Indian Health Service
National Pharmacy and Therapeutics Committee
Strategic Initiative: ***Recognition/Treatment: Latent TB***

-May 2019-

Background:

According to the World Health Organization, nearly 25% of the global population is infected with *Mycobacterium tuberculosis*.[1] While relative incidence of tuberculosis is substantially lower in the United States compared to developing countries, American Indian and Alaska Native (AI/AN) people have an incidence rate nearly 8 times that of non-Hispanic whites (3.9 versus 0.5 per 100,000 persons).[2]

Tuberculosis (TB) is a serious disease that typically affects the lungs but can spread to the brain, kidneys, or spine. If left untreated, TB can lead to death. Treatment is a long process and involves multiple antibiotics taken for approximately 26 weeks.

Some people who are exposed to TB may not progress to active TB disease right away. A person may be infected by *M. tuberculosis* but does not feel sick and does not spread the infection to others; this is called latent tuberculosis (latent TB). Most cases of latent TB will become reactivated and progress to active TB disease. Fortunately, latent TB can be identified early and is easier to treat than active TB disease.

In support of the goal to eliminate TB among AI/AN people, the NPTC endorses;

1. Screening for latent TB infection for all patients with diabetes
2. Treating latent TB with isoniazid plus rifapentine once weekly for 12 weeks (termed “3HP”)
3. Implementing a latent TB protocol for directly observed therapy (DOT)

Identification and treatment of latent TB infection can reduce the risk of progression to active TB disease by up to 90% and can therefore reduce potential sources of infection.[3, 4]

As part of an initiative to end the global TB epidemic by 2030, the World Health Organization has endorsed a system-based strategy to expand the scope and reach of interventions for TB, including treatment coverage for latent TB infection of ≥ 90% compared to 2015.[5]

Discussion:

The IHS National Pharmacy and Therapeutic Committee endorses three steps to identify and eliminate TB in native communities:

1. Screening for latent TB infection among patients with Diabetes:

Various underlying conditions predispose for the reactivation of TB such as type 2 diabetes. Studies have shown that this risk is 2 to 6 times higher than in patients without diabetes. On average, an estimated 30% of individuals with diabetes will develop active TB disease over the course of their lifetime if they have untreated latent TB infection.

The I.H.S. Standards of Care and Clinical Practice Recommendations for Type 2 Diabetes recommend screening patients with diabetes at least once after diabetes diagnosis (more often as indicated) for latent TB by using either one of the following tests:

- *Tuberculin skin test (TST or PPD)*
- *T-cell interferon-γ release assay (IGRA*)

If the TST/PPD or IGRA test is positive, evaluation is recommended including medical history, review of symptoms, targeted physical exam, and a chest radiograph.[8]

Factors that increase risk of reactivation of tuberculosis:

- *Diabetes*
- *HIV infection*
- *Lymphoma / leukemia*
- *Head / neck cancer*
- *Immunocompromising conditions (major)*
- *Silicosis*
- *Renal failure*
- *Treatment with TNF-alpha inhibitor medications*

2. Treating for Latent TB:
Based on evidence of effectiveness, safety, and treatment completion rates, the U.S. Centers for Disease Control and Prevention (CDC) currently recommend a combination of isoniazid plus rifapentine once weekly for 12 weeks (often referred to as the "3HP" regimen) for latent TB in most adults and children ages 2 and over.[9] This regimen has been shown to improve adherence and completion rates for treatment of latent TB infection.[7]

Isoniazid (INH)	**Dosage (Once weekly):**
• 2-12 years:	25mg/kg, rounded up to the nearest 50/100mg; (max dose 900mg)
• ≥12 years:	15mg/kg, rounded up to the nearest 50/100mg; (max dose 900mg)

Rifapentine	**Dosage (Once weekly:**
• 10.0 - 14.0 kg (25-31 lbs)	300mg
• 14.1 - 25.0 kg (31-55 lbs)	450mg
• 25.1 - 32.0 kg (55-71 lbs)	600mg
• 32.1 - 50.0 kg (71-110 lbs)	750mg
• >50 kg (>110 lbs)	900mg (900mg is max dose)

**Please note: this medication regimen is for the treatment of latent TB only. For the treatment of active TB disease, please consult the CDC recommendations.*

I.H.S. procurement data demonstrates very low utilization of rifapentine agency-wide and the utilization trend is flat, implying a lack of implementation of the 3HP short-course regimen.

3. Implementing a Protocol for Directly Observed Therapy (DOT): Successful implementation of an effective program targeting latent TB benefits from a systematic approach to address losses that may occur at each step in the cascade of care.[10] The steps in the cascade, relative to each patient are; intended for screening (at risk), tested, received a test result, referred if test is positive, completed medical evaluation, recommended latent TB treatment, accepted and started treatment, and completed treatment.

If you have any questions regarding this document, please contact the NPTC at IHSNPTC1@ihs.gov. For more information about the NPTC, please visit the NPTC website.

References:

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