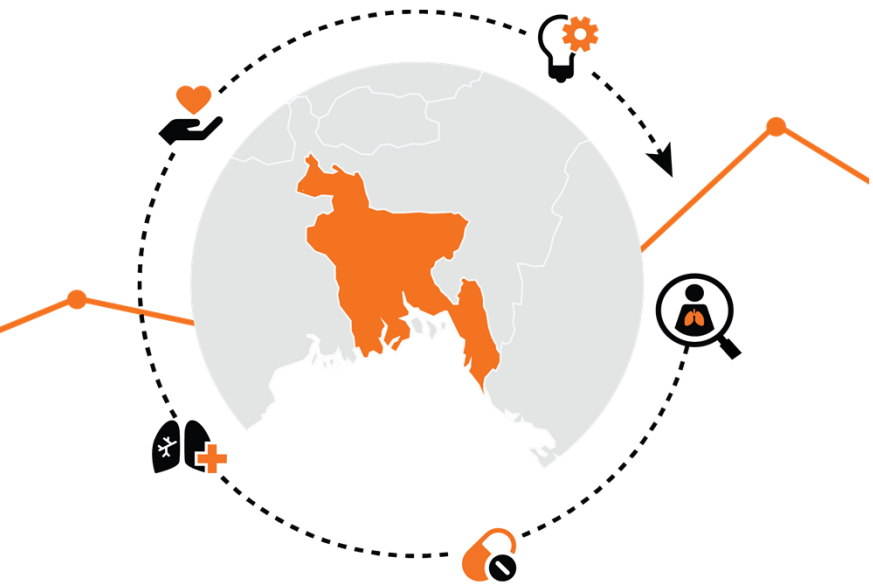

National Tuberculosis Control Programme
Bangladesh

JOB AIDS

FOR TUBERCULOSIS PREVENTIVE TREATMENT

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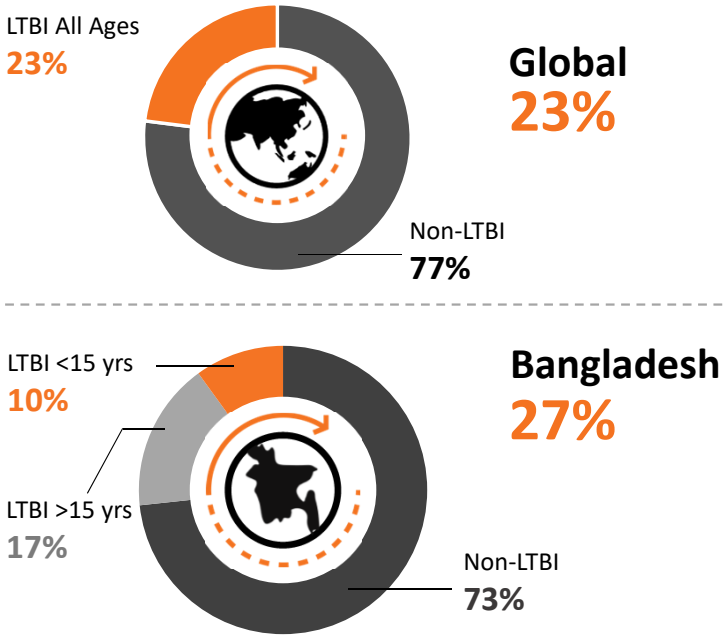
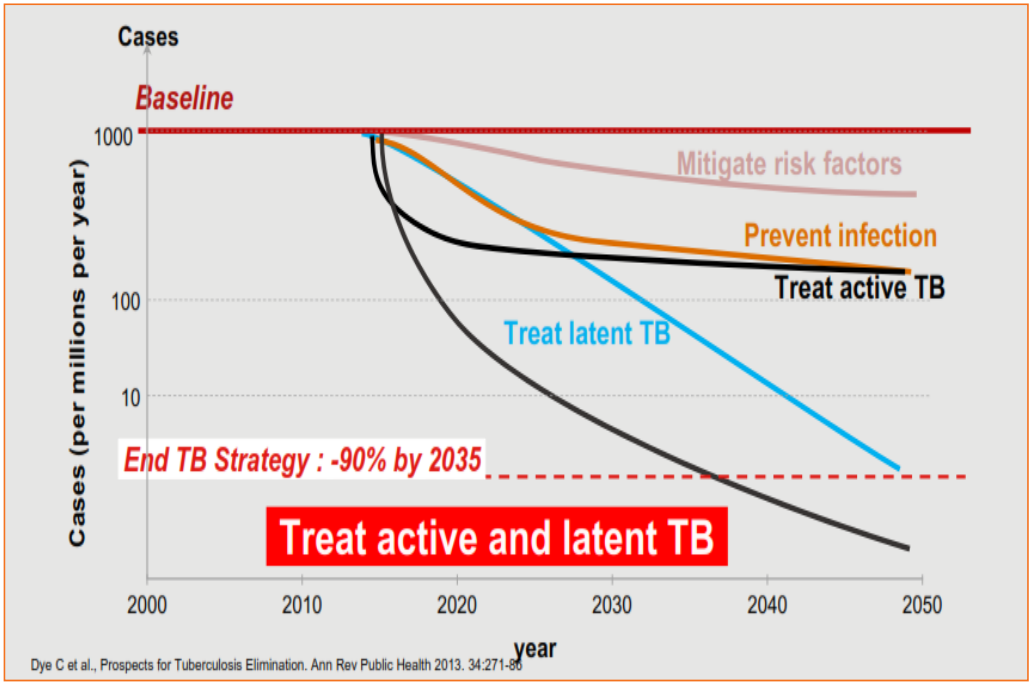
TB Preventive Therapy (TPT)

Estimated LTBI Burden



Source: Global TB report 2020 ; Dodds , J.H., et. al., 2014

Effect of TPT on TB Elimination



What is Latent TB Infection?

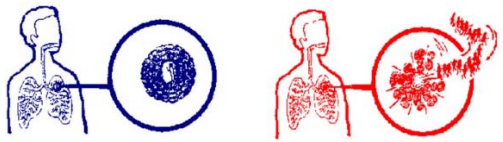
Latent tuberculosis Infection (LTBI) or just TB infection (TBI) is a **state of persistent immune response to stimulation by M. tuberculosis** antigens with no evidence of clinically active TB.

Populations who need to be identified and treated for LTBI

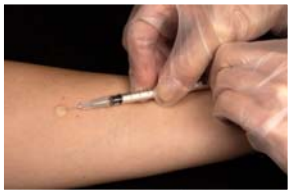
- Close contacts of Bac+ve TB (any age group)
- People living with HIV
- Diabetics
- People on renal dialysis
- People with prolonged use of Immunosuppressive drugs
- Children
- Health workers

Two Methods to test for LTBI

- Mantoux Tuberculin Skin Test (TST)
  - Positive result: ≥ 10 mm induration (≥ 5 mm in PLHIV and malnourished)
- Interferon-Gamma Release Assay (IGRA):
  - QuantiFERRON(R).TB Gold in Tube
  - T-SPOT(R).TB



Correct PPD test with a wheal



Source: Wikipedia

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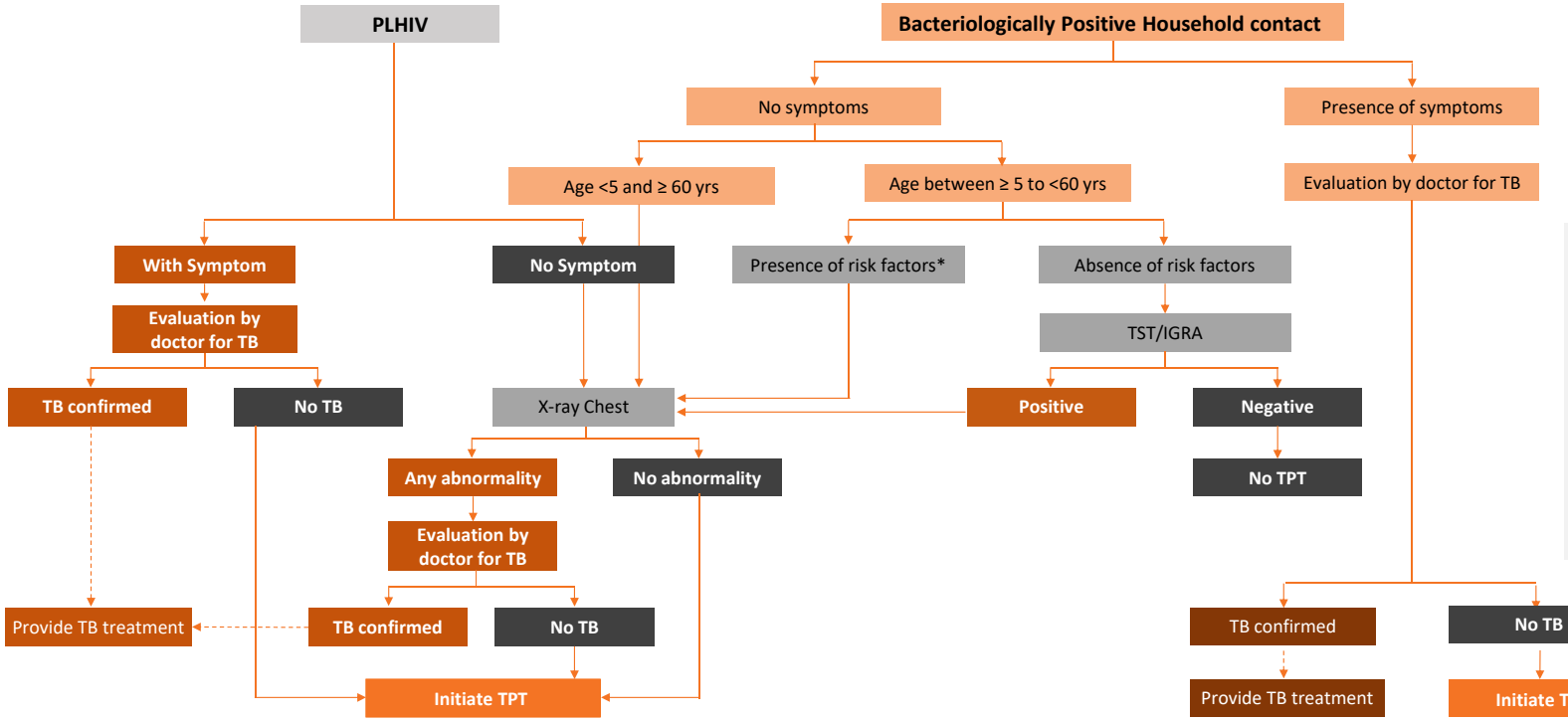
Algorithm for exclusion of active TB disease, LTBI testing and decision for TPT



Risk factors:

- Diabetics
- Other clinical vulnerabilities:
  - CKD with or without on dialysis
  - Anti-TNF treatment
  - Transplantation (including candidate)
  - Silicosis
- Smoking
- Substance abuse

TPT Regimens by Priority Groups

TPT Regimens for Different Age Groups and PLHIV

Age group	Regimen	Administration
≥15 years (adults without HIV)	3HP/ 3HR	Isoniazid (H) and Rifapentine (P) once per week administration for 3 months (12 doses in total)/ Daily administration of Isoniazid (H) and Rifampicin (R) orally for 90 days/3 months
<5 years	6H/ 3HR	Daily administration of Isoniazid (H) for 6 months/ Daily administration of Isoniazid (H) and Rifampicin (R) orally for 90 days/3 months
Children from 5 to 15 years old	3HR	Daily administration of Isoniazid (H) and Rifampicin (R) orally for 90 days/3 months
PLHIV all ages	6H	Daily administration of Isoniazid (H) orally for 180 days/6 month

H=isoniazid, R=Rifampicin, P=Rifapentine

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Dosing of TPT regimen by using tablet and fixed dose combination

Regimen	Dose by age and weight band				
6H **(For PLHIV all age, for non-PLHIV <5 y.o)**	Isoniazid	Age 10 years & older: 5 mg/kg/day Age <10 years: 10 mg/kg/day (range, 7–15 mg)			
3HR	Isoniazid	Age 10 years & older: 5 mg/kg/day Age <10 years: 10 mg/kg/day (range, 7–15 mg)			
	Rifampicin	Age 10 years & older: 10 mg/kg/day Age <10 years: 15 mg/kg/day (range, 10–20 mg)			
Weight band for children	**4–7 kg**	**8–11 kg**	**12–15 kg**	**16–24 kg**	**>25 kg**
RH 75/50 mg (FDC) Age ≤15 years	1	2	3	4	Use adult formulations *RH (150/75)*
Weight band for adults	**30–37 kg**	**38–54 kg**	**≥55 kg**	**-**	**Note**
RH 150/75 mg (FDC) Age >15 years old	2	3	4		*Maximum dose:* *Isoniazid 300 mg* *Rifampicin 600 mg*
3HP (once/wk for 12 wk)	>15 years old				
Weight band	**30–35 kg**	**36–45 kg**	**46–55 kg**	**56–70 kg**	**>70 kg**
Isoniazid 300 mg	3	3	3	3	3
Rifapentine 150 mg	6	6	6	6	6
Isoniazid + rifapentine (FDC) **(300 mg/300 mg)**	3	3	3	3	3

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TPT Initiation and Monitoring

Educate and counsel about LTBI, TPT and potential adverse events from TPT at start and throughout treatment.

Obtain baseline LFT for persons with increased risk of hepatotoxicity: chronic liver disease, cirrhosis, hepatitis B or C, liver cancer, regular use of alcohol, pregnancy, within 3 months postpartum, age >60 years

For 3HP regimen, exclude pregnancy in women of reproductive age.

Use caution when giving 3HP or 3HR with oral contraceptives. Use a higher dose of estrogen (50 µ) or another form of contraception in consultation with physician.

Prevent peripheral neuropathy with pyridoxine prophylaxis for isoniazid containing regimens

- Adults and children over 1 yr: 10 to 25 mg/day
- Infants: 5-10 mg/day

Ensure adherence to treatment.

Regularly monitor adverse events and promptly manage any that occur.

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Suggested Adverse Events Management Strategies

Adverse Event	Suggested Management
Flu-like signs and symptoms	• Advise to stay hydrated by drinking adequate water or juice. • Prescribe paracetamol 500 mg tid. • If severe and not tolerated, consider switching to an alternate regimen (6H).
Nausea and vomiting	• Prescribe metoclopramide 10 mg bd or tid. • Advise to stay hydrated by drinking adequate water or juice. • Avoid spicy and greasy food. • Prescribe oral rehydration solution, if there is mild dehydration.
Hepatotoxicity	• If AST and/or ALT >3 but <5 times ULN without signs and symptoms of hepatitis, continue TPT and repeat AST and ALT weekly. • If AST and/or ALT >3 times ULN with signs and symptoms of hepatitis, stop H containing regimen and repeat AST and ALT weekly. When AST and/or ALT returns to normal, change to 4R. • If AST and/or ALT >5 times ULN, stop H containing regimen and repeat AST and ALT weekly. When AST and/or ALT returns to normal, change to 4R.
Peripheral neuropathy	• Use BPNS to screen and assess the severity of peripheral neuropathy. • If mild: give 100 to 150 mg of pyridoxine in adults and 50 mg in children. • If not better or worsens with an increased pyridoxine dose, stop H containing regimen and switch to 4R.

BPNS=brief peripheral neuropathy scoring; MAC=Medical Advisory Committee; tid=thrice daily.

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Suggested Adverse Events Management Strategies

Adverse Event	Suggested Management
Skin hypersensitivity reaction	• If itchiness and localized mild rash, give calamine lotion or steroid cream to apply bid on the affected area; chlorpheniramine 8 mg tid or bid orally may be given. • If itchiness, generalized rash, swelling of lip or nasal mucosa with or without fever, withhold TPT. • For mild or moderate hypersensitivity reaction, desensitization may be done with a low dose as is done for DS-TB treatment once hypersensitivity reaction resolves to see if it is due to H or P. • Never reintroduce for severe hypersensitivity reaction or for Stevens-Johnson syndrome. • If due to H, switch to 4R as per the guide above. • If due to rifapentine, switch to 6H as per the guide above.
Orange-red discoloration of body fluid (tear, saliva, urine, milk, urine)	Reassure that it is just the staining from a drug in the regimen and is harmless. Advise to continue TPT.
Any occurrence of TB signs and symptoms	• Investigate for active TB disease or other diseases. • If no active TB disease, continue TPT. • If active TB disease, stop TPT and provide TB or drug-resistant TB treatment.

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As a doctor, you can help prevent TB through TPT by:

- ☐ Training your own team and community health workers who are involved in TB services and TB contact investigations.
- ☐ Actively triaging people who may be eligible for TPT.
- ☐ Conducting proper investigation to rule out active TB disease and decide on TPT eligibility.
- ☐ Promptly prescribing those eligible to start TPT.
- ☐ Providing comprehensive care to people on TPT including education and counselling, monitoring and management of adverse events.
- ☐ Following-up people on TPT through completion and report outcomes.

People who may be eligible for TPT

a) Household contacts of index BC-TB case
b) People living with HIV
c) Other high-risk groups:
   - Chronic kidney disease +/- dialysis
   - Anti-TNF treatment
   - Transplantation (including candidate)
   - Substance abuse
   - Silicosis

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