Sputum specimens: 3 consecutive sputum specimens should be collected 8-24 hours apart with at least one specimen collected upon awakening. Specimens should be kept refrigerated until shipped. Specimens should **not** be batched but sent to WAPHL after collection.

Smear: Perform fluochrome smear on concentrated specimens.

- **Smear (-)**: Wait for culture results
- **Smear (+)**: Nucleic Acid Amplification Test (NAAT) (performed on smear (–) only if requested)
  - **Neg**: Wait for culture results
  - **Pos**: Drug resistant screening by molecular methods*
    - No mutation detected
    - Mutation detected: Resistance detected
      - **PAN Sensitive**: Perform 2nd line drug sensitivities
    - Sent for genotyping

Culture: Inoculate liquid and solid medium

- **Culture (+)**: Perform rapid 1st line drug sensitivities
- **Culture (-)**: Species identification by DNA Probe
  - MTB identified
  - MOTT

* Drug resistance screening by molecular methods can be performed on diagnostic specimens when DNA concentration is sufficient or on confirmed culture positive TB cultures.

**Abbreviations used in document:**
- **LTBI** = Latent TB Infection
- **MOTT** = Mycobacteria Other Than TB
- **NAAT** = a rapid molecular diagnostic test performed on respiratory specimens. A positive NAAT is a verified case of TB even if the culture is negative.

FOR EDUCATIONAL PURPOSES ONLY
The individual clinician is in the best position to determine which tests are most appropriate for a particular patient.
**Diagnosing Latent TB Infection**

- Perform TB test (TST or IGRA)
  - **TB Test Positive**
    - Obtain Chest Radiograph
      - Radiograph Abnormal*
        - Obtain laboratory diagnostics (Sputum)**
          - Sputums positive for TB disease***
            - Treat for active TB disease
          - Sputums negative for TB disease
            - Treat for LTBI
        - Radiograph Normal
          - Treat for LTBI
      - Evaluate with medical and exposure history
  - **TB Test Negative**
    - Obtain Chest Radiograph
      - Radiograph Normal
        - Evaluate with medical and exposure history
      - Radiograph Abnormal*
        - Obtain laboratory diagnostics (Sputum)**
          - Sputums positive for TB disease***
            - Treat for active TB disease
          - Sputums negative for TB disease
            - Treat for LTBI
    - Evaluate with medical and exposure history

* Consider notifying/consulting with local health department
** Collect 3 sputums for AFB smear, culture and nucleic acid amplification testing (NAAT)
***Notify the local health department and consult and/or refer patient to them for treatment.

**REFERENCES**
2. CDC Diagnostic Standards and Classification of tuberculosis in Adults and Children 2005
5. CDC Updated Guidelines for the use of Nucleic Acid Amplification Test in the diagnosis of Tuberculosis Jun 16, 2009/58 (01); 7-10.

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