

A5300/I2003: Feasibility of identifying, recruiting, and characterizing adult MDR TB index cases and their adult and child household contacts on four continents

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BACKGROUND

- MDR-TB contacts who become infected have high risk of progressing to active TB and death.
- Evidence-based guidelines for treatment are lacking. The ACTG and IMPAACT networks jointly developed and implemented a feasibility study of MDR-TB household contacts (HHC) to inform the design of a future interventional trial.

METHODS

- Cross-sectional, multi-country study of adult MDR-TB index cases (IC) and their HHC (Phoenix Feasibility study)
- A HHC was defined as living in the same dwelling and sharing housekeeping arrangements as the IC, with exposure in the 6 months preceding the IC starting MDR-TB treatment.
- High risk contacts were defined as those with a positive test of TB infection (LTBI), HIV infection or age < 5 years.**
- IC underwent medical record review and TB bacteriology with drug susceptibility testing. HHC underwent symptom screening, with tuberculin skin testing (TST) and/or interferon-gamma release assay (IGRA), chest X-ray, HIV testing, and TB bacteriology if symptomatic or chest X-ray was abnormal.

RESULTS

- Over ~5 months, 308 eligible IC were identified at 20 sites in Botswana, Brazil, Haiti, India, Kenya, Peru, South Africa, and Thailand (Figure 1). 65% had cavitation on chest X-ray and 70% were AFB sputum smear positive (Table 1).
- Of 1018 enrolled HHC, 41% were male, median age was 25 (interquartile range (IQR) 12, 43) with 35% < 18 and 10% < 5 years old Figure 2), and 9 were diagnosed with TB prior to study entry.
- 776 HHC (77%) were classified as being at high risk for progression to TB disease: 102 (10%) < 5 years old, 64 (6%) HIV-infected, and 610 (61%) TST/IGRA positive (Tables 2 & 3)
- Review of HHC for active TB disease is ongoing. Of over 300 HHC reviewed to date with signs/symptoms, abnormal X-ray, 15 have confirmed TB, 43 probable, and 63 possible (all children).
- Challenges encountered included the logistics of travel and household visits, management of stigma concerns, TB microbiological investigation in children, and team safety, including occupational exposure risk.

CONCLUSIONS

- Identifying, recruiting, and characterizing adult MDR-TB index cases and their adult and child household contacts in settings with high burdens of TB and HIV is feasible.
- The majority of HHC of MDR-TB cases identified were at high risk of developing future TB.

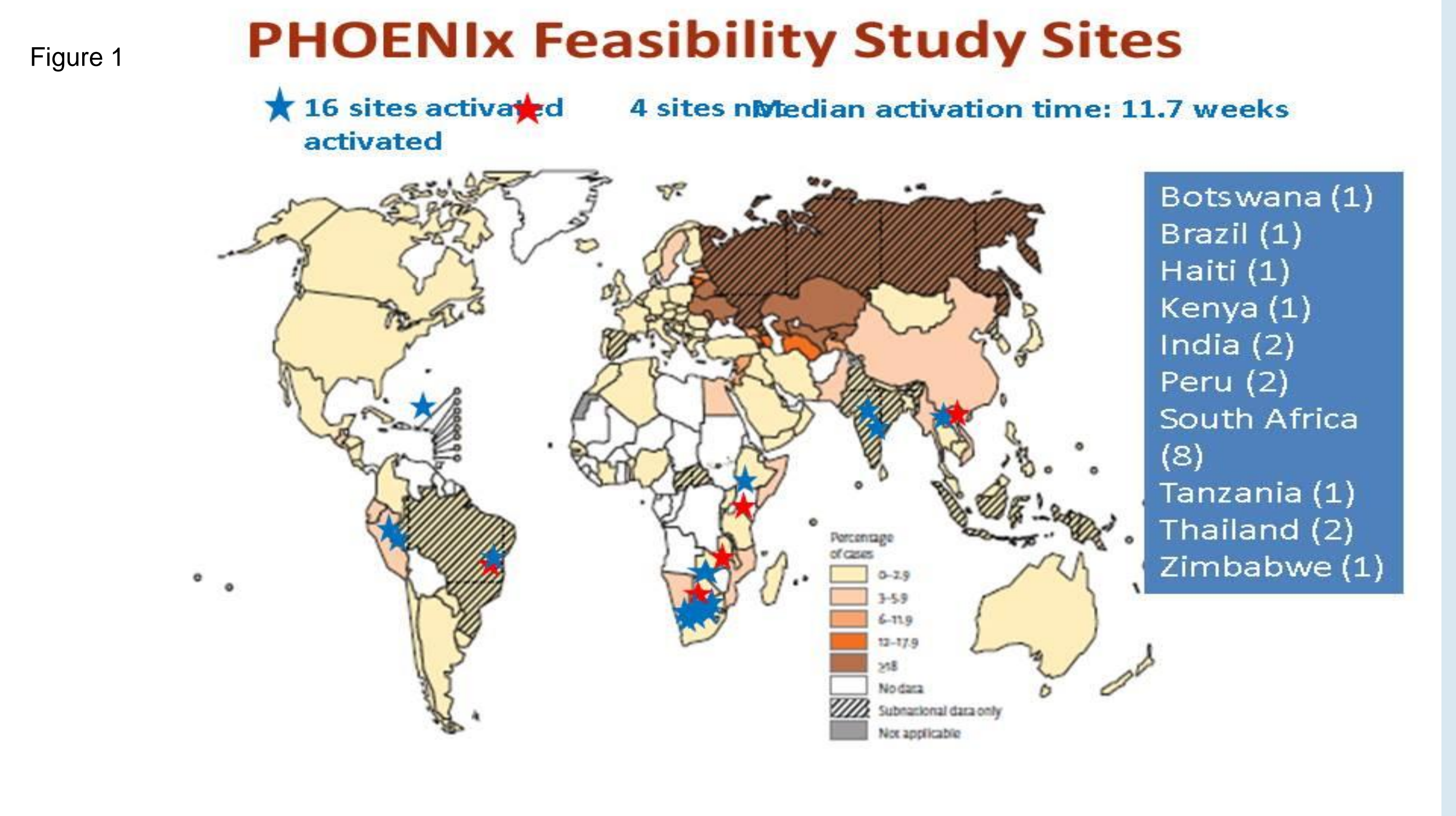


Table 1: MDR TB INDEX CASE CHARACTERISTICS

Characteristic	Index (N=308)
HIV-infected	112 (36%)
Diabetes	25 (8%)
Current or former smoking	133 (43%)
Previous TB	147 (48%)
Chest x-ray cavitation	201 (65%)
AFB smear positive (n=211)	148 (70%)
MDR TB treatment duration (median)	6.2 weeks

FIGURE 2: AGE DISTRIBUTION OF HOUSEHOLD CONTACTS

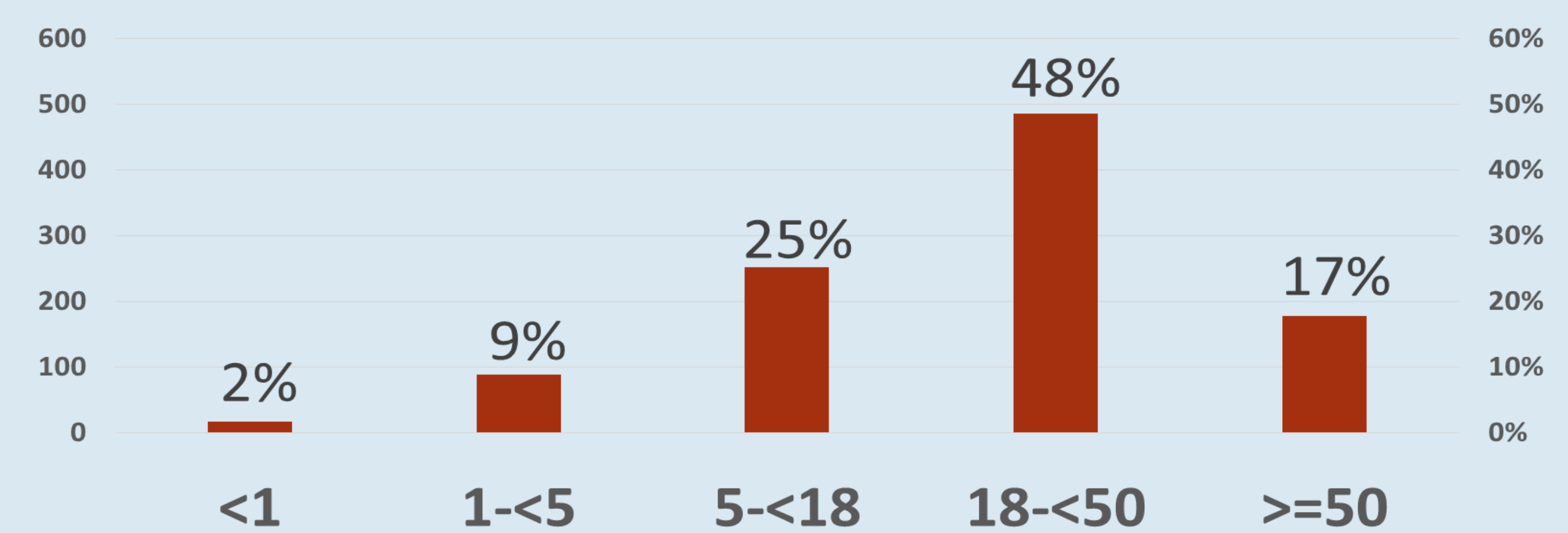


TABLE 2: TEST OF TB INFECTION

LTBI Testing	n (%)	LTBI	N (%)
No TST done*	300 (30%)	TST+ or IGRA+	708 (70%)
TST tested	705 (64%)	TST- and IGRA-	272 (27%)
TST+	392 (56%)	Unknown	27 (3%)
TST-	304 (43%)		
Tested but no result	9 (1%)		
No IGRA done	26 (3%)		
IGRA tested	973 (97%)		
IGRA+	629 (65%)		
IGRA-	330 (34%)		
Tested but no result	14 (1%)		

TABLE 3: POTENTIALLY ELIGIBLE HIGH RISK HHC

Characteristic	N (%)
Potentially eligible (n=1007)	776 (77%)
<5 years	102 (10%)
≥ 5 years and HIV+	64 (6%)
LTBI+ (TST or IGRA+)	610 (61%)
Median # of eligible contacts per household	2 (IQR 1–3)

We thank the participants of this trial and the other members of the study team.



Community based field worker performing physical exam, GHESKIO Haiti



CRF completion and IGRA blood collection urban slum catchment of BJMC, India



Obtaining Sputum Samples from Contacts at DTTC, Cape Town