Revised 11-29-2022

ALGORITHM FOR ACTIVE PULMONARY *MYCOBACTERIA TUBERCULOSIS* (TB) INFECTION EVALUATION

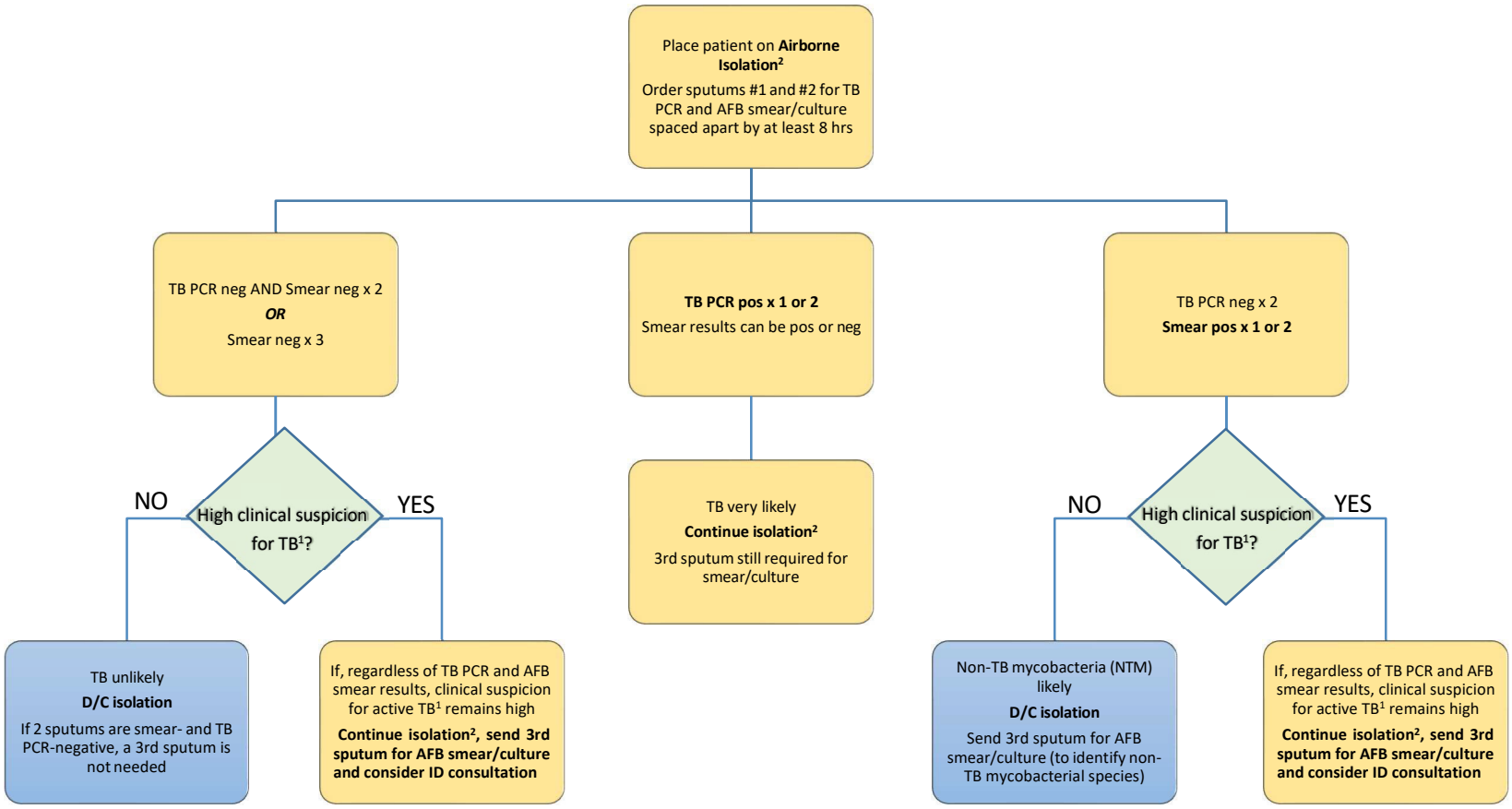
(ADULT PATIENTS AGE ≥18 YEARS ONLY*)

Key Points:

- Obtain sputum samples for AFB smear and culture that are spaced at least 8 hours apart
- Most patients will need 3 sputum samples ordered: 2 for both AFB smear/culture *and* TB PCR and one additional specimen for just AFB smear/culture. See the table below for exceptions.
- See below for guidance on
  - ✓ Whether two or three sputum specimens are needed
  - ✓ The number of TB PCRs to request
  - ✓ Criteria for discontinuation of Airborne Isolation. Contact Infection Control before discontinuing isolation.
    - Business hours: Adult IP on call Voalte 628-248-9059, Peds IP on call Voalte 628-248-8503, or Infection Prevention Main line 415-353-4343
    - Non-business hours—contact Nursing Supervisor (ML: x38036; MB: x20728)
- Ensure that the SFDPH TB Control Unit (415-206-8524) is aware of confirmed TB cases and all patients with suspected TB who are being empirically treated with multidrug TB therapy

*Limited to adult patients ≥18 years of age because of insufficient data regarding the sensitivity and positive/negative predictive value of TB PCR for pediatric patients

I. Flow diagram for TB evaluation steps



II. Detailed TB evaluation grid

If clinical suspicion for active pulmonary or laryngeal TB is *high*[1] (including patients receiving empiric active TB treatment), continue Airborne Isolation regardless of AFB smear or TB PCR results until appropriate isolation discontinuation criteria are met[2].

If clinical suspicion for active pulmonary or laryngeal TB is *low to moderate*[1], use the following criteria:

Sputum Sample #1		Sputum Sample #2		Can Airborne Isolation be discontinued?	Sputum Sample #3, if needed (see details below)		Comments
AFB smear	**TB PCR**	**AFB smear**	**TB PCR**		**AFB smear**	**TB PCR**	
Negative	Negative	Negative	Negative	Yes—OK to d/c isolation	Not needed	Not needed	
		Negative	**Positive**	[2]No--continue isolation	[3]Send for AFB smear/culture	Not needed	TB infection is very likely
		Positive	Negative	Yes—OK to d/c isolation	[3]Send for AFB smear/culture	Not needed	Nontuberculous mycobacterial infection likely
		Positive	**Positive**	[2]No--continue isolation	[3]Send for AFB smear/culture	Not needed	TB infection is very likely
Negative	**Positive**	**Positive** or Negative	Not needed	[2]No--continue isolation	[3]Send for AFB smear/culture	Not needed	TB infection is very likely
Positive	Negative	**Positive** or Negative	Negative	Yes—OK to d/c isolation	[3]Send for AFB smear/culture	Not needed	Nontuberculous mycobacterial infection likely
		Positive or Negative	**Positive**	[2]No--continue isolation	[3]Send for AFB smear/culture	Not needed	TB infection is very likely
Positive	**Positive**	**Positive** or Negative	Not needed	[2]No--continue isolation	[3]Send for AFB smear/culture	Not needed	TB infection is very likely

Negative	Not Done	Negative	Not Done	If TB PCR testing is not performed, continue isolation until 3 respiratory samples are AFB smear-negative	Negative	Not Done	If 3 respiratory samples are AFB smear-negative, TB infection is unlikely and Airborne Isolation can be discontinued.

[1] The degree of clinical suspicion for active pulmonary TB should be based on the likelihood of prior exposure to TB (e.g., lived in an area of the world with relatively high TB rates, close contact with someone with active TB, known prior positive TB skin test or Quantiferon/T spot result), risk factors for TB reactivation (e.g., medical conditions associated with weakened immune systems such as cancer, HIV, diabetes, severe renal disease, organ or stem cell transplantation; receipt of immunosuppressive medications such as steroids, chemotherapy), and clinical signs and symptoms suggestive of active pulmonary TB.

[2] See Isolation Precautions Table https://infectioncontrol.ucsfmedicalcenter.org/isolation-table for guidance regarding duration of airborne isolation.

[3] Send a total of at least 3 sputum samples for AFB smear and culture—this is important for mycobacterial species identification and for anti-TB drug susceptibility testing