**TUBERCULOSIS SCREENING GUIDELINES**

Washington State Clinical Laboratory Advisory Council

**GROUP 1 - HIGHEST PRIORITY.**
Close contacts (i.e. sharing same household or other enclosed environments) of persons who have suspected or confirmed TB. Patients with or at risk of HIV infection

- **TST AND CXR**
  - **TST (+/-)**
    - CXR Abnormal
    - If close contact, retest with TST in 8-10 weeks; initiate treatment for LTBI for close contacts who are immunocompromised or <5 years old.
  - **TST (-)**
    - CXR Normal
  - **TST (+)**
    - CXR Abnormal
    - Refer for clinical evaluation and LTBI treatment

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**GROUP 2 - HIGH RISK GROUPS.**
Persons who inject illicit drugs. Persons with medical risk factors (i.e. diabetes mellitus; prolonged use of corticosteroids and other immunosuppressive therapy; chronic renal failure; leukemias/lymphomas; carcinoma of head/neck; weight loss of > 10% of ideal body weight; silicosis; gastrectomy; jejunoileal bypass). Residents/employees of high risk congregate setting (i.e. correctional institutions; nursing homes; homeless shelters; drug & alcohol treatment centers; healthcare facilities).

Persons recently arrived from countries having high prevalence of TB. Medically underserved, low-income populations. Locally identified high-risk groups. Children and adolescents exposed to adults in high-risk categories.

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**Screening persons other than members of high risk groups is NOT recommended**

- **CXR** = Chest X-Ray
- **LTBI** = Latent TB Infection
- **MOTT** = Mycobacteria Other Than TB
- **QFT-G** = QuantiFERON - TB Gold
- **TST** = Mantoux 5TU

(See reverse side for interpretation of skin test results)

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**CXR Normal**

- **TST (See reverse side for information and use of QuantiFERON)**
  - **TST**
    - Positive
    - Negative

- **CXR**
  - **Normal**
  - **Abnormal**

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**Sputum Culture:** 3 consecutive sputum specimens can be collected 8-24 hours apart with one being in the early morning.

- Perform fluorochrome smear on concentrated specimens.
- Inoculate rapid isolation (radiometric / non-radiometric system) AND solid medium.

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**For patients with positive AFB smears at the time of diagnosis,** collect sputums every 2 weeks until 2 consecutive specimens are smear negative.

**Perform AMTD**** upon request if clinically suspected or as part of an outbreak investigation**

- Evaluate for empiric treatment, if clinically indicated
- Evaluate for Treatment
- For patients with positive AFB smears at the time of diagnosis, collect sputums every 2 weeks until 2 consecutive specimens are smear negative
- Perform BACTEC or Plate Susceptibility Test
- Collect sputums at monthly intervals until 2 consecutive specimens are culture negative. **NOTE:** If culture positive after 3 months, consider resistance, non-compliance, or non-absorption.

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**FOR EDUCATIONAL PURPOSES ONLY**

The individual clinician is in the best position to determine which tests are most appropriate for a particular patient.
**INTERPRETATION OF TUBERCULIN SKIN-TEST (TST) RESULTS**

<table>
<thead>
<tr>
<th><strong>A. &gt;5mm is positive</strong> for:</th>
<th><strong>B. &gt;10mm is positive</strong> for persons who do not meet the criteria in (A.) and who belong to one or more of the following:</th>
<th><strong>C. &gt;15mm is positive</strong> for persons with no risk factors for TB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recent close contacts of persons with active TB</td>
<td>Injection-drug users</td>
<td>Anergy testing is poorly standardized or can be selective (e.g. anergy or reactivity to mumps or candida may not reliably predict anergy or ability to respond to TST).</td>
</tr>
<tr>
<td>Persons with HIV infection</td>
<td>Persons with other medical conditions reported to increase risk of progressing from latent to active TB (see list in Group 2 box on the reverse side)</td>
<td>Should not be routinely used as part of screening for TB even in HIV infected patients.</td>
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<tr>
<td>Persons with fibrotic CXR consistent with healed TB</td>
<td>Residents/employees of high-risk congregate settings (i.e. correctional institutions, nursing homes, homeless shelters, drug &amp; alcohol treatment centers, healthcare facilities)</td>
<td>Anergy testing is poorly standardized or can be selective (e.g. anergy or reactivity to mumps or candida may not reliably predict anergy or ability to respond to TST).</td>
</tr>
<tr>
<td>Organ transplant recipients and other immunosuppressed patients</td>
<td>Persons recently arrived from countries having high prevalence of TB (e.g. ≤ 5 years since arrival)</td>
<td>Should not be routinely used as part of screening for TB even in HIV infected patients.</td>
</tr>
<tr>
<td></td>
<td>Medically underserved, low-income populations</td>
<td>Anergy testing is poorly standardized or can be selective (e.g. anergy or reactivity to mumps or candida may not reliably predict anergy or ability to respond to TST).</td>
</tr>
<tr>
<td></td>
<td>Locally identified high-risk groups</td>
<td>Anergy testing is poorly standardized or can be selective (e.g. anergy or reactivity to mumps or candida may not reliably predict anergy or ability to respond to TST).</td>
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<tr>
<td></td>
<td>Children of any age exposed to adults in high-risk categories</td>
<td>Anergy testing is poorly standardized or can be selective (e.g. anergy or reactivity to mumps or candida may not reliably predict anergy or ability to respond to TST).</td>
</tr>
</tbody>
</table>

**ANERGY**
- Anergy testing is poorly standardized or can be selective (e.g. anergy or reactivity to mumps or candida may not reliably predict anergy or ability to respond to TST).
- Should not be routinely used as part of screening for TB even in HIV infected patients.

**BOOSTER EFFECT**
- Persons with TB infection may have negative TST when tested many years after infection.
- Initial TST may stimulate (boost) ability to react to PPD.
- Positive reactions to subsequent tests may be misinterpreted as new infection.
- See Two-Step Testing.

**TWO-STEP TESTING**
For baseline skin testing of adults who will be retested periodically to distinguish boosted reactions from reactions due to new infections:
- If first test is (+), consider person infected at baseline.
- If first test (-), give second test 1-3 weeks later.
- If second test (+), consider person infected at baseline.
- If second test (-), consider person uninfected at baseline.

**QuantiFERON (QFT):** The Centers for Disease Control and Prevention (CDC) Guidelines for the use of QFT in diagnosing Latent Mycobacterium tuberculosis Infection (LTBI) can be found in the Morbidity Mortality Weekly Report (MMWR), January 31, 2003, Volume 52, pages 15-18 (http://www.cdc.gov/mmwr/PDF/rr/rr5202.pdf). CDC states that QFT can aid in detecting M. tuberculosis infections among certain populations who are at increased risk for LTBI including recent immigrants from countries with a high prevalence of TB infection, injection-drug users, residents and employees of prisons and jails, and healthcare workers that, after their pre-employment assessment, are considered at increased risk for exposure to TB. CDC states that QFT may also be used for military personnel screening, hospital staff and health-care workers whose risk of prior exposure to TB was low, and U.S.-born students at certain colleges and universities. The full text of the CDC document can be found at: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5202a2.htm.

**REFERENCES**