselling sessions • Obtain consent from the patient to contact the treatment supporter if needed
Support group	• Link the patient to psychosocial support groups and other community-based support mechanisms (preferably through direct introduction) • Support groups offer opportunities for additional counselling and experience sharing and are an avenue for developing/ strengthening life skills • Some support groups also engage in economic empowerment activities
SMS reminder system	• Enroll patients into an automated SMS reminder system with their consent • Review the type of messages the patient may receive, the frequency of messages, and any actions the patient should take when receiving the message • Ensure the system and messages maintain patient privacy and confidentiality
Other reminder strategies	• Encourage patient/ caregiver to set a specific time of day or day (if 3HP) to take TPT, and to associate TPT time with a specific event/s in their daily schedule • Encourage patient/ caregiver to set an reminder/ alarm on their phone

Annex 3: TPT recording and reporting tools

REPUBLIC OF KENYA

MINISTRY OF HEALTH

Tuberculosis Preventive Therapy (TPT)/ Contact Management Register

Facility Name : _____

Department : _____

September 2020

MOH/REG/DNTLDP/05

		Index Case			Client Information													
Date (A)	Serial No (B)	TB notification/ registration No.(Put the complete No) - C)	Name of Index case (3 names)(D)	Is Index case DS TB or DR TB (E)	Name of Client (3 names) (F)	Age (Yrs/ M) (G)	Sex (M/F) (H)	Type of contact (Household / others) (I)	Is this contact invitation (CI) or contact tracing (CT)(J)	Client's: Tel No. (K) / Physical address (K)	Weight (kg) (L)	Height/ length in cm (M)	Z score (N) / BMI for age / BMI (N)	HIV status (O) (Pos, Neg, ND, Declined) (O) / Date done	CTX/ Dapsone (YES/ NO/ NA) - (P) / Date started	ART (YES/ NO/ NA) - (Q) / Indicate regimen	Symptom screening (Use key 1 below and indicate all that apply and date done) - R)

TB SCREENING/CONTACT TRACING FORM AT COMMUNITY LEVEL — SERIAL NUMBER: ----------

County: | Name of TB Control Zone: | Name of Facility:

Source/Index Case Name: | Sex M/F: | Age: | Sub County Registration TB Number: | Facility Serial Number:

Physical Address: | Telephone contact | Type of index case | Child | Other

	Name of Contact/person screened (Three Names)	Age	Sex M/F	Relation to Index Case (if applicable)	Signs and Symptoms: History of contact with TB (Y/N)	Cough of any duration (Y/N)	Chest Pain (Y/N)	Fever (Y/N)	Weight Loss/ Failure to Thrive/Poor weight gain in children (Y/N)	Night sweats (Y/N)	Fatigue/ Reduced playfulness (Y/N)	Client referred (Y/N)	Outcome of TB Screening DSTB / DRTB/ NO TB/ TPT INITIATED	Name of facility referred to	Date Received	TPT/Contact register serial number	Remarks.
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

All contacts with cough should have Sputum done according to the National guideline

Refer all Household contacts of index patients with bacteriologically confirmed TB

Health Education

Note: Tick the place where health education took place: | Household | School | Public place (e.g. Market, Baraza)

	Topics Covered		Tick
1	TB facts: Transmission, signs, symptoms and risk factors		

REPUBLIC OF KENYA

MINISTRY OF HEALTH

Tuberculosis Preventive Therapy (TPT) Client Appointment Card

County:.....	Sub county:.....
Facility:.....	Sub County Reg No:.....
Client Name (three names)	
Phone no.....	National ID/NEMIS:.....
Sex:..... Male ☐	Female ☐
Age/Years:..... Months: ..... Weight:.....	Date initiated on TPT :.....

Treatment Options (Regimen)	Tick√
3RH	
3HP	
6H	

TREATMENT OUTCOMES

Outcome	Tick√	Date
Treatment Completed		
Lost to follow up		
Discontinued**		
Died		

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MINISTRY OF HEALTH

Intensified Case Finding (ICF) / Tuberculosis Preventive Therapy (TPT) Record Card

Name: ..... Sub County Registration No. ..... CCC No. .....

Age: (Years) ..... Months:..... Sex: Male ☐ Female ☐ Weight (Kg):..... Height :.....

Physical Address: ..... National ID/NEMIS:..... Landmark:.....

Contact telephone: ..... Supporter's Name:..... Supporter's Cell phone Number:.....

Date	-/ /-	-/ /-	-/ /-	-/ /-	-/ /-	-/ /-	-/ /-	-/ /-	-/ /-	-/ /-	-/ /-	-/ /-
1. Cough of any duration (Y/N)												
2. Fever (Y/N)												
3. Noticeable weight loss/Failure to Thrive /Poor weight gain (Y/N)												
4. Night sweats (Y/N)												
5. Reduced playfulness/lethargy/ irritability												
6. Contact with a TB case												

(Key: Y-Yes; N – No)

- If "Yes" to any question; take a detailed history, examine the patient and do sputum examination (sputum smear or GeneXpert).

Record your action in the table below

- If "No" to question 1-5 above, consider TPT eligibility and initiate workup for TB Preventive Therapy and repeat screening on subsequent visits.

Action taken/Date	-/ /-	-/ /-	-/ /-	-/ /-	-/ /-	-/ /-	-/ /-	-/ /-	-/ /-	-/ /-	-/ /-	-/ /-
Gene Xpert (MTB Detected/MTB Not Detected)												

Annex 4: List of Contributors and Reviewers

4.1 Contributors

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Notes

Notes

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