

Supplemental Appendix: Protocol for Assigning Final Diagnoses

Final diagnoses were assigned by review of the following information:

1. Results of spot and early morning sputum mycobacterial cultures at time of enrollment;
2. Results of chest radiography;
3. Results of bronchoscopy inspection, stains and non-mycobacterial cultures;
4. Results of empiric anti-tuberculosis (TB) treatment or antibiotic treatment trials (whether the patient improved from baseline to the two-month visit, in the patient's or clinician's judgment);
5. Results of sputum smears and cultures at the two-month follow-up visit.

Possible diagnoses included:

1. Pulmonary TB (culture-positive and culture-negative)
2. Extra-pulmonary TB
3. Pulmonary Kaposi's sarcoma (KS)
4. *Pneumocystis jirovecii* pneumonia (PCP)
5. Pulmonary cryptococcosis (Crypto PNA)
6. Pulmonary aspergillosis (*Aspergillus* PNA)
7. Bacterial pneumonia (BPNA)
8. Acute bronchitis
9. Other
10. Unknown.

All diagnoses were assigned in a hierarchical fashion, with TB status assigned first, and all other diagnoses assigned second according to the algorithm shown below. Cases with an uncertain diagnosis and/or atypical clinical circumstances were presented to the research team and at least two pulmonary physicians (AC, JLD, LH, WW, SY), and a final diagnosis assigned by consensus.

(1) Pulmonary TB (PTB)

- **Culture-positive TB** was defined as having a positive sputum or BAL culture growing one or more colony forming units of bacilli morphologically consistent with *M.TB*.
- **Culture-negative TB** was defined in one of two ways. Patients who improved from baseline to two months with continuous treatment with anti-TB drugs with all mycobacterial cultures being negative. In addition, patients with negative cultures whose cough and respiratory symptoms failed to improve from baseline to two months but whose 2-month sputum culture grew one or more colony forming units of bacilli morphologically consistent with *M.TB* were also classified as having culture-negative TB.
- **Non-TB status** was defined as having negative baseline cultures for *M.TB* and improvement without TB treatment with follow-up smears and cultures not positive for *M.TB*; as having negative baseline cultures for *M.TB* without improvement, without TB treatment and negative follow-up smears and follow-up cultures not positive for *M.TB*; or, as having negative baseline cultures for *M.TB* without improvement, with TB treatment and follow-up smears negative and follow-up cultures not positive for *M.TB*.
- **Indeterminate TB status** was defined as having negative cultures for *M.TB* and dying or being lost to follow-up prior to the two month visit; as having no improvement with or without treatment for TB and a non-negative smear and an unknown follow-up culture result for *M.TB*; or as having no improvement with treatment but a positive two-month sputum smear and a negative two-month sputum culture for *M.TB*. In addition, those with unknown baseline culture status, no or unknown improvement with TB treatment, and an unknown two-month sputum culture result were described as having indeterminate TB status.

Table S1. Definitions of TB Status Categories:

TB Category	Baseline Sputum/BAL Culture	Treated for TB?	Improved at 2 months?	2-month Sputum Smear	2-month Sputum Culture
Culture-positive TB	>1 CFU	--*	--	--	--
Culture-negative TB	<1 CFU	Yes	Yes	--	--
	<1 CFU	--	--	--	>1 CFU
Non-TB Status	Negative	No	Yes	Negative, or Not collected	Negative, or Contaminated
	Negative	No	No	Negative	Negative, or Contaminated
	Negative	Yes	No	Negative	Negative, or Contaminated
Unknown TB Status	Negative, or Contaminated	Unknown	--	--	--
	Negative, or Contaminated	--	Died, or Lost	--	--
	Negative, or Contaminated	No	--	Positive, or Not collected	Contaminated, or Not collected
	Negative, or Contaminated	Yes	No	Positive, or Not collected	Negative, Contaminated, or Not collected
	Missing	--	No, or Died, or Lost	--	Contaminated, or Not collected

Legend: *-- denotes that the result contained within does not affect the classification scheme.

2) Extra-pulmonary TB (EPTB)

- Clinical evidence of extra-pulmonary TB by one of the following, AND
 - TB meningitis by cerebrospinal fluid chemistries;
 - TB adenitis by lymphadenopathy on physical exam, ultrasound or histopathology;
 - TB pericarditis by chest radiography or echocardiography;
 - Miliary TB by chest radiography
 - TB pleuritis by pleural aspirate chemistries;
 - TB ascites by peritoneal aspirate chemistries;
 - Spinal TB by plain radiography

- Clinical response to treatment at 2 months.

(3) *Pneumocystis pneumonia* (PCP)

- Positive Giemsa stain on BAL or induced sputum

(4) Cryptococcal Pneumonia (CryptoPNA)

- Positive BAL KOH stain or positive culture on Sabouraud's agar for *Cryptococcus*

(5) Pulmonary Kaposi's sarcoma (PKS)

- Typical bronchial lesions on bronchoscopy

(6) *Aspergillus* Pneumonia

- Positive BAL culture for *Aspergillus*

(7) Bacterial pneumonia (BPNA), or Acute bronchitis:

- Clinical criteria
 - No alternate diagnosis, AND
 - Clinical improvement at 1-2 weeks or 2 months , AND
 - All acid-fast bacilli cultures negative
- Radiographic criteria
 - Pulmonary infiltrates on chest radiography?
 - Yes: bacterial pneumonia
 - No: acute bronchitis

(8) Other

- This diagnosis is assigned if the patient has an infectious illness not mentioned above or any non-infectious illness that explains all of their pulmonary symptoms

(9) Unknown

- This diagnosis is assigned if the patient fails to meet any of the above criteria.