Eliminating Tuberculosis in LA County: A Call to Primary Care Providers to Screen and Treat Infection

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Every year, World Tuberculosis Day is celebrated on March 24th to commemorate the day in 1882, that Dr. Robert Koch discovered the bacteria Mycobacterium tuberculosis and identified it as the cause of the disease tuberculosis (TB). Well over 100 years later, TB persists as a global health threat, causing almost 1.8 million deaths worldwide in 2015, even though it is a preventable and curable disease.

The Centers for Disease Control and Prevention released a statement on World TB Day 2017 that the goal of TB elimination in the U.S. will not be reached this century without a change in strategy. TB elimination requires not only effective treatment of individuals with TB disease, but also the identification and treatment of those with latent TB infection. Latent TB infection, or simply, TB infection, is the asymptomatic and noninfectious form of TB that can later reactivate and progress to active disease. It is estimated that currently 11 million individuals in the U.S. have TB infection.

Improvements in laboratory diagnostics and treatment regimens for TB infection, along with the recent recommendation by the U.S. Preventive Services Task Force (USPSTF) for screening asymptomatic adults at risk for TB infection, enable primary care providers to take on a larger role in the fight against TB. Working together, community providers and public health can achieve the goal of TB elimination in California by 2040.

This article will summarize the key steps for recognition and treatment of TB disease and TB infection and showcase new tools from the LA County TB Control Program (TBCP) designed to help primary care providers detect and treat TB infection.

TB Disease vs. TB infection

In LA County, TBCP refers to "latent TB infection" as "TB infection" to encourage clinicians to take action once they diagnose TB infection in their patients. If a person with TB infection completes preventive treatment, their chance of developing TB disease is significantly reduced.

TB disease most commonly presents as pulmonary TB, but in LA County in 2016, 17% of the cases of TB disease were extrapulmonary involving other organs such as the kidney, brain, and lymph nodes. TB is an airborne transmissible disease that spreads when a person with pulmonary TB disease coughs or sneezes and releases microscopic droplets with TB bacteria into the air and people sharing the same airspace inhale the infected droplets. Not all who are exposed to TB develop TB infection, and factors such as the length of time a person spends in the affected airspace, the amount of bacteria released into the air, and the immune system of the exposed person determine the likelihood of developing TB infection. On average, about one third of those who have a significant exposure to TB develop TB infection. Visit the CDC "Basic TB Facts" website for more information.

Interestingly, about 90% of people with untreated TB infection never develop TB disease, and currently there are no diagnostic tests that reliably predict who will progress to having TB disease. About 5% of people with newly acquired TB infection progress to TB disease within two years if left untreated. The other 5% with untreated TB infection who reactivate and progress to TB disease may do so many years and even decades after being infected. Medical conditions such as diabetes, HIV, cancer, active tobacco use, and renal disease as well as immunosuppressive medical therapies can increase the risk of reactivation of TB disease from TB infection.

Because there is no vaccine that protects people from being infected with TB, treatment of TB disease and TB infection are the only ways to eliminate TB. Countries with high rates of TB disease use the BCG vaccine to prevent young children from progressing from TB infection to disseminated TB, but individuals vaccinated with the BCG vaccine can still develop TB infection and TB disease.

USPSTF Recommends Screening for TB infection

In September 2016, the USPSTF issued a recommendation that all adults at increased risk for TB be screened for TB infection. Though the USPSTF found no evidence on the optimal frequency of TB screening, it stated that screening frequency could range from 1-time only screening among those who are at continued risk of exposure.

An important impact of this screening recommendation by the USPSTF is that it brings TB testing for adults at risk for TB infection into the preventive care activities of the Affordable Care Act. In 2018, Californians with health insurance who are at risk for TB infection will not have additional out of pocket costs for TB testing.

TB in California and Los Angeles

California with its global population and economy reports the largest number of cases of TB disease in the U.S. and in 2016, 22% of the nation’s TB cases. Reactivation of TB infection accounts for about 80% of cases of TB disease in the California and represents missed opportunities for preventing TB. The pool of these potential cases are the approximately 2.4 million Californians with TB infection. In 2016, LA County reported 553 cases of TB and 71 deaths. New York City was the only local health jurisdiction in the U.S. reporting more TB cases at 565.

http://rx.ph.lacounty.gov/RxTB0517
Working toward TB elimination will have both short term and long term positive impact on our community. In recent years, a collaboration between community providers and the Public Health Department to increase testing and treatment for TB infection in the homeless population was effective in bringing a large outbreak of TB in the homeless under control.

In order to find these cases of TB disease, TBCP oversees the evaluation of approximately 2,000 people and the contact investigations of thousands of people who were exposed to TB every year. If successful, TB elimination in LA County would mean fewer than 10 cases of TB per year, substantially reducing the costs associated with finding and evaluating potential TB cases and investigating exposure. 6,12

Let’s Eliminate TB in LA County

TBCP has redoubled its efforts to eliminate TB in LA County and is launching a campaign to help reduce the pool of asymptomatic TB infection. TBCP has developed a TB infection provider toolkit to help providers detect and treat TB infection. TBCP encourages primary care providers to help eliminate TB in LA County by taking the following steps:

Know the symptoms of TB disease

Most people with TB disease have symptoms which include fever, cough, weight loss, night sweats, and fatigue lasting greater than three weeks. Providers who identify patients with these symptoms and TB risk factors should obtain a chest x-ray immediately and test for TB. If you suspect that your patient has TB disease, complete a TB Confidential Morbidity Report. The TBCP offers medical consultation Monday through Friday from 8:00 am to 5:00 pm at (213) 745-0800.

Know the risks for TB infection in Los Angeles County

The risk factors for TB nationally and in LA County in adults are shown in the box below.3,5

<table>
<thead>
<tr>
<th>Risks for TB Infection in Asymptomatic Adults in LA County</th>
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<tbody>
<tr>
<td>- <strong>Foreign-born</strong> person from country with elevated TB rate</td>
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<tr>
<td>Includes countries other than the U.S., Canada, Australia, New Zealand, or Western or North European Countries</td>
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<tr>
<td>- <strong>Immunosuppression, current or planned</strong></td>
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<tr>
<td>HIV infection, organ transplant recipient, treated with TNF-alpha antagonist (e.g., infliximab, etanercept, others), steroids (equivalent of prednisone &gt;15 mg/day for &gt;1 month) or other immunosuppressive medication</td>
</tr>
<tr>
<td>- <strong>Close contact</strong> to someone with TB disease at any time</td>
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<tr>
<td>- <strong>History of homelessness</strong></td>
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<tr>
<td>- <strong>History of incarceration</strong></td>
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Use the LA County TB risk assessment tools in the provider toolkit to help determine if your patient is at risk for TB infection. Each risk assessment (adult, pediatric, college/university student, and school employee/volunteer) is accompanied by a user guide with additional facts about TB testing including frequency of testing and treatment for TB infection.

If your patient is at risk for TB infection, test for TB

The two tests widely available in LA County for TB testing are the tuberculin skin test (TST) or interferon gamma release assay (IGRA) TB blood test. If you do not offer these tests or see an uninsured or underinsured patient, Public Health Centers and low cost clinics offer TB testing for people at risk for TB infection. For more information about the IGRA TB tests, see the IGRA FAQ in the provider toolkit.

If your patient has TB infection, treat the TB infection

There are new drugs to treat TB infection that are safer and can treat the inactive form of TB infection in 3-4 months rather than 6-9 months. These new regimens give primary care providers better options to treat their patients who have TB infection. Children, adults under 50 with risk factors for progression such as diabetes and tobacco use, and patients with normal chest radiology are excellent candidates for TB infection treatment. Providers with patients who have risks for toxicity and questions about initiating treatment should work with their local TB specialist or may contact the TBCP for medical consultation. For more information about the regimens to treat TB infection, see the new TB infection drug fact sheets in the provider toolkit.

TB infection Provider Toolkit

- **TB Risk Assessment Tools** to identify TB infection in asymptomatic individuals including adults, children, school employees and college students.
- **Interferon Gamma Release Assay (IGRA) FAQs**
- **TB infection Drug Treatment Fact Sheets** for short course rifamycin based TB infection regimens and isoniazid regimen

http://rx.ph.lacounty.gov/RxBTB0517
Conclusion

It will take a community-wide effort to eliminate TB in LA County, and primary care providers play a crucial role. The TBCP has recently reconvened the Coalition to End TB in Los Angeles and invites providers and agencies who serve populations at risk for TB to join the Coalition so that together we can accelerate progress toward TB elimination. To get more information about the Coalition, visit Coalition to End TB in Los Angeles.

If you have any questions about TB, please contact the Los Angeles County TB Control Program at 213-745-0800 or visit www.publichealth.lacounty.gov/tb.

Additional Resources

- CDC TB Basics
- CDC TB Testing and Diagnosis

References