

# ANMC Pediatric Tuberculosis Testing Guideline

## Indications for TB testing

- Suspected TB disease, *or*
- Exposed to a source patient with infectious tuberculosis, *or*
- If screening required for work/school etc, *or*
- Recently immigrated (<2 years) from a country with high TB prevalence

## Tuberculin Skin Testing (aka PPD or TST) vs. Interferon Gamma Release Assay (IGRA)

Tuberculin Skin Testing (TST) is reasonable in children of all ages requiring testing for TB infection:

- Requires second visit for reading at 48-72h
- Results available faster than IGRA, generally preferred for inpatients
- Cross-reacts with BCG vaccination and Non-tuberculous mycobacteria
- Inter-observer variability confounds interpretation
- Induration >5 mm should be considered positive

Interferon-Gamma Release Assay (IGRA) may be used in patients over 1 year of age, and is preferred if:

- History of BCG vaccination
- Unlikely/unable to return to have TST read
- Urgent results not needed (turn-around time 5-7 days)

## AFB smear/culture and PCR sampling

Required if **either** of the following:

- Signs or symptoms suggestive of TB disease
  - >2 weeks of cough, *and/or*
  - Unexplained fever, *and/or*
  - Lethargy, *and/or*
  - Drenching sweats, *and/or*
  - Hemoptysis, *and/or*
  - Unexplained weight loss
- Chest radiograph (CXR) suggestive of active tuberculosis
- Testing should include 3 AFB Culture and 2 AFB PCR Mtb Cmplx

## Testing for Active Pulmonary TB

Expectorated sputa x3 q8h preferred in all ages (*Zar, H, Arch Dis Child. 2000 Apr; 82(4): 305-308*)

- If no productive cough, RT to induce sputa with hypertonic saline
  - “Orders for Respiratory Sputum Induction”
  - 5mL of 3% hypertonic saline after albuterol MDI x15’
    - NPO for 2 hours prior to induction
  - If unable to expectorate, collect samples by NP aspirate
  - 1 of 3 MUST be early AM collection
- Gastric aspirates should rarely be required
- If extra-pulmonary TB suspected, contact Pediatric Infectious Diseases for testing recommendations

## Considerations

- Consider Pediatric Infectious Diseases consultation for all suspected cases of active tuberculosis in children **or** for children <5y who are exposed to active tuberculosis
- Airborne isolation is required for inpatients with suspected pulmonary TB until MTB PCR is negative x2 from sputa, bronchoscopy, or gastric aspirate. For questions please refer to ANMC Infection Control Policies for airborne isolation when ruling out pulmonary TB.
- A negative IGRA or TST does not rule out active TB.
- A positive IGRA or TST indicates a person is infected with TB. Symptoms of active TB (>2 weeks of cough, unexplained fevers, lethargy, drenching sweats, unexplained weight loss, or hemoptysis) or CXR consistent with pulmonary TB defines **TB disease**. AFB smears, cultures, and PCRs should be obtained and treatment considered.
- A positive IGRA or TST in a child **WITHOUT** symptoms who has a **NORMAL** CXR defines **Latent TB infection (LTBI)** and treatment should be offered. It is **NOT** necessary to collect AFB samples prior to treatment in children **WITHOUT** symptoms who have a **NORMAL** CXR. Treatment options include INH, rifampin, or INH/rifapentine. Contact Pediatric Infectious Diseases for questions regarding LTBI therapy in children.
- Live virus vaccines including MMR, rotavirus, varicella, yellow fever, and live-attenuated influenza vaccine may temporarily suppress tuberculin and presumably IGRA reactivity for 4–6 weeks. A TST can be applied or blood can be drawn for an IGRA at the same visit during which these vaccines are administered (i.e., before substantial replication of the vaccine virus); otherwise, non-urgent testing should be delayed 4–6 weeks post vaccination.
- Consultation with Alaska Section of Epidemiology TB Program should be done for all active TB infections (Ph # 269-8000). Consultation about testing and treating TB disease and LTBI is available if needed.
- **Definitions:** IGRA- Interferon-Gamma Release Assay (Quantiferon TB Gold, not currently available in all areas of Alaska); INH- Isoniazid; LTBI- Latent Tuberculosis Infection; MTB- *Mycobacterium tuberculosis*; PCR- Polymerase chain reaction; TST- Tuberculin Skin Testing

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