Suggested algorithm for use of Xpert for people living with HIV and those with unknown HIV status in HIV prevalent settings

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(On behalf of TB/HIV Working Group)
TB is different among PLHIV!

- AR of 5-15% vs. life time risk 10% in HIV negatives
- Higher chance for smear negative disease
  - Smear negative pulmonary = 24 – 61%
  - Extrapulmonary = 4 – 40%
- Autopsy studies: undiagnosed TB in 14 – 54%
- Huge delay in diagnosis (11-34 day in ideal situation)
- High mortality (72-98%) with MDR/XDR TB
Patients eligible for Xpert MTB/RIF as initial diagnostic test if available

- TB suspects living with HIV in all settings or with unknown HIV status in high HIV prevalent settings

- A TB suspect is defined as any person living with HIV with any one of the following symptoms
  - Cough
  - Night sweats
  - Fever
  - Weight loss

  (New WHO definition as of December 1, 2010)
TB suspect living with HIV in all settings or with unknown HIV status in HIV prevalent settings

Xpert and HIV test if HIV status unknown

Xpert MTB+/RIF-
- Enrol on relevant TB regimen
  - CPT
  - ART

Xpert MTB+/RIF+
- Enrol on MDR-TB regimen
  - DST/SLD
  - CPT
  - ART

Xpert MTB-/RIF-
Ambulatory patient with no danger signs
- Follow WHO 2007 algorithm (a)

Seriously ill patient with danger signs
- Follow WHO 2007 algorithm (b)
1. Among people living with HIV, a TB suspect is defined as anyone who reports any one of current cough, fever, weight loss or night sweats. People living with HIV who do not report any of these symptoms should be offered isoniazid preventive therapy.

2. HIV prevalent settings are defined as countries, subnational administration units (e.g. districts, counties) or selected facilities (e.g. referral hospitals, drug rehabilitation centres) where the HIV prevalence rate among pregnant women is ≥1% or HIV prevalence among tuberculosis patients is ≥5%.

3. Ideally all TB suspects living with HIV or with unknown HIV status in HIV prevalent settings should be investigated with Xpert MTB/RIF as first diagnostic test. If resources are constrained, the seriously ill patients should get access to Xpert in priority. If Xpert is not available, the WHO 2007 algorithms for improving the diagnosis and treatment of smear-negative pulmonary and extrapulmonary TB among adults and adolescents in HIV-prevalent and resource-constrained settings should be used to expedite the diagnosis of TB.

4. The danger signs include any one of: respiratory rate> 30/min, temperature>39 C, heart rate>120/min and unable to walk unaided.
No rationing of Xpert for PLHIV!

However, if there is shortage or resource concern prioritise seriously ill PLHIV to avert death.
Ambulatory PLHIV who are Xpert negative

Xpert MTB-/RIF- and ambulatory HIV positive patient with no danger signs

Clinical assessment
CXR and liquid culture

TB likely
- Treat for TB
  - CPT
  - ART

TB unlikely
Treat for bacterial infection
HIV assessment
CPT

Response
No or partial response
Response

Reassess for TB
Seriously ill PLHIV who are Xpert negative

Xpert MTB-/RIF- and seriously ill HIV positive patient with danger signs

CXR and liquid culture
Parenteral antibiotics for bacterial infection
Consider treatment of PCP

TB likely
- Treat for TB
- CPT
- ART

TB unlikely

TB likely

Improvement after 3-5 days

Reassess for TB

TB unlikely

TB unlikely

No Improvement after 3-5 days

Start empiric TB treatment
Complete antibiotics
HIV assessment
CPT

Reassess for other diseases
Key principles

- Expedite diagnosis and reduce number of visits for PLHIV
- HIV testing and counselling should be part of the care
- Empiric TB treatment should be given to seriously ill HIV positive patients who do not respond to 3-5 days of parenteral antibiotics even if investigations for TB have turned negative

Expedite diagnosis and avert unnecessarily early death
Unresolved issues/points for discussion

• Where is the ideal place for Xpert? Hospital, health centre or clinic? All ART clinics?

• Should second Xpert test be performed in PLHIV with an initial negative Xpert result?

• What will be the programmatic implication of culture and CXR after initial negative Xpert?

• Are we "killing" smear microscopy for people living with HIV?