



<b>Body System: Infectious Disease</b>			
<b>Session Topic: Screening and Treating Latent Tuberculosis Infection</b>			
<b>Educational Format</b>		<b>Faculty Expertise Required</b>	
<b>REQUIRED</b>	Interactive Lecture	Expertise in the field of study. Experience teaching in the field of study is desired. Preferred experience with audience response systems (ARS). Utilizing polling questions and engaging the learners in Q&A during the final 15 minutes of the session are required.	
<b>OPTIONAL</b>	Problem-Based Learning (PBL)	Expertise teaching highly interactive, small group learning environments. Case-based, with experience developing and teaching case scenarios for simulation labs preferred. Other workshop-oriented designs may be accommodated. A typical PBL room is set for 50-100 participants, with 7-8 each per round table. <u>Please describe your interest and plan for teaching a PBL on your proposal form.</u>	
<b>Professional Practice Gap</b>		<b>Learning Objective(s) that will close the gap and meet the need</b>	<b>Outcome Being Measured</b>
<ul style="list-style-type: none"> <li>• Being able to diagnose TB and latent TB</li> <li>• Being aware of prevention/screening/treatment protocols in institutional settings (e.g. nursing home)</li> <li>• Awareness of available treatments</li> <li>• Familiarity with current TB/latent TB clinical guidelines</li> <li>• Identifying those at greatest risk for LTBI and those at greatest risk for progression from LTBI to active TB</li> <li>• Awareness of the role public health department and TB control authority in management of active TB</li> <li>• New ATS/IDSA/CDC guidelines for the diagnosis of TB in adults and children</li> </ul>		<ol style="list-style-type: none"> <li>1. Identify symptoms and risk factors associated with active tuberculosis and conduct appropriate physical exam and laboratory testing.</li> <li>2. Diagnose LTBI and provide indicated treatment to reduce future risk of progression to active TB.</li> <li>3. Educate patients on the importance of completing the full round of antibiotic treatment to prevent drug resistance and recurrence of infection, and be familiar with concept of directly-observed therapy (DOT).</li> <li>4. Counsel infected patients on how to prevent transmission of tuberculosis.</li> </ol>	Learners will submit written commitment to change statements on the session evaluation, indicating how they plan to implement presented practice recommendations.
<b>ACGME Core Competencies Addressed (select all that apply)</b>			
X	Medical Knowledge		Patient Care
X	Interpersonal and Communication Skills		Practice-Based Learning and Improvement
	Professionalism	X	Systems-Based Practice
<b>Faculty Instructional Goals</b>			



Faculty play a vital role in assisting the AAFP to achieve its mission by providing high-quality, innovative education for physicians, residents and medical students that will encompass the art, science, evidence and socio-economics of family medicine and to support the pursuit of lifelong learning. By achieving the instructional goals provided, faculty will facilitate the application of new knowledge and skills gained by learners to practice, so that they may optimize care provided to their patients.

- Provide up to 3 evidence-based recommended practice changes that can be immediately implemented, at the conclusion of the session; including SORT taxonomy & reference citations
- Facilitate learner engagement during the session
- Address related practice barriers to foster optimal patient management
- Provide recommended journal resources and tools, during the session, from the American Family Physician (AFP), Family Practice Management (FPM), and Familydoctor.org patient resources; those listed in the References section below are a good place to start
  - Visit <http://www.aafp.org/journals> for additional resources
  - Visit <http://familydoctor.org> for patient education and resources
- Provide recommendations for identifying symptoms and risk factors associated with active tuberculosis and conduct appropriate physical exam and laboratory testing to confirm a diagnosis, (TB lab will automatically do this).
- Provide strategies and resources for educating patients on the importance of completing the full round of antibiotic treatment to prevent drug resistance and recurrence of infection, and be familiar with concept of directly-observed therapy (DOT).
- Provide strategies and resources for counseling infected patients on how to prevent transmission of tuberculosis.
- Provide recommendations for interpreting the PPD test based on risk factors including HIV, immune deficiency, and previous BCG injection. And be familiar with utility and interpretation of IGRA test (blood-based test now often used as alternative to PPD)
- Provide an explanation of the role of public health/TB control in evaluation and management of active TB.
- Provide recommendations for incorporating CDC TB guidelines as a standard of care for LTBI and active TB and know how to access this resource on-line.
- Provide recommendations for accurately diagnosing LTBI and provide indicated treatment to reduce future risk of progression to active TB.

### Needs Assessment

\*Note – the scope and focus of this topic should include TB/latent TB, including screening and treating for latent TB infection

According to the Centers for Disease Control and Prevention (CDC), In 2016, a total of 9,287 new tuberculosis (TB) cases were reported in the United States; this provisional count represents the lowest number of U.S. TB cases on record and a 2.7% decrease from 2015. The 2016 TB incidence of 2.9 cases per 100,000 persons represents a slight decrease compared with 2015 (-3.4%). However, epidemiologic modeling demonstrates that if similar slow rates of decline



continue, the goal of U.S. TB elimination will not be reached during this century. Although current programs to identify and treat active TB disease must be maintained and strengthened, increased measures to identify and treat latent TB infection (LTBI) among populations at high risk are also needed to accelerate progress toward TB elimination.<sup>1</sup> Patients considered at increased risk for LTBI include those who were born in or who have lived in countries with a high prevalence of TB, including Mexico, the Philippines, Vietnam, India, China, Haiti and Guatemala. Also, people who have lived in group settings where exposure to TB is more likely, such as homeless shelters or correctional facilities, are considered at increased risk for LTBI.<sup>2</sup>

### Practice Gaps

CME outcomes data from 2012 AAFP Assembly (currently known as FMX) *Tuberculosis* sessions, suggest that family physicians have the following knowledge and practice gaps: being able to diagnose TB and latent TB; having established prevention/screening/treatment protocols in institutional settings (e.g. nursing home); awareness of available treatments; familiarity with current TB/latent TB clinical guidelines; and identifying those at greatest risk for LTBI.<sup>3</sup>

Patients with latent TB are noninfectious and typically do not feel ill; thereby, making it impossible to detect in the absence of a positive screening test.<sup>4</sup> For this reason, both the U.S. Preventive Services Task Force (USPSTF) and the AAFP have released recommendations calling for the screening for LTBI in asymptomatic populations at increased risk.<sup>5,6</sup>

A review of the literature suggests the following knowledge and practice gaps:<sup>7-11</sup>

- Effective administration and analysis of the tuberculin skin test (TST) must be completed by experienced physicians. Physicians are in need of frequent training to gain proficiency in the administration and interpretation of the TST.
- Physicians are often not aware of Interferon-Gamma Release Assays (IGRAs), whole – blood test that can aid in diagnosing *Mycobacterium tuberculosis* infection. Two IGRAs that have been approved by the U.S. Food and Drug Administration (FDA) are commercially available in the U.S: QuantiFERON®-TB Gold In-Tube test (QFT-GIT); T-SPOT®.TB test (T-Spot).
- Studies suggest that international medical graduates (IMG) physicians are less likely to follow national guidelines, by recommending treatment of LTBI for themselves or their patients.
- Patients often exhibit poor adherence to LTBI treatment, and those at relatively lower risk are less likely to initiate treatment, relative to those classified as higher risk.
- Physicians are often not aware of novel strategies for increasing compliance with treatment, such as the use of video directly observed therapy (VDOT) to monitor treatment of persons with LTBI.

Physicians may improve their care of patients with LTBI by engaging in continuing medical education that provides practical integration of current evidence-based guidelines and recommendations into their standards of care, including, but not limited to the following:<sup>4,6,12</sup>

- Persons in high-risk populations should be screened for tuberculosis and treated, if necessary.



- The U.S. Preventive Services Task Force (USPSTF) recommends the following risk assessment:
  - Populations at increased risk for LTBI include persons who were born in, or are former residents of, countries with increased tuberculosis prevalence and persons who live in, or have lived in, high-risk congregate settings (e.g., homeless shelters and correctional facilities). Local demographic patterns may vary across the United States; clinicians can consult their local or state health departments for more information about populations at risk in their community.
- Persons in low-risk populations should not be screened for tuberculosis because of the potential for false-positive results. A decision to test is a decision to treat.
- The interferon-gamma release assay is the preferred screening method for tuberculosis in patients with a history of bacillus Calmette-Guérin vaccination and in those unlikely to return for interpretation of tuberculin skin test results. Skin testing is preferred in children younger than five years.
- Twelve weekly doses of isoniazid and rifapentine (Priftin) administered under direct observation are as effective as a nine-month regimen of daily isoniazid, and may result in better patient compliance.

Additionally, physicians should consider the 2017 American Thoracic Society/Infectious Diseases Society of America/Centers for Disease Control and Prevention Clinical Practice Guidelines: Diagnosis of Tuberculosis in Adults and Children, and how to implement guideline recommendations into practice.<sup>13</sup>

These recommendations are provided only as assistance for physicians making clinical decisions regarding the care of their patients. As such, they cannot substitute for the individual judgment brought to each clinical situation by the patient's family physician. As with all clinical reference resources, they reflect the best understanding of the science of medicine at the time of publication, but they should be used with the clear understanding that continued research may result in new knowledge and recommendations. These recommendations are only one element in the complex process of improving the health of America. To be effective, the recommendations must be implemented. As such, physicians require continuing medical education to assist them with making decisions about specific clinical considerations.

Resources: Evidence-Based Practice Recommendations/Guidelines/Performance Measures

- Update on latent tuberculosis infection<sup>4</sup>
- AAFP Clinical Preventive Service Recommendation: Tuberculosis Infection – Asymptomatic Adults<sup>6</sup>
- ATS/IDSA/CDC Tuberculosis Guidelines<sup>13,14</sup>
- FamilyDoctor.org. Tuberculosis (patient resource)<sup>15</sup>

References



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14. Centers for Disease Control and Prevention. Tuberculosis - Guidelines by Topic. 2017;
15. FamilyDoctor.org. Tuberculosis. 2014;