

Supplementary Table S1: Sputum quality assessment and grading system used at the Baltimore Laboratory [13-15]

| Properties | Grading | |
|--|--|--|
| | Good | Poor |
| 1. Sputum Quality | Presences of >25 leucocytes/field at 100X | Absence or >5 of leucocytes in the smear. Presence of more than 10 epithelial cells/field |
| 2. Size | 1-2cm X 2-3cm Oval in shape and smear centrally placed in the slide | Smear size smaller than 1-2cm X 2-3cm and larger than 1-2cm X 2-3cm Irregular shape. Smear placed not centrally |
| 3. Evenness | Sputum spread evenly on the glass slide not too thick not too thin | Smear too thick or too thin |
| 4. Thickness | Mono-layer smear on the glass slide Whole depth of the smear layer can be focused sharply in each field | Smear too thick with over-lapping cells seen in entire smear. Smear too thin Whole depth of the smear layer can be focused sharply in less than 50% of the field |
| 5. Cleanness | Clean smear. Smear free from stain deposit, crystals produced by overheating of stain and poor maintenance of dyes. Absence of debris. | Dirty smear, cannot screen the smear on the slide. Smear found with stain deposits, crystals and debris. |
| 6. Staining quality by microscopic observation | AFB and background clearly distinguished. AFB bright red in color. Leucocytes stained blue and absence of stain particles. | Not able to distinguish AFB and background. AFB faintly red in color. Fuchsin color remaining on the background Methylene blue color remaining on the un-stained parts. |

Supplementary Table S2: Sputum quality assessment at Haiti's National Laboratory (LNSP)

| Properties | Assessment |
|-------------------|---|
| 1. Sputum Quality | Presence of epithelial cells and white cells |
| 2. Size | 2x1 cm in the center of the slide |
| 3. Thickness | Able to read a printed text through the dry smear |
| 4. Color | AFB bright red on a blue background |