

# Screening, Diagnosis, and Treatment of Latent Tuberculosis Infection (LTBI) in Primary Care Settings

## Tips for Coding and Billing



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# Screening for and Diagnosing Latent TB Infection (LTBI)

Identifying and treating LTBI is an important part of tuberculosis (TB) prevention in the United States. An estimated 13 million people in the U.S. have LTBI; while these individuals are not sick, they can become ill with TB disease in the future. Although not everyone with LTBI will develop TB disease, some will develop TB disease over their lifetime, if untreated. Progression from untreated LTBI accounts for approximately 80% of TB cases in the US.



## Who to Test for Tuberculosis Infection?

Current guidance recommends testing for LTBI in individuals with an elevated risk for exposure/infection and/or progression from TB infection to TB disease.

### **Test for TB infection in individuals who are as follows:**

1. Exposed to someone with infectious TB (contacts),
2. Born in, resident of, or frequent travel to countries with an increased TB prevalence (all countries other than the U.S., Canada, Australia, New Zealand, or in northern or western Europe),
  - Persons born outside the U.S. account for 70 percent of all TB cases in the U.S.
  - U.S. Preventive Services Task Force ([USPSTF](#)) recommended with a B rating
3. Immunosuppressed, including those on or about to start immunosuppressive medication, or with other medical conditions that increase the risk of developing disease if infected (e.g. diabetes or HIV),
4. Current or former residents of high-risk large group settings (e.g., homeless shelters or correctional facilities, based on local epidemiology),
  - USPSTF recommended with a B rating
5. Health care personnel or others who work in high risk settings. For more information on testing for health care personnel, click [HERE](#) (Resource no. 1, pp 440-442).



## Tests for TB Infection

Two testing methods are available to detect TB infection in the U.S.

- **"Blood-Based" Interferon-Gamma-Release Assay (IGRA)**
  - ◆ Approved tests include QuantiFERON® -TB Gold Plus and T-Spot® .TB; these are considered equivalent →



- **Mantoux tuberculin skin test (TST)**
  - ◆ Also called PPD
  - ◆ Result is interpreted based on the size of the induration in mm, patient's risk for TB infection, and risk for progression

None of these tests can distinguish between LTBI and TB disease and a negative reaction to either test does not exclude the diagnosis of TB disease or LTBI in high-risk individuals. For more information on interpretation of test results, click [HERE](#) (Resource no. 2, pp 97-99).

Consider patient characteristics, test availability, logistics, and resources when selecting a test.

- IGRAs are generally preferred, but the TST is acceptable.
- The TST requires 2 patient visits; IGRAs require a single visit.
- IGRAs are preferred in people who are BCG-vaccinated or who are unlikely to return to have their TST read within 48-72 hours after administration.
- TSTs are preferred for children younger than 2 years of age.

For more information on testing and interpretation, click [HERE](#) (Resource no. 2, pp 2-14).

## Evaluating for TB Disease

Evaluate individuals with a positive test for TB infection to rule out TB disease.

- Review complete medical history including past TB exposure, other risks, and prior TB test results or treatment.
- Conduct a physical exam.
- Obtain a chest radiograph.

If the chest radiograph is normal, and there are no symptoms or findings consistent with TB disease (e.g., cough, fever, night sweats, weight loss), the individual can be considered to have LTBI. For more information on LTBI diagnosis, click [HERE](#) (Resource no. 2, pp 26-31).

If there are abnormalities on the chest radiograph or physical exam, or symptoms consistent with TB disease, further evaluation for TB disease is indicated. State or local health departments and TB Centers of Excellence can provide consultation. For more information, click [HERE](#) (Resource no. 3). TB is a reportable disease in the U.S. and LTBI is reportable in some states. Follow your local public health regulations.

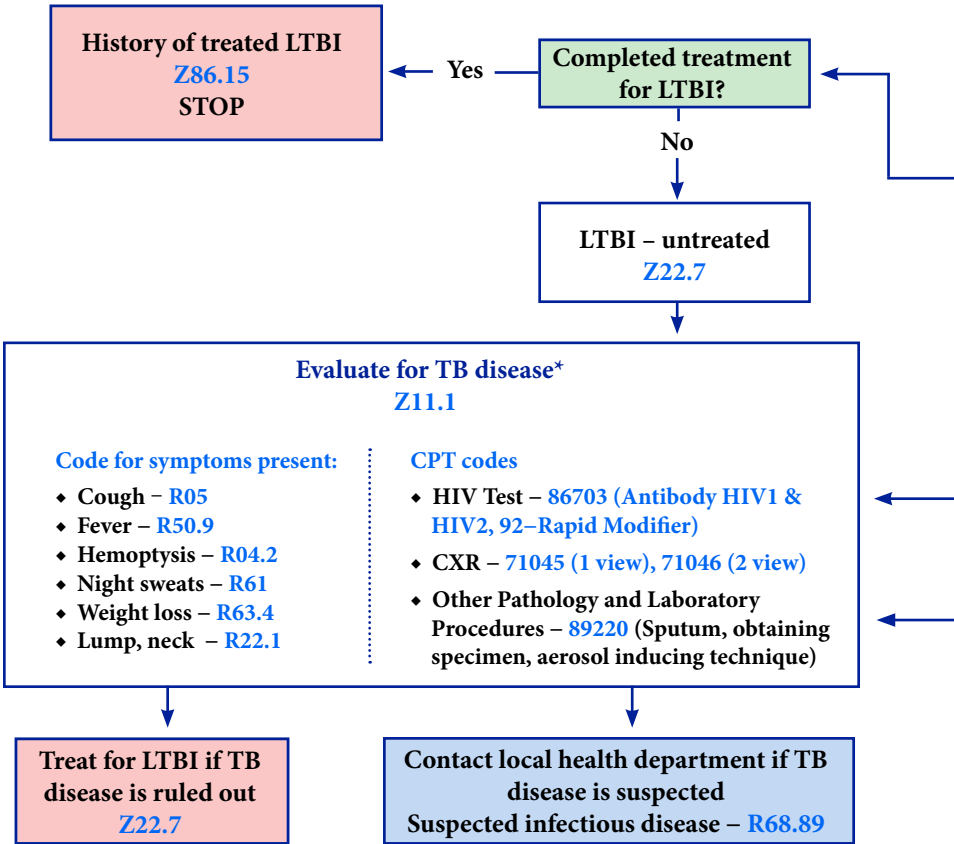
Children and immunosuppressed individuals with TB disease may present differently; consultation with an expert is suggested. These individuals can progress to TB disease very quickly if infected and should be evaluated promptly.



# Screening for and Diagnosing Latent

Is the patient at risk for TB infection

<b>Z20.1</b> – Contact with and (suspected) exposure to tuberculosis	_____	1	.....
		2	.....
		3	.....
<b>Z11.7</b> – Encounter for testing for LTBI	_____	4	.....
		5	.....

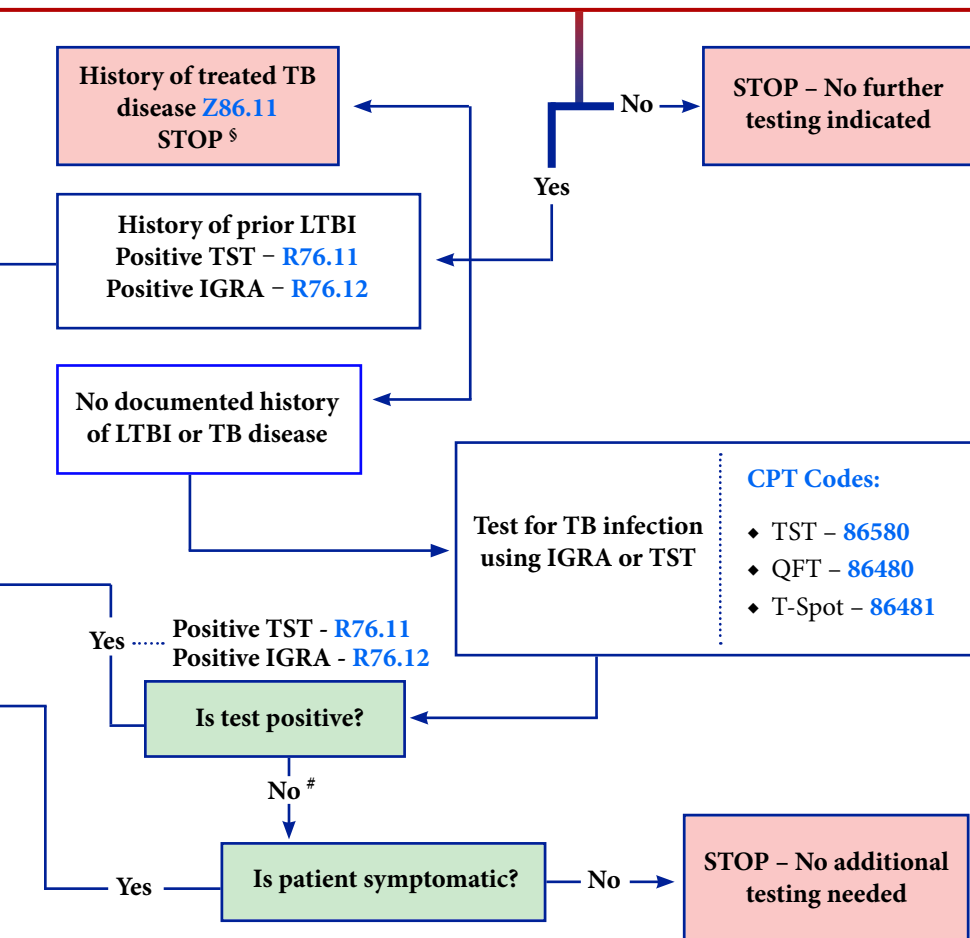


\* An unexpected positive TST or IGRA result may warrant a second test for confirmation.

# TB Infection in Primary Care Settings

## or progression to TB Disease?

- ..... Exposed to someone with infectious TB
- ..... Born in, reside in, or frequent travel to countries with increased TB prevalence
- ..... Immunosuppression, including those on immunosuppressive medication, or with medical conditions that increase risk of developing disease once infected (e.g., diabetes or HIV)
- ..... Current or former resident of high-risk, large group settings (e.g., homeless shelters or correctional facilities, based on local epidemiology)
- ..... Health care personnel or others who work in high risk settings and require testing



§ For history of untreated TB, further workup may be required.

# Repeat test for borderline or indeterminate IGRA results (R76.8) and invalid or unspecified IGRA results (R76.9).



# Treatment of Latent TB Infection

## Treatment Regimens for LTBI

Shorter rifamycin-based regimens are preferred due to higher completion rates and lower hepatotoxicity. Not all regimens can be used in all individuals. For more information on treatment regimens, click [HERE](#) (Resource no. 4, pp 4-7).

Select an appropriate regimen based on individual patient characteristics including comorbidities, potential drug-drug interactions, and drug-susceptibility results of presumed source case (if known). Discuss treatment options and consider patient preferences.

For more information on treatment in specific populations, such as pregnant and lactating women, click [HERE](#) (Resource 2, pp 53-72).

LTBI Regimens		Frequency and Duration
Preferred *	4 months of Rifampin (RIF)	120 doses; daily
	3 months of Isoniazid (INH) and Rifapentine (RPT)	12 doses; once weekly
Alternative	6 months of INH <sup>§</sup>	180 doses; daily 52 doses; twice-weekly <sup>#</sup>
	9 months of INH	270 doses; daily 78 doses; twice-weekly <sup>#</sup>

\* An additional regimen of 3 months of daily INH and RIF is also recommended, but is not widely used in the US.

§ A 6 month regimen is preferred over the 9 month regimen, based on available studies. For more information, click [HERE](#) (Resource no. 4, pp 7).

<sup>#</sup> Should be provided by directly observed therapy (DOT).

## Monitoring Patients on LTBI Treatment

Monitor patients on LTBI treatment monthly for adherence and adverse drug reactions; include a brief physical exam. Perform a symptom screen, checking for:

◆ Fever	◆ Persistent paresthesia of hands or feet	◆ Easy bruising/bleeding
◆ Anorexia	◆ Fatigue or weakness	◆ Arthralgia
◆ Nausea	◆ Abdominal tenderness	◆ Dark urine
◆ Vomiting		◆ Icterus

- Routine monthly monitoring of LFTs is not always indicated.
- Baseline and periodic LFTs are recommended for certain groups (e.g., those taking other hepatotoxic drugs or with underlying conditions that increase risk).
- Educate patients on possible adverse reactions.
- For more information on LTBI monitoring, click [HERE](#) (Resource no. 2, pp 78 - 90).

# Coding and Billing for Treatment of Latent TB Infection

## Initial Visit for LTBI Treatment

<b>Physician (or NP/PA)</b> <b>99203-99204</b> - New patient <b>99213-99214</b> - Established patient	<b>Registered Nurse</b> <b>T1023</b>
<ul style="list-style-type: none"><li>▪ Baseline labs (if not already done):<ul style="list-style-type: none"><li>◆ HIV - <b>86703 (92- Rapid Modifier)</b></li><li>◆ Hepatic Function Panel - <b>80076</b></li><li>◆ Complete Blood Count (CBC) with differential - <b>85025</b></li></ul></li></ul>	
<ul style="list-style-type: none"><li>▪ Review patient's medication list for potential drug interactions.</li><li>▪ Select a regimen and provide patient education (consider possible adverse effects).</li><li>▪ Instruct patient to hold medications and call your office if any toxicities are noted prior to next visit.</li></ul>	

## Directly Observed Therapy (DOT) Visits

<b>Physician (or NP/PA)</b> <b>99211-99212</b>	<b>Registered Nurse</b> <b>T1002</b>
Visit when the chosen regimen is by DOT (e.g., 3 months of weekly isoniazid and rifampentine by DOT or biweekly isoniazid).	
<ul style="list-style-type: none"><li>▪ Screen for TB symptoms and adverse drug reactions before administering medications.</li><li>▪ Observe patient taking all medications.</li></ul>	

## Monthly Visits

<b>Physician (or NP/PA)</b> <b>99203-99204</b> - New patient <b>99213-99214</b> - Established patient	<b>Registered Nurse</b> <b>T1002</b>
<ul style="list-style-type: none"><li>▪ Screen for TB symptoms and adverse drug reactions.</li></ul>	
<ul style="list-style-type: none"><li>▪ Monthly labs in patients with comorbidities, baseline abnormalities, or who are taking other hepatotoxic medications:<ul style="list-style-type: none"><li>◆ Hepatic Function Panel - <b>80076</b></li><li>◆ Complete Blood Count (CBC) with differential - <b>85025</b></li></ul></li></ul>	

## End of Treatment

- Provide documentation of treatment completion.



# Resources

- No. 1** Centers for Disease Control and Prevention, Tuberculosis Screening, Testing, and Treatment of U.S. Health Care Personnel. Available at: <https://www.cdc.gov/tb/publications/guidelines/pdf/mm6819a3-H.pdf>
- No. 2** National Society of Tuberculosis Clinicians, Testing and Treatment of Latent Tuberculosis Infection in the United States: Clinical Recommendations. Available at: [tbcontrollers.org/resources/tb-infection/clinical-recommendations/](http://tbcontrollers.org/resources/tb-infection/clinical-recommendations/)
- No. 3** Centers for Disease Control and Prevention, TB Centers of Excellence for Training, Education, and Medical Consultation. Available at: [https://www.cdc.gov/tb/education/tb\\_coe/default.htm](https://www.cdc.gov/tb/education/tb_coe/default.htm)
- No. 4** Centers for Disease Control and Prevention, Guidelines for the Treatment of Latent Tuberculosis Infection. Available at: [cdc.gov/mmwr/volumes/69/rr/pdfs/rr6901a1-H.pdf](http://cdc.gov/mmwr/volumes/69/rr/pdfs/rr6901a1-H.pdf)
- No. 5** Centers for Disease Control and Prevention. Latent TB Infection Resources (guidelines, resources, fact sheets, etc.). Available at: [cdc.gov/tb/publications/ltni/ltniresources.htm](http://cdc.gov/tb/publications/ltni/ltniresources.htm)
- No. 6** Heartland National TB Center, The Spectrum of Tuberculosis from Infection to Disease: TB at a Glance. Available at: [heartlandntbc.org/assets/products/The\\_Spectrum\\_of\\_TB.pdf](http://heartlandntbc.org/assets/products/The_Spectrum_of_TB.pdf)
- No. 7** TB Program Contact Information. Available at: [tbcontrollers.org/community/statecityterritory](http://tbcontrollers.org/community/statecityterritory)
- No. 8** US Preventive Services Task Force Screening for Latent Tuberculosis Infection in Adults: US Preventive Services Task Force Recommendation Statement. Available at: [uspreventiveservicestaskforce.org/uspstf/recommendation/latent-tuberculosis-infection-screening](http://uspreventiveservicestaskforce.org/uspstf/recommendation/latent-tuberculosis-infection-screening)



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