Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

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# Supplementary Figures and Tables

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| Table S1 - Search terms |
|-------------------------|
| **Pubmed**              |
| #1.                     |
| "HIV Infections" [MeSH] OR "HIV"[MeSH] OR "hiv"[tw] OR hiv infect*[tw] OR "human immunodeficiency virus"[tw] OR "human immunodeficiency virus"[tw] OR "human immuno-deficiency virus"[tw] OR "human immune-deficiency virus"[tw] OR ((human immun*) AND ("deficiency virus"[tw])) OR "acquired immunodeficiency syndrome"[tw] OR "acquired immunodeficiency syndrome"[tw] OR "acquired immune-deficiency syndrome"[tw] OR ((acquired immun*) AND ("deficiency syndrome"[tw])) |
| #2. "Tuberculosis"[Mesh] OR tuberculosis [TW] OR "Mycobacterium tuberculosis"[Mesh] OR TB [Ti] |
| #3. Screening* OR algorithm* OR "case finding"[TIAB] OR "case findings"[TIAB] OR sensitivit* OR specificit* OR predictor* OR "Sensitivity and Specificity"[MeSH Terms] OR "Tuberculosis/diagnosis"[Mesh] OR "Mass Screening"[Mesh:NoExp] |
| #4. ("animals"[MeSH Terms] NOT ("humans"[MeSH Terms] AND "animals"[MeSH Terms])) OR case reports[Publication Type] |
| #5 #1 AND #2 AND #3 NOT #4 |
| Limit: publication date from 2011/01/01 |
| **Embase**              |
| #1. "human immunodeficiency virus infection'/exp OR 'human immunodeficiency virus'/exp OR 'hiv':ti,ab OR 'human immunodeficiency virus':ti,ab OR 'human immuno-deficiency virus':ti,ab OR 'human immune-deficiency virus':ti,ab OR 'acquired immune-deficiency syndrome':ti,ab OR 'acquired immunodeficiency syndrome':ti,ab OR 'acquired immunodeficiency syndrome':ti,ab |
| #2. 'tuberculosis'/exp OR 'tuberculosis':ab,ti OR 'TB':ti OR 'Mycobacterium tuberculosis'/exp |
| #3. 'screening':ti,ab OR 'screening':ti,ab OR 'algorithm':ti,ab OR 'case finding':ti,ab OR 'case findings':ti,ab OR sensitivit*:ti,ab OR specificit*:ti,ab OR predictor*:ti,ab OR 'sensitivity and specificity'/exp OR 'case finding'/exp OR 'Mass Screening'/exp OR 'screening'/exp |
| #4. ("animals"/lim NOT [humans]/lim) |
| #5 #1 AND #2 AND #3 NOT #4 AND [2011-]/py |
| **Cochrane**            |
| #1. "HIV Infections" [MeSH] OR "HIV"[MeSH] OR hiv OR hiv infect* OR "human immunodeficiency virus" OR "human immunodeficiency virus" OR "human immuno-deficiency virus" OR "human immune-deficiency virus" OR ((human immun*) AND ("deficiency virus")) OR "acquired immunodeficiency syndrome" OR "acquired immunodeficiency syndrome" OR "acquired immune-deficiency syndrome" OR ((acquired immun*) AND ("deficiency syndrome")) |
| #2. "Tuberculosis"[Mesh] OR tuberculosis OR "Mycobacterium tuberculosis"[Mesh] |
| #3. Screening* OR algorithm* OR "case finding" OR "case findings" OR sensitivit* OR specificit* OR predictor* OR "Sensitivity and Specificity"[MeSH Terms] OR "Tuberculosis/diagnosis"[Mesh] OR "Mass Screening"[Mesh:NoExp] |
| #4. ("animals"[MeSH Terms] NOT ("humans"[MeSH Terms] AND "animals"[MeSH Terms])) OR case reports[Mesh] |
| #5 #1 AND #2 AND #3 NOT #4 |
| Limit: publication year from 2011- |
| Variable                        | Description                                                                                                                                                                                                 |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| country                        | country where the study took place, or if multisite, country individual patient was recruited from                                                                                                          |
| clinical setting               | from {inpatient, outpatient, other, NA}                                                                                                                                                                      |
| age                            | patient’s age in years                                                                                                                                                                                      |
| sex                            | patient’s sex {female, male, NA}                                                                                                                                                                             |
| hiv status                     | from {positive, negative, NA}                                                                                                                                                                               |
| art status                     | from {on art, not on art, NA}                                                                                                                                                                               |
| history of tuberculosis        | from {history of tuberculosis, no history of tuberculosis, NA}                                                                                                                                               |
| current smoking status         | from {currently smoking, not currently smoking, NA}                                                                                                                                                         |
| pregnancy status               | from {pregnant, not pregnant, NA}                                                                                                                                                                           |
| tuberculosis treatment status  | from {currently on tuberculosis treatment, not currently on tuberculosis treatment, NA}                                                                                                                     |
| current ipt status             | from {yes, no, NA}                                                                                                                                                                                          |
| current cough                  | from {yes, no, NA}                                                                                                                                                                                          |
| cough (more than 2 weeks)      | from {yes, no, NA}                                                                                                                                                                                          |
| fever                          | from {yes, no, NA}                                                                                                                                                                                          |
| weight loss                    | from {yes, no, NA}                                                                                                                                                                                          |
| night sweats                   | from {yes, no, NA}                                                                                                                                                                                          |
| w4ss                           | number of w4ss symptoms {0, 1, 2, 3, 4, NA}                                                                                                                                                                 |
| body mass index                | numerical value (weight/height^2)                                                                                                                                                                            |
| lymphadenopathy                | from {yes, no, NA}                                                                                                                                                                                          |
| cd4 count                      | numerical value (in cells/µL)                                                                                                                                                                                |
| c-reactive protein level       | numerical value (in mg/L)                                                                                                                                                                                    |
| haemoglobin                    | numerical value (in g/dl)                                                                                                                                                                                    |
| chest x-ray suggestive of tuberculosis | from {yes, no, NA}                                                                                                                                                        |
| chest x-ray abnormal           | from {yes, no, NA}                                                                                                                                                                                          |
| sputum xpert result            | {positive, negative, NA}, indeterminate = negative                                                                                                                                                           |
| sputum xpert ultra result      | {positive, negative, NA}, indeterminate = negative                                                                                                                                                         |
| sputum culture result          | {positive, negative, NA}, contaminated culture = negative                                                                                                                                                   |
| non-sputum xpert result        | {positive, negative, NA}, indeterminate = negative                                                                                                                                                         |
| non-sputum xpert ultra result  | {positive, negative, NA}, indeterminate = negative                                                                                                                                                         |
| non-sputum culture result      | {positive, negative, NA}, contaminated culture = negative                                                                                                                                                   |

Definition of abbreviations: ART = antiretroviral therapy, IPT = Isoniazid preventive therapy, W4SS = WHO four-symptom screen
| Author, year | Country       | Study period | Study population | Study setting | Exclusion criteria | Sputum culture | Sputum Xpert | Non-sputum culture/Xpert | Liquid or solid culture |
|--------------|---------------|--------------|------------------|---------------|-------------------|----------------|--------------|--------------------------|------------------------|
| Abed Al-Darraji, 2013 | Malaysia      | 2012-2012    | PLHIV who are inmates | 1 prison in Malaysia | Receiving ATT, anticipated release within 24 hours | 2 spot samples | 1 morning sample | No | Liquid |
| Affolabi, 2018 | Multi-country* | 2015-2018    | PLHIV of any age | 3 HIV clinics | On ATT for TB | 1 spot and 1 early morning samples | 1 spot and 1 early morning samples | No | Solid |
| Ahmad, 2014 | South Africa  | 2011-2012    | PLHIV aged ≥18 years | 2 HIV clinics | On ATT currently or awaiting results of TB investigations | 1 morning sample | No | No | Liquid |
| Balcha, 2014 | Ethiopia      | 2011-2013    | ART-naive PLHIV aged ≥18 years with WHO stage 4 or CD4 cell count <350 per μL | 5 public health centers | Unable to submit ≥ 1 pair of sputum samples, previous ART, ATT >2 weeks | 1 morning sample | 1 morning sample | FNA sample of LN >1cm for culture and Xpert | Liquid |
| Bjerrum, 2015 | Ghana         | 2013-2014    | ART-naive PLHIV aged ≥18 years with WHO stage 3/4 or CD4 cell count ≤350 per μL or pregnant | 1 public hospital (out- and inpatient departments) | On ATT > 2 days <3 months before or unable to produce sputum or urine samples | 1 spot and 1 early morning samples | 1 or 2 samples | No | Both |
| Gersh, 2018 | Kenya         | 2017-2018    | PLHIV aged ≥18 and ≤70 years | 2 HIV clinics | Currently on treatment for TB or LTBI, pregnant, incarcerated | 1 spot sample, induced or early morning if necessary | 1 spot sample, induced or early morning if necessary | No | Liquid |
| Hanifa, 2012 | South Africa  | 2007-2008    | ART-naive PLHIV aged >17 years with WHO stage 4 or CD4 cell count ≤200 per μL | 1 public HIV clinic | On ATT currently or <3 months before | 2 spot samples | No | No | Liquid |
| Heidebrecht, 2016 | South Africa | 2013-2013    | Inpatient PLHIV admitted to medical wards | 1 hospital (5 medical wards) | ≥3 doses of ATT | 1 spot sample | 1 spot sample | No | Both |
| Hoffman, 2013 | South Africa  | 2010-2011    | Pregnant PLHIV aged ≥18 years | 16 PHC centre prenatal clinics and 1 regional hospital | - | 1 spot sample | No | No | Liquid |
| Kempker, 2019 | Georgia       | 2014-2015    | Newly diagnosed ART-naive PLHIV aged ≥18 years | 1 national reference center for HIV diagnosis and treatment | ATT <90 days before | 1 spot and 1 early morning samples | 1 spot and 1 early morning samples for 1 test | No | Solid |
| Kerkhoff, 2013 | South Africa  | 2010-2011    | ART-naive PLHIV aged ≥18 years | 1 community-based ART clinic | No current TB diagnosis | 2 spot samples with ≥ 1 induced | 2 spot samples with ≥ 1 induced | No | Liquid |
| Kufa, 2012 | South Africa  | 2009-2010    | PLHIV aged ≥18 years | 1 HIV clinic in PHC centre | On TB treatment, completed TB treatment <3 months before, dialysis, prisoners | 2 spot samples, induced if necessary | No | Blood culture | Liquid |
| LaCourse, 2016 | Kenya         | 2013-2014    | Pregnant PLHIV aged ≥16 years | 2 antenatal care clinics | On ATT for TB or LTBI, or were treated for TB or LTBI <1 year before | 1 spot and 1 early morning samples | 1 spot sample, on 2nd sample if no spot sample or if 2nd sample culture positive for TB | No | Liquid |
| Mbu, 2018 | Cameroon      | 2012-2013    | ART-naive PLHIV aged ≥18 years | 1 regional hospital (HIV testing and ART treatment center) | First diagnosis of HIV <1 month before, currently on ATT | 1 spot and 1 early morning samples | No | No | Both |
| Modi, 2016 | Kenya         | 2011-2012    | ART-naive PLHIV aged ≥7 years | 15 public HIV care and treatment clinics | Receipt of any HIV-related care <2 years before, ATT <1 year before | 1 spot and 1 early morning samples | 1 spot and 1 early morning samples | No | Liquid |
| Author, year | Country | Study period | Study population | Study setting | Exclusion criteria | Sputum culture | Sputum Xpert | Non-sputum culture/Xpert | Liquid or solid culture |
|--------------|---------|--------------|------------------|---------------|-------------------|----------------|--------------|--------------------------|------------------------|
| Nguyen, 2016<sup>16</sup> | Vietnam | 2009-2010 | PLHIV aged ≥15 years | 1 outpatient urban HIV clinic | Screened for TB in past month, received TB treatment <1 year before | 1 spot and 1 early morning samples | No | No | Solid |
| Rangaka, 2012<sup>17</sup> | South Africa | 2007-2009 | PLHIV aged ≥18 years | 1 HIV clinic | - | 1 spot sample, induced if necessary | No | No | Both |
| Reeve, 2019<sup>18</sup> | South Africa | 2017-2020 | ART-naive PLHIV aged ≥18 years | 1 outpatient clinic | On ATT <60 days before or has unknown treatment status | 2 spot samples, majority induced | 1 spot sample and Xpert Ultra on 1 spot sample | Urine Xpert Ultra | Liquid |
| Shapiro, 2018<sup>19</sup> | South Africa | 2014-2015 | ART-naive PLHIV aged ≥18 years | 1 urban HIV clinic | - | 2 samples, induced if necessary | No | No | Liquid |
| Swindells, 2013<sup>20</sup> | Multi-country** | 2010-2010 | ART-naive PLHIV aged ≥13 years | 11 outpatient clinics | ART or diagnosis of TB <90 days before and current or recent receipt of ATT | 3 spot samples, induced if necessary | No | No | Both |
| Thit, 2017<sup>21</sup> | Myanmar | 2015-2015 | Inpatient or outpatient PLHIV | 1 tertiary referral hospital | - | 1 spot sample | 1 spot sample | No | Solid |
| Yoon, 2018<sup>22</sup> | Uganda | 2013-2016 | ART-naive PLHIV aged ≥18 years with CD4 cell count ≤350 per μL | 2 HIV clinics in Kampala | Diagnosis of active tuberculosis, taking ATT (anti-TB or TB preventive therapy, fluoroquinolones) ≤3 days before | 2 spot samples, 2nd induced if necessary | 1 spot sample, induced if necessary | No | Both |

*Benin, Guinea, and Senegal
**Botswana, Malawi, South Africa, Zimbabwe, India, Brazil and Peru

Definition of abbreviations: ART = antiretroviral therapy, ATT = anti-tuberculosis treatment, FNA = fine needle aspiration, LN = Lymph node, LTBI = latent tuberculosis infection, PHC = primary health care, PLHIV = people living with HIV, TB = tuberculosis
### Table S4 - Percentage of missing data for each variable by study†§

| Variable                  | Affolater | Ahmad | Al Darraj | Balcha | Bjerrum | Gersh | Hanifa | Hoffmann | Kemper | Kerkhoff | Kufa | La Cour se | Mbu | Modi | Nguyen | Rangaka | Reeve | Shapiro | Swindevalls | Thits | Yoon |
|---------------------------|-----------|-------|-----------|--------|---------|-------|--------|----------|--------|----------|------|------------|-----|------|--------|---------|-------|---------|-------------|-------|------|
| Clinical setting          | 0         | 0     | 0         | 0      | 0       | 0     | 0      | 0        | 0      | 0        | 0    | 0          | 0   | 0    | 0      | 0       | 0     | 0       | 0           | 0     | 0    |
| Age                       | 0         | 0     | 0         | 0      | 0       | 0     | 0      | 0        | 0      | 0        | 0    | 0          | 0   | 0    | 0      | 0       | 0     | 0       | 0           | 0     | 0    |
| Sex                       | 0         | 0     | 0         | 0      | 0       | 0     | 0      | 0        | 0      | 0        | 0    | 0          | 0   | 0    | 0      | 0       | 0     | 0       | 0           | 0     | 0    |
| ART status                | 0         | 0     | 0         | 0      | 0       | 0     | 0      | 0        | 0      | 0        | 0    | 0          | 0   | 0    | 0      | 0       | 0     | 0       | 0           | 0     | 0    |
| History of tuberculosis   | 100       | 0     | 0         | 1      | 1       | 1     | 0      | 0        | 0      | 6        | 100  | 0          | 0   | 0    | 0      | 0       | 0     | 0       | 0           | 0     | 0    |
| Currently smoking         | 0         | 100   | 0         | 0      | 24      | 0     | 0      | 0        | 0      | 100      | 100  | 100        | 100 | 100 | 0      | 0       | 100   | 0       | 8           | 0     | 0    |
| Pregnancy*                | 100       | 100   | 100       | 0      | 100     | 100   | 100    | 100      | 100    | 100      | 100  | 100        | 100 | 100 | 100    | 100     | 100   | 100      | 0           | 100   | 0    |
| Currently on IPT          | 1         | 0     | 100       | 0      | 100     | 0     | 100    | 100      | 100    | 100      | 100  | 100        | 100 | 100 | 100    | 100     | 100   | 100      | 0           | 100   | 0    |
| W4SS**                    | 0         | 0     | 0         | 0      | 0       | 0     | 0      | 0        | 0      | 0        | 0    | 2          | 0   | 0    | 0      | 0       | 0     | 0       | 0           | 0     | 0    |
| Cough                     | 0         | 0     | 0         | 0      | 0       | 0     | 0      | 0        | 0      | 0        | 0    | 0          | 5   | 0    | 0      | 0       | 0     | 0       | 0           | 0     | 0    |
| Fever                     | 0         | 0     | 0         | 0      | 0       | 0     | 2      | 0        | 0      | 0        | 0    | 4          | 0   | 0    | 0      | 0       | 0     | 0       | 0           | 0     | 0    |
| Weight loss               | 0         | 0     | 0         | 0      | 0       | 0     | 0      | 0        | 0      | 0        | 0    | 3          | 0   | 0    | 0      | 0       | 4     | 0       | 0           | 0     | 0    |
| Night sweats              | 0         | 0     | 0         | 0      | 0       | 0     | 0      | 0        | 0      | 0        | 0    | 4          | 0   | 0    | 0      | 0       | 0     | 0       | 0           | 0     | 0    |
| Cough >=2 weeks           | 100       | 100   | 100       | 0      | 100     | 0     | 100    | 0        | 100    | 0        | 100  | 100        | 100 | 100 | 100    | 100     | 100   | 100      | 0           | 100   | 0    |
| Body mass index           | 1         | 6     | 0         | 1      | 1       | 1     | 1      | 100      | 2      | 100      | 13   | 100        | 0   | 0    | 0      | 1       | 0     | 0       | 0           | 0     | 0    |
| Lymphadenopathy           | 100       | 100   | 100       | 0      | 100     | 100   | 100    | 100      | 100    | 100      | 100  | 100        | 100 | 100 | 100    | 100     | 100   | 100      | 0           | 100   | 0    |
| CD4 cell count            | 3         | 0     | 0         | 1      | 2       | 18    | 1      | 2        | 0      | 0        | 17   | 0          | 7   | 0    | 0      | 10      | 3     | 0       | 0           | 0     | 0    |
| CRP                       | 100       | 100   | 100       | 100    | 100     | 100   | 100    | 100      | 100    | 100      | 100  | 100        | 8   | 0    | 100    | 100     | 100   | 0       | 21          | 100   | 0    |
| Hb                        | 100       | 100   | 100       | 6      | 9       | 5     | 1      | 8        | 100    | 6        | 0    | 100        | 100 | 100 | 100    | 100     | 100   | 100      | 0           | 210   | 0    |
| CXR (any abnormality)     | 3         | 3     | 100       | 100    | 100     | 100   | 100    | 100      | 100    | 9        | 7    | 100        | 23  | 100 | 100    | 100     | 100   | 100      | 4           | 7     | 100 |
| CXR (suggests tuberculosis) | 3    | 3     | 100       | 100    | 100     | 100   | 100    | 100      | 100    | 9        | 8    | 100        | 23  | 0    | 100    | 100     | 100   | 100      | 4           | 100   | 100 |
| Total Xpert***            | 1         | 100   | 0         | 1      | 65      | 1     | 100    | 100      | 1      | 0        | 100  | 100      | 0   | 100 | 100    | 100     | 6     | 100      | 0           | 100   | 0    |
| Total culture             | 1         | 0     | 0         | 0      | 0       | 0     | 0      | 0        | 0      | 1        | 0    | 0          | 0   | 0    | 0      | 0       | 0     | 0       | 0           | 0     | 0    |
| Total (culture+Xpert)      | 0         | 0     | 0         | 0      | 0       | 0     | 0      | 0        | 0      | 0        | 0    | 0          | 0   | 0    | 0      | 0       | 0     | 0       | 0           | 0     | 0    |

†<5% missing (green), 5-95% missing (yellow), and >95% missing (red)
§Some datasets received in which some participants with missing data were already excluded
*Pregnancy could be ascertained by testing or interview; missing percentages based on available data for females in the study
**Regarded as missing only if a subject had all four symptoms missing
***Study by Bjerrum et al has a high missing value because Xpert only became available after study enrollment began

Definition of abbreviations: ART = antiretroviral therapy, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, IPT = Isoniazid preventive therapy, W4SS = WHO four-symptom screen
Table S5 - Summary of main characteristics for participants overall and by each study

| Variable                  | All         | Ahmad       | Al Darraj   | Balcha      | Bjerrum     | Gersh       | Hanifa      | Hoffmann    | Kemper      | Kerkhoff     | Kufa        |
|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|
| Participants              | 15666 (100) | 611 (3.9)   | 125 (0.8)   | 812 (5.2)   | 395 (2.5)   | 387 (2.5)   | 351 (2.2)   | 1404 (9)    | 103 (0.7)   | 523 (3.3)    | 415 (2.6)   |
| **Clinical setting**      |             |             |             |             |             |             |             |             |             |              |             |
| Outpatient                | 15541 (99.2)| 611 (100)   | 0 (0)       | 812 (100)   | 395 (100)   | 387 (100)   | 351 (100)   | 1404 (100)  | 103 (100)   | 523 (100)    | 415 (100)   |
| Other setting*            | 125 (0.8)   | 0 (0)       | 125 (100)   | 0 (0)       | 0 (0)       | 0 (0)       | 0 (0)       | 0 (0)       | 0 (0)       | 0 (0)        | 0 (0)       |
| N                         | 15666       | 611         | 125         | 812         | 395         | 387         | 351         | 1404        | 103         | 523          | 415         |
| Age (years)               | 34 (28-42)  | 37 (31-45)  | 37 (33-42)  | 32 (28-40)  | 38 (31-45)  | 37 (31-45)  | 38 (32-46)  | 27 (23-32)  | 42 (35-49)  | 34 (28-41)   | 37 (31-44)  |
| Female                    | 10388 (66.3)| 461 (75.5)  | 12 (9.6)    | 476 (58.6)  | 264 (66.8)  | 225 (58.1)  | 232 (66.1)  | 1404        | 103         | 523          | 415         |
| On ART                    | 15666       | 611         | 125         | 812         | 395         | 387         | 351         | 1404        | 103         | 523          | 415         |
| History of tuberculosis  | 1955 (17.5) | 235 (38.5)  | 36 (28.8)   | 51 (6.4)    | 23 (5.9)    | 58 (15.1)   | 99 (28.2)   | 110 (7.9)   | 3 (2.9)     | 141 (27.0)   | 109 (26.3)  |
| Current Smoker            | 1191 (11.6) | -           | 117 (93.6)  | 35 (4.3)    | 11 (3.7)    | 11 (2.8)    | 40 (11.4)   | 40 (2.6)    | 64 (62.1)   | 122 (23.4)   | -           |
| Pregnant                  | 1938 (35.1) | -           | -           | 24 (6.1)    | 0 (0.0)     | -           | 1404        | 103         | 523          | 415         |
| On IPT                    | 41 (0.5)    | 3 (0.5)     | -           | 19 (2.3)    | -           | 0 (0.0)     | -           | -           | -           | -            | -           |
| N                         | 7593        | 609         | 810         | 387         | -           |             |             |             | -           | -            |             |
| WASS                      | 8028 (51.3) | 331 (54.2)  | 85 (68.0)   | 651 (80.2)  | 359 (91.1)  | 47 (12.1)   | 331 (94.3)  | 227 (16.2)  | 62 (60.2)   | 462 (86.4)   | 355 (85.5)  |
| Cough                     | 4629 (29.6) | 223 (36.5)  | 62 (49.6)   | 326 (40.2)  | 172 (43.7)  | 36 (9.3)    | 161 (45.9)  | 110 (7.8)   | 29 (28.2)   | 260 (49.7)   | 201 (48.4)  |
| Fever                     | 3391 (21.7) | 57 (9.3)    | 37 (29.6)   | 389 (48.0)  | 189 (48.6)  | 5 (1.3)     | 100 (28.5)  | 52 (3.7)    | 55 (53.4)   | 152 (29.1)   | 163 (39.3)  |
| Weight loss               | 5575 (35.7) | 170 (27.8)  | 19 (15.2)   | 514 (63.6)  | 323 (82.2)  | 9 (2.3)     | 316 (90.3)  | 103 (7.3)   | 43 (41.7)   | 355 (68.0)   | 254 (61.2)  |
| Night sleeps              | 3270 (20.9) | 144 (23.6)  | 30 (24.0)   | 396 (48.8)  | 131 (33.5)  | 18 (4.7)    | 147 (41.9)  | 49 (3.5)    | 26 (25.2)   | 210 (40.2)   | 190 (45.8)  |
| Cough >= 2 weeks          | 15630       | 144 (23.6)  | 30 (24.0)   | 396 (48.8)  | 131 (33.5)  | 18 (4.7)    | 147 (41.9)  | 49 (3.5)    | 26 (25.2)   | 210 (40.2)   | 190 (45.8)  |
| Lymphadenopathy           | 374 (15.6)  | -           | -           | 28 (3.5)    | 76 (19.2)   | -           | -           | -           | -           | -            |             |
| CXR (suggests tuberculosis) | 1296 (21.0) | 265 (44.8)  | -           | -           | -           | 177 (50.9)  | -           | -           | 196 (41.3)  | 72 (18.8)    |             |
| CXR (any abnormality)     | 2158 (34.7) | 354 (59.9)  | -           | -           | -           | 222 (63.8)  | -           | -           | 239 (50.1)  | 145 (37.8)   |             |
| Total Xpert positive**    | 616 (7.1)   | 8 (6.4)     | 96 (11.9)   | 21 (15.1)   | 4 (1.0)     | -           | -           | 12 (11.8)   | 70 (13.4)   | -            |             |
| N                         | 8625        | 125         | 804         | 139         | 384         | 102         | 523         | -           | -           | -            |             |
| Variable                              | Ali   | Ahmad | Al Darraji | Balcha | Bjerrum | Gersh  | Hanifa | Hoffmann | Kemper | Kerkhoff | Kufa  |
|---------------------------------------|-------|-------|------------|--------|---------|--------|--------|----------|--------|----------|-------|
| Total culture positive***             | 1347 (8.6) | 57 (9.3) | 15 (12.0) | 124 (15.3) | 37 (9.4) | 5 (1.3) | 64 (18.2) | 35 (2.5) | 12 (11.8) | 89 (17.0) | 24 (5.8) |
| N                                     | 15611 | 611   | 125        | 809    | 395     | 387    | 351    | 1404     | 102    | 522      | 415   |
| Total Xpert & culture positive        | 1453 (9.3) | 57 (9.3) | 15 (12.0) | 137 (16.9) | 40 (10.1) | 8 (2.1) | 64 (18.2) | 35 (2.5) | 15 (14.6) | 95 (18.2) | 24 (5.8) |
| N                                     | 15666 | 611   | 125        | 812    | 395     | 387    | 351    | 1404     | 103    | 523      | 415   |
| BMI (kg/m²)                           | 22 (19-26) | 24 (21-28) | 22 (21-25) | 19 (17-21) | 20 (18-23) | 22 (20-25) | 20 (18-24) | 22 (21-24) | 23 (21-27) | 24 (21-28) |
| N                                     | 12704 | 575   | 125        | 801    | 390     | 383    | 349    | 101      | 522    | 403      |
| CRP (mg/L)                            | 4 (2-21) | -     | -          | -      | 1 (1-4) | -      | -      | 10 (2-32) | -      | -        |
| N                                     | 3582  | -     | -          | -      | 385     | -      | -      | 502      | -      | -        |
| CRP (>=10 mg/L)                       | 1259 (35.1) | -     | -          | -      | 39 (10.1) | -      | -      | 251 (50.0) | -      | -        |
| N                                     | 3582  | -     | -          | -      | 385     | -      | -      | 502      | -      | -        |
| Hb (g/dL)                             | 12 (10-13) | -     | -          | 12 (10-13) | 10 (9-11) | 13 (11-14) | 11 (10-13) | 11 (10-12) | -      | 12 (11-13) | 12 (11-14) |
| N                                     | 5118  | -     | -          | 762    | 360     | 366    | 348    | 1287     | -      | 490      | 415   |
| Hb (<10 g/dL)                         | 1093 (21.4) | -     | -          | 165 (21.7) | 184 (51.1) | 53 (14.5) | 91 (26.1) | 204 (15.9) | -      | 86 (17.6) | 64 (15.4) |
| N                                     | 5118  | 762   | 360        | 366    | 348     | 1287   | -      | 490      | 415    |

†Data are median (25th-75th percentiles) or count (%)

*One study among a prison population

**Sputum and/or non-sputum Xpert result

***Sputum and/or non-sputum culture result

Definition of abbreviations: ART = antiretroviral therapy, BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, IPT = Isoniazid preventive therapy, W4SS = WHO four-symptom screen.
| Variable                             | LaCourse | Mbu | Affolabi | Modi | Nguyen | Rangaka | Reeve | Shapiro | Swindells | Thit | Yoon |
|--------------------------------------|----------|-----|----------|------|--------|---------|-------|---------|-----------|------|------|
| Participants                        | 292 (1.9)| 940 (6) | 2805 (17.9) | 731 (4.7) | 397 (2.5) | 1429 (9.1) | 807 (5.2) | 425 (2.7) | 726 (4.6) | 463 (3) | 1525 (9.7) |
| Clinical setting                     |          |     |          |      |        |         |       |         |           |      |      |
| Outpatient                           | 292 (100)| 940 (100) | 2805 (100) | 731 (100) | 397 (100) | 1429 (100) | 807 (100) | 425 (100) | 726 (100) | 463 (100) | 1525 (100) |
| Other setting*                       | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) | 0 (0) |
| N                                    | 292      | 940 | 2805     | 731    | 397    | 1429    | 807    | 425     | 726    | 463 | 1525 |
| Age (years)                          | 25 (22-30) | 36 (28-42) | 30 (24-39) | 30 (27-34) | 34 (30-40) | 32 (26-39) | 32 (27-39) | 33 (28-39) | 34 (30-40) | 33 (27-40) |
| Female                               | 292 (100.0) | 641 (68.2) | 1878 (67.0) | 481 (65.8) | 113 (28.5) | 1053 (73.7) | 478 (59.2) | 248 (58.4) | 458 (63.1) | 231 (49.9) | 806 (52.9) |
| N                                    | 292      | 940 | 2805     | 731    | 397    | 1429    | 807    | 425     | 726    | 463 | 1525 |
| On ART                               | 159 (54.5) | 0 (0.0) | 1808 (64.5) | 0 (0.0) | 230 (57.9) | 775 (54.2) | 0 (0.0) | 0 (0.0) | 338 (73.0) | 0 (0.0) |      |
| CD4 count (cells/µL)                 | 437 (345-560) | 291 (116-496) | 376 (197-551) | 342 (168-512) | 209 (145-331) | 306 (174-489) | 290 (167-468) | 273 (167-435) | 286 (145-466) | 160 (70-265) |
| History of tuberculosis             | 25 (9.1) | - | - | 178 (44.8) | 552 (38.6) | 115 (14.3) | 19 (4.5) | 53 (7.3) | 94 (20.3) | 54 (3.5) |      |
| N                                    | 274      |     |         | 397    | 1429    | 806     | 425    | 726     | 463    | 1524 |
| Current Smoker                       | -        | -      | 102 (3.6) | -      | 42 (10.7) | -      | 295 (36.6) | 105 (24.8) | -      | 137 (29.7) | 70 (5.0) |
| N                                    | 2805     | 393   | 807    | 424    |       |         |       |         |       | 462 | 1407 |
| Pregnant                             | 292 (100.0) | - | - | 134 (29.1) | 0 (0.0) | -      | -      | 10 (1.4) | -      | 43 (5.3) |      |
| On IPT                               | 0 (0.0) | -      | 7 (0.3) | -      | -      | -      | -      | -      | 0 (0.0) | 12 (2.6) | 0 (0.0) |
| WASS                                 | 57 (19.5) | 812 (86.4) | 780 (27.8) | 366 (50.9) | 147 (37.0) | 206 (14.4) | 442 (54.8) | 279 (65.6) | 481 (66.3) | 223 (48.2) | 1335 (87.5) |
| Cough                                | 44 (15.1) | 448 (47.7) | 567 (20.2) | 171 (24.6) | 105 (26.4) | 125 (8.7) | 249 (30.9) | 191 (44.9) | 311 (43.0) | 74 (16.0) | 764 (50.1) |
| Fever                                | 14 (4.8) | 220 (23.4) | 444 (15.8) | 236 (33.5) | 26 (6.5) | 9 (0.6) | 55 (6.8) | 129 (30.4) | 222 (30.7) | 61 (13.2) | 776 (50.9) |
| Weight loss                          | 3 (1.0) | 592 (63.0) | 395 (14.1) | 241 (34.0) | 79 (19.9) | 112 (7.8) | 334 (41.4) | 146 (34.4) | 265 (38.2) | 193 (41.7) | 1109 (72.7) |
| Night sweats                         | 20 (6.8) | 395 (42.0) | 140 (5.0) | 182 (26.0) | 11 (2.8) | 7 (5.0) | 191 (23.7) | 139 (32.7) | 210 (29.0) | 40 (8.6) | 530 (34.8) |
| Cough >= 2 weeks                     | 14 (4.8) | 228 (24.3) | - | 138 (19.7) | 105 (26.4) | 82 (5.7) | 166 (20.6) | 129 (30.5) | 229 (31.6) | - | 519 (34.0) |
| Lymphadenopathy                      | -        | -      | -      | -      | -      | -      | -      | -      | 238 (32.8) | 32 (6.9) | -      |
| CXR (suggests tuberculosis)         | -        | -      | 251 (9.2) | 99 (17.6) | 127 (32.0) | -      | -      | -      | 109 (15.6) | - | -      |
| CXR (any abnormality)               | -        | -      | 635 (23.3) | 248 (43.8) | -      | -      | -      | -      | 159 (22.8) | 156 (36.1) | -      |
| Total Xpert positive**              | 4 (1.4) | -      | 111 (4.0) | 61 (8.4) | -     | 61 (8.0) | - | 25 (5.4) | 143 (9.4) | - | -      |
| Total culture positive***           | 7 (2.4) | 131 (13.9) | 85 (3.1) | 75 (10.3) | 28 (7.1) | 126 (8.8) | 93 (11.7) | 42 (9.9) | 56 (7.7) | 10 (2.2) | 232 (15.2) |
| Variable                        | LaCourse | Mbu | Affolabi | Modi | Nguyen | Rangaka | Reeve | Shapiro | Swindells | Thit | Yoon |
|--------------------------------|----------|-----|----------|------|--------|---------|-------|---------|-----------|------|------|
| N                              | 292      | 940 | 2766     | 731  | 397    | 1429    | 796   | 425     | 726       | 463  | 1525 |
| Total Xpert & culture positive | 8 (2.7)  | 131 | 118 (4.2)| 82   | 28 (7.1)| 126 (8.8)| 100   | 42 (9.9)| 56 (7.7)  | 30   | 6.5  |
| N                              | 292      | 940 | 2805     | 731  | 397    | 1429    | 807   | 425     | 726       | 463  | 1525 |
| BMI (kg/m²)                    | 24 (22-26)| -   | 22 (19-25)| -   | 21 (19-22)| -       | 25 (22-29)| 24 (21-29) | 24 (21-29) | 22 (20-26) | 21 (19-23) | 21 (19-24) |
| N                              | 292      | -   | 2769     | 634  | -      | 1429    | 803   | 425     | 719       | 461  | 1523 |
| CRP (mg/L)                     | -        | -   | -        | -    | -      | 6 (2,28)| 4 (1-17)| -       | -         | 4 (2-23) | -    |
| N                              | -        | -   | -        | -    | -      | 745     | 425   | -       | -         | 1525 | -    |
| CRP (>=10 mg/L)                | -        | -   | -        | -    | -      | 303 (40,7) | 140 (32,9)| -       | -         | 526 (34,5) | - |
| N                              | -        | -   | -        | -    | -      | 745     | 425   | -       | -         | 1525 | -    |
| Hb (g/dL)                      | -        | -   | -        | -    | -      | -       | 12 (11-14)| 11 (9-12)| -        | -         | -    |
| N                              | -        | -   | -        | -    | -      | -       | 724   | 366     | -         | -         | -    |
| Hb (<10 g/dL)                  | -        | -   | -        | -    | -      | -       | -     | 113 (15,6)| 133 (36,3)| -        | -    |
| N                              | -        | -   | -        | -    | -      | -       | 724   | 366     | -         | -         | -    |

†Data are median (25th-75th percentiles) or Count (%)
*One study among a prison population
**Sputum and/or non-sputum Xpert result
***Sputum and/or non-sputum culture result

Definition of abbreviations: ART = antiretroviral therapy, BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, IPT = Isoniazid preventive therapy, W4SS = WHO four-symptom screen
| Subgroup§ | No studies | N   | No tuberculosis | Prevalence % (95% CI)† | I² (95% CI) | P-value | Egger’s test (p-value) | Subgroup analysis (p-value)†† |
|------------|------------|-----|----------------|-------------------------|------------|---------|-----------------------|-----------------------------|
| All        | 21         | 15,666 | 1,453           | 8.7 (6.7-11.3)          | 95 (94-96) | <0.0001 | 0.06                  | -                           |
| All (setting and ART status) | 21         | 15,663 | 1,453           | 8.7 (6.7-11.3)          | 95 (94-96) | <0.0001 | 0.06                  | -                           |
| Outpatients (on ART)* | 9         | 4,328   | 169             | 4.2 (3.1-5.6)           | 75 (52-87) | <0.0001 | 0.78                  | <0.0001                     |
| Outpatients (not on ART) | 20         | 11,210  | 1,269           | 10.2 (8.0-12.9)         | 92 (89-94) | <0.0001 | 0.06                  | -                           |
| Other setting** | 1          | 125     | 15              | 12.0 (7.4-19.0)         | - (-)      | -       | -                     | -                           |
| All (CD4 count) | 21         | 15,281  | 1,423           | 8.7 (6.7-11.2)          | 95 (93-96) | <0.0001 | 0.06                  | -                           |
| CD4 count <=200 cells/µL | 21         | 5,641   | 922             | 15.1 (12.8-17.7)        | 82 (73-88) | <0.0001 | 0.05                  | <0.0001                     |
| CD4 count >200 cells/µL | 21         | 9,640   | 501             | 5.5 (4.2-7.1)           | 88 (84-92) | <0.0001 | 0.42                  | -                           |
| All (pregnancy status)*** | 21         | 10,388  | 746             | 7.0 (5.3-9.2)           | 91 (88-94) | <0.0001 | 0.22                  | -                           |
| Pregnant   | 8          | 1,938   | 56              | 2.9 (2.2-3.7)           | 16 (0-59)  | <0.0001 | 0.09                  | <0.0001                     |
| Non-pregnant | 19         | 8,450   | 690             | 8.0 (6.2-10.3)          | 89 (85-92) | <0.0001 | 0.32                  | -                           |

§Subgroup in bold is the overall comparator. For example, all (setting and ART status) contains combined subgroups outpatients (on ART), outpatients (not on ART), and other setting

†Calculated using meta-analysis of proportions. We used a generalized linear mixed model with logit transformation in preference to protocol specified DerSimonian and Laird random effects model for proportions with variance stabilization by applying the Freeman-Tukey double arcsine transformation

††P-value of between subgroups heterogeneity statistic Q (based on random effects model)

*P(subgroup) compares outpatients (on ART) with outpatients (not on ART)

**One study among a prison population

***Pregnancy status unavailable for some studies, female participants in those studies categorized as non-pregnant

Definition of abbreviations: ART = antiretroviral therapy
| Test                                      | No studies | N   | Sensitivity (95% CI) | Specificity (95% CI) | Sensitivity (p-value) | Specificity (p-value) |
|-------------------------------------------|------------|-----|----------------------|----------------------|-----------------------|-----------------------|
| W4SS                                      | 9          | 4309| 53 (35-71)           | 71 (51-85)           | -                     | -                     |
| CRP (>=10 mg/L)                           | 1          | 381 | 20 (3-69)            | 90 (93-87)           | 0.296                 | 0.29                  |
| CRP (>=8 mg/L)                            | 1          | 381 | 40 (10-80)           | 89 (92-86)           | 0.689                 | 0.342                 |
| CRP (>=5 mg/L)                            | 1          | 381 | 40 (10-80)           | 80 (84-75)           | 0.699                 | 0.697                 |
| CXR (abnormal)                            | 4          | 2670| 73 (60-83)           | 63 (50-75)           | 0.142                 | 0.59                  |
| CXR (suggests tuberculosis)               | 4          | 2581| 70 (55-82)           | 76 (62-89)           | 0.188                 | 0.571                 |
| Cough (any)                               | 9          | 4309| 40 (24-58)           | 83 (73-90)           | 0.286                 | 0.206                 |
| Cough (>=2 weeks)                         | 6          | 1746| 19 (5-52)            | 93 (79-98)           | 0.054                 | 0.031                 |
| Hb (>10 g/dL)                             | 4          | 844 | 55 (34-75)           | 82 (70-91)           | 0.996                 | 0.315                 |
| Hb (>8 g/dL)                              | 4          | 844 | 18 (5-49)            | 94 (91-96)           | 0.057                 | 0.013                 |
| BMI (<18.5 kg/m²)                         | 7          | 4036| 16 (8-30)            | 93 (88-96)           | 0.004                 | 0.007                 |
| Lymphadenopathy                           | 1          | 338 | 22 (6-58)            | 93 (95-89)           | 0.278                 | 0.204                 |
| W4SS with CRP (>=10 mg/L)¶               | 1          | 381 | 20 (3-69)            | 80 (83-75)           | 0.296                 | 0.706                 |
| W4SS with CXR (abnormal)¶                | 4          | 2670| 89 (70-97)           | 33 (17-54)           | 0.014                 | 0.036                 |
| W4SS then CRP (>=5 mg/L)¶                | 1          | 381 | 8 (1-62)             | 96 (97-93)           | 0.04                  | 0.09                  |
| W4SS then Xpert*                         | 4          | 2645| 37 (25-52)           | 100 (96-100)         | -                     | -                     |
| Xpert alone*                              | 4          | 2645| 53 (22-83)           | 99 (97-99)           | 0.219                 | 0.306                 |

†Using culture as a reference standard. Indirect comparisons are based on all studies that evaluated at least one of the W4SS or relevant screening tests
††For Xpert alone, the comparator is W4SS then Xpert
¶For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive
*Accuracy measures for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result). Alternative algorithms are W4SS then single sputum Xpert (4 studies; 2645 participants; sensitivity 37 (25-52), specificity 100 (96-100) and single sputum Xpert alone (4 studies; 2645 participants; sensitivity 53 (22-83), specificity 99 (97-99).

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
Table S7B - Indirect comparisons between each test and WHO four-symptom screen for the detection of tuberculosis in outpatients (not on ART)

| Test                                | No studies | N   | Sensitivity (95% CI) | Specificity (95% CI) | Sensitivity (p-value) | Specificity (p-value) |
|-------------------------------------|------------|-----|----------------------|----------------------|-----------------------|-----------------------|
| W4SS                                | 20         | 11160 | 85 (76-91)           | 37 (25-51)           | -                     | -                     |
| CRP (>=10 mg/L)                     | 5          | 3187  | 83 (79-86)           | 67 (60-73)           | 0.953                 | 0.085                 |
| CRP (>=8 mg/L)                      | 5          | 3187  | 85 (81-88)           | 63 (56-70)           | 0.8                   | 0.135                 |
| CRP (>=5 mg/L)                      | 5          | 3187  | 89 (86-92)           | 53 (46-61)           | 0.318                 | 0.375                 |
| CXR (abnormal)                      | 8          | 3525  | 71 (64-78)           | 62 (51-72)           | 0.102                 | 0.034                 |
| CXR (suggests tuberculosis)         | 8          | 3569  | 62 (55-68)           | 79 (67-87)           | 0.01                  | 0.001                 |
| Cough (any)                         | 20         | 11131 | 58 (50-65)           | 70 (63-76)           | <0.0001               | <0.0001               |
| Cough (>=2 weeks)                   | 16         | 9032  | 44 (34-52)           | 82 (75-87)           | <0.0001               | <0.0001               |
| Hb (<10 g/dL)                       | 9          | 4269  | 44 (32-56)           | 78 (70-85)           | <0.0001               | <0.0001               |
| Hb (<8 g/dL)                        | 9          | 4269  | 11 (8-15)            | 96 (93-98)           | <0.0001               | <0.0001               |
| BMI (<18.5 kg/m²)                   | 17         | 8486  | 31 (23-41)           | 87 (82-91)           | <0.0001               | <0.0001               |
| Lymphadenopathy                     | 4          | 2053  | 30 (13-55)           | 91 (76-97)           | 0.001                 | <0.0001               |
| W4SS with CRP (>=10 mg/L)¶         | 5          | 3187  | 94 (87-97)           | 20 (12-33)           | 0.113                 | 0.155                 |
| W4SS with CXR (abnormal)¶          | 8          | 3516  | 95 (91-97)           | 18 (9-33)            | 0.007                 | 0.064                 |
| W4SS then CRP (>=5 mg/L)¶          | 5          | 3187  | 84 (75-90)           | 64 (57-71)           | 0.793                 | 0.056                 |
| W4SS then Xpert*§                   | 11         | 5784  | 64 (57-71)           | 99 (98-99)           | -                     | -                     |
| Xpert alone*§                       | 11         | 5797  | 74 (64-82)           | 99 (98-99)           | 0.199                 | 0.59                  |

†Using culture as a reference standard. Indirect comparisons are based on all studies that evaluated at least one of the W4SS or relevant screening tests

‡‡For Xpert alone, the comparator is W4SS then Xpert

¶For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive

*Accuracy measures for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result). Alternative algorithms are W4SS then single sputum Xpert (11 studies; 5783 participants; sensitivity 61 (53-69), specificity 99 (98-99) and single sputum Xpert alone (11 studies; 5796 participants; sensitivity 70 (58-80), specificity 99 (98-99).§

§One study assessed Xpert and Xpert Ultra among 733 participants. The accuracy of sputum Xpert was: sensitivity 57 (47-67), specificity 99 (98-100); sputum Xpert Ultra: sensitivity 73 (62-81), specificity 98 (96-99); urine Xpert Ultra: sensitivity 13 (7-21), specificity 96 (93-98); sputum and urine Xpert Ultra: sensitivity 75 (65-83), specificity 95 (94-97)

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
Table S7C - Indirect comparisons between each test and WHO four-symptom screen for the detection of tuberculosis in participants with CD4 cell count <=200 cells/µL†

| Test                                      | No studies | N   | Sensitivity (95% CI) | Specificity (95% CI) | Sensitivity (p-value) | Specificity (p-value) |
|-------------------------------------------|------------|-----|----------------------|----------------------|-----------------------|-----------------------|
| W4SS                                      | 21         | 5617| 87 (77-93)           | 33 (20-48)           | -                     | -                     |
| CRP (>=10 mg/L)                           | 5          | 1593| 88 (82-92)           | 62 (50-73)           | 0.923                 | 0.07                  |
| CRP (>=8 mg/L)                            | 5          | 1593| 90 (86-93)           | 58 (45-70)           | 0.62                  | 0.113                 |
| CRP (>=5 mg/L)                            | 5          | 1593| 92 (88-95)           | 48 (34-62)           | 0.385                 | 0.319                 |
| CXR (abnormal)                            | 8          | 2201| 73 (65-80)           | 58 (48-67)           | 0.127                 | 0.063                 |
| CXR (suggests tuberculosis)               | 8          | 2134| 64 (57-71)           | 74 (64-82)           | 0.026                 | 0.003                 |
| Cough (any)                               | 21         | 5607| 59 (51-66)           | 66 (58-73)           | <0.0001               | <0.0001               |
| Cough (>=2 weeks)                         | 17         | 4197| 42 (33-51)           | 78 (70-85)           | <0.0001               | <0.0001               |
| Hb (<10 g/dL)                             | 9          | 1970| 54 (41-65)           | 74 (64-81)           | 0.004                 | 0.002                 |
| Hb (<8 g/dL)                              | 9          | 1970| 14 (9-19)            | 95 (91-97)           | <0.0001               | <0.0001               |
| BMI (<18.5 kg/m²)                         | 18         | 4950| 35 (27-44)           | 83 (77-88)           | <0.0001               | <0.0001               |
| Lymphadenopathy                           | 4          | 1001| 33 (15-58)           | 89 (73-96)           | 0.004                 | 0.002                 |
| W4SS with CRP (>=10 mg/L)¶               | 5          | 1593| 93 (57-99)           | 23 (9-47)            | 0.211                 | 0.548                 |
| W4SS with CXR (abnormal)¶                | 8          | 2199| 96 (91-98)           | 14 (7-25)            | 0.022                 | 0.06                  |
| W4SS then CRP (>=5 mg/L)¶                | 5          | 1593| 80 (49-94)           | 66 (37-86)           | 0.579                 | 0.066                 |
| W4SS then Xpert*§                         | 12         | 3110| 69 (61-76)           | 98 (97-99)           | -                     | -                     |
| Xpert alone*§                             | 12         | 3115| 77 (68-84)           | 98 (97-99)           | 0.167                 | 0.879                 |

†Using culture as a reference standard. Indirect comparisons are based on all studies that evaluated at least one of the W4SS or relevant screening tests

‡‡For Xpert alone, the comparator is W4SS then Xpert

¶For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive

*Accuracy measures for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result). Alternative algorithms are W4SS then single sputum Xpert (12 studies; 3110 participants; sensitivity 65 (57-72), specificity 98 (97-99) and single sputum Xpert alone (12 studies; 3115 participants; sensitivity 72 (62-81), specificity 98 (97-99).

§One study assessed Xpert and Xpert Ultra among 191 participants. The accuracy of sputum Xpert was: sensitivity 69 (54-81), specificity 98 (94-99); sputum Xpert Ultra: sensitivity 53 (30-72), specificity 98 (94-99); urine Xpert Ultra: sensitivity 40 (27-56), specificity 95 (90-98); sputum and urine Xpert Ultra: sensitivity 86 (74-95), specificity 91 (86-95)

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
Table S7D - Indirect comparisons between each test and WHO four-symptom screen for the detection of tuberculosis in participants with CD4 cell count >200 cells/µL†

| Test                                      | No studies | N     | Sensitivity (95% CI) | Specificity (95% CI) | Sensitivity (p-value) | Specificity (p-value) |
|-------------------------------------------|------------|-------|----------------------|----------------------|-----------------------|-----------------------|
| W4SS                                      | 21         | 9598  | 71 (59-81)           | 49 (36-63)           | -                     | -                     |
| CRP (>=10 mg/L)                           | 5          | 1822  | 65 (52-76)           | 79 (68-87)           | 0.543                 | 0.03                  |
| CRP (>=8 mg/L)                            | 5          | 1822  | 67 (53-79)           | 76 (64-85)           | 0.693                 | 0.058                 |
| CRP (>=5 mg/L)                            | 5          | 1822  | 78 (65-87)           | 65 (54-75)           | 0.469                 | 0.274                 |
| CXR (abnormal)                            | 8          | 3892  | 66 (57-74)           | 64 (53-74)           | 0.777                 | 0.23                  |
| CXR (suggests tuberculosis)               | 8          | 3915  | 59 (49-69)           | 81 (70-89)           | 0.341                 | 0.006                 |
| Cough (any)                               | 21         | 9581  | 51 (41-61)           | 76 (68-82)           | 0.019                 | 0.002                 |
| Cough (>=2 weeks)                         | 17         | 6409  | 34 (23-48)           | 87 (80-91)           | <0.0001               | <0.0001               |
| Hb (<10 g/dL)                             | 9          | 3047  | 25 (17-37)           | 84 (78-89)           | <0.0001               | 0.001                 |
| Hb (<8 g/dL)                              | 9          | 3047  | 6 (3-15)             | 96 (94-98)           | <0.0001               | <0.0001               |
| BMI (<18.5 kg/m²)                         | 18         | 7362  | 20 (13-29)           | 92 (88-95)           | <0.0001               | <0.0001               |
| Lymphadenopathy                           | 4          | 1373  | 30 (10-61)           | 90 (73-97)           | 0.017                 | 0.004                 |
| W4SS with CRP (>=10 mg/L)¶               | 5          | 1822  | 78 (53-92)           | 35 (15-61)           | 0.496                 | 0.349                 |
| W4SS with CXR (abnormal)¶                | 8          | 3886  | 91 (81-96)           | 28 (16-44)           | 0.008                 | 0.073                 |
| W4SS then CRP (>=5 mg/L)¶                | 5          | 1822  | 57 (15-91)           | 80 (62-91)           | 0.639                 | 0.03                  |
| W4SS then Xpert*§                         | 12         | 5128  | 46 (39-52)           | 99 (99-100)          | -                     | -                     |
| Xpert alone*§                             | 12         | 5135  | 57 (47-67)           | 99 (99-99)           | 0.052                 | 0.218                 |

†Using culture as a reference standard. Indirect comparisons are based on all studies that evaluated at least one of the W4SS or relevant screening tests

‡‡For Xpert alone, the comparator is W4SS then Xpert

¶For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive

*Accuracy measures for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result). Alternative algorithms are W4SS then single sputum Xpert (12 studies; 5127 participants; sensitivity 44 (38-51), specificity 100 (99-100) and single sputum Xpert alone (12 studies; 5134 participants; sensitivity 54 (44-64), specificity 99 (99-99).

§One study assessed Xpert and Xpert Ultra among 472 participants. The accuracy of sputum Xpert was: sensitivity 42 (28-58), specificity 99 (98-100); sputum Xpert Ultra: sensitivity 62 (47-76), specificity 98 (96-99); urine Xpert Ultra: sensitivity 8 (2-21), specificity 99 (97-99); sputum and urine Xpert Ultra: sensitivity 62 (47-76), specificity 97 (95-98)

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
Table S7E - Indirect comparisons between each test and WHO four-symptom screen for the detection of tuberculosis in pregnant participants†§

| Test                                      | No studies | N    | Sensitivity (95% CI) | Specificity (95% CI) | Sensitivity (p-value) | Specificity (p-value) |
|-------------------------------------------|------------|------|----------------------|----------------------|-----------------------|-----------------------|
| W4SS                                      | 8          | 1935 | 84 (24-99)           | 58 (39-75)           | -                     | -                     |
| CRP (>=10 mg/L)#                          | -          | -    | -                   | -                    | -                     | -                     |
| CRP (>=8 mg/L)#                           | -          | -    | -                   | -                    | -                     | -                     |
| CRP (>=5 mg/L)#                           | -          | -    | -                   | -                    | -                     | -                     |
| CXR (abnormal)                            | 1          | 8    | 75 (11-99)           | 69 (91-33)           | 0.538                 | 0.619                 |
| CXR (suggests tuberculosis)               | 1          | 7    | 75 (11-99)           | 93 (100-42)          | 0.456                 | 0.041                 |
| Cough (any)                               | 8          | 1933 | 67 (26-92)           | 81 (71-88)           | 0.445                 | 0.038                 |
| Cough (>=2 weeks)                         | 8          | 1933 | 47 (18-78)           | 92 (86-95)           | 0.203                 | 0.001                 |
| Hb (<10 g/dL)                             | 5          | 1350 | 20 (10-36)           | 75 (61-85)           | 0.132                 | 0.227                 |
| Hb (<8 g/dL)                              | 5          | 1350 | 0 (0-0)              | 98 (97-99)           | <0.0001               | <0.0001               |
| BMI (<18.5 kg/m²)                         | 7          | 472  | 0 (0-100)            | 96 (94-98)           | 0.003                 | <0.0001               |
| Lymphadenopathy#                          | -          | -    | -                   | -                    | -                     | -                     |
| W4SS with CRP (>=10 mg/L)#                | -          | -    | -                   | -                    | -                     | -                     |
| W4SS with CXR (abnormal)#                 | 1          | 8    | 75 (11-99)           | 56 (84-24)           | 0.541                 | 0.987                 |
| W4SS then CRP (>=5 mg/L)#                 | -          | -    | -                   | -                    | -                     | -                     |
| W4SS then Xpert*                          | 5          | 489  | 36 (16-62)           | 100 (0-100)          | -                     | -                     |
| Xpert alone*                              | 5          | 492  | 53 (29-76)           | 99 (98-100)          | 0.339                 | 0.05                  |

†Using culture as a reference standard. Indirect comparisons are based on all studies that evaluated at least one of the W4SS or relevant screening tests.
§For some analyses, all studies had 0% or 100% sensitivity/specificity; therefore, models may have given unreliable estimates such as 95% CIs that range from 0 to 100.
††For Xpert alone, the comparator is W4SS then Xpert.
¶For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive.
#Insufficient data to perform meta-analysis.
*Accuracy measures for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result). Alternative algorithms are W4SS then single sputum Xpert (5 studies; 489 participants; sensitivity 36 (16-62), specificity 100 (0-100) and single sputum Xpert alone (5 studies; 492 participants; sensitivity 47 (24-71), specificity 99 (98-100).

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen.
Table S8 - Direct comparisons between each test and WHO four-symptom screen for the detection of tuberculosis in all participants and subgroups

Table S8A - Direct comparisons between each test and WHO four-symptom screen for the detection of tuberculosis in all participants†

| Index Test | No of studies | N     | Sensitivity (95% CI) | Specificity (95% CI) | No of studies | N     | Sensitivity (95% CI) | Specificity (95% CI) | Sensitivity (p-value) | Specificity (p-value) |
|------------|---------------|-------|----------------------|----------------------|---------------|-------|----------------------|----------------------|----------------------|----------------------|
| CRP (>=10 mg/L) | 5 | 3571 | 77 (50-92) | 74 (52-88) | 5 | 3571 | 82 (58-94) | 39 (20-63) | 0.7 | 0.052 |
| CRP (>=8 mg/L) | 5 | 3571 | 79 (54-93) | 70 (48-86) | 5 | 3571 | 82 (58-94) | 39 (20-63) | 0.833 | 0.079 |
| CRP (>=5 mg/L) | 5 | 3571 | 86 (67-95) | 60 (37-79) | 5 | 3571 | 82 (59-94) | 39 (20-62) | 0.706 | 0.231 |
| CXR (abnormal) | 8 | 6186 | 72 (62-80) | 62 (46-75) | 8 | 6186 | 86 (80-91) | 32 (20-47) | 0.011 | 0.017 |
| CXR (suggests tuberculosis) | 8 | 6141 | 64 (53-73) | 78 (63-88) | 8 | 6141 | 84 (76-89) | 33 (19-51) | 0.004 | 0.001 |
| Cough (any) | 21 | 15568 | 56 (44-66) | 72 (62-81) | 21 | 15568 | 86 (80-91) | 42 (31-54) | <0.0001 | 0.001 |
| Cough (>=2 weeks) | 17 | 10906 | 38 (25-52) | 85 (75-91) | 17 | 10906 | 81 (70-88) | 41 (28-56) | <0.0001 | <0.0001 |
| Hb (<10 g/dL) | 9 | 5115 | 44 (25-65) | 80 (65-89) | 9 | 5115 | 85 (70-93) | 33 (18-51) | 0.006 | 0.001 |
| Hb (<8 g/dL) | 9 | 5115 | 12 (5-25) | 96 (91-98) | 9 | 5115 | 85 (69-93) | 33 (18-52) | <0.0001 | <0.0001 |
| BMI (<18.5 kg/m²) | 18 | 12639 | 29 (20-40) | 89 (82-93) | 18 | 12639 | 84 (76-90) | 41 (29-54) | <0.0001 | <0.0001 |
| Lymphadenopathy | 4 | 2389 | 31 (16-52) | 90 (77-96) | 4 | 2389 | 91 (79-96) | 27 (12-49) | 0.001 | 0.001 |
| W4SS with CRP (>=10 mg/L)¶ | 5 | 3571 | 89 (63-97) | 31 (12-58) | 5 | 3571 | 82 (50-95) | 39 (17-67) | 0.617 | 0.65 |
| W4SS with CXR (abnormal)¶ | 8 | 6186 | 94 (89-97) | 20 (10-37) | 8 | 6186 | 87 (78-92) | 32 (17-52) | 0.05 | 0.32 |
| W4SS then CRP (>=5 mg/L)¶ | 5 | 3571 | 72 (36-92) | 75 (50-90) | 5 | 3571 | 81 (49-95) | 39 (18-66) | 0.62 | 0.074 |

†Using culture as a reference standard. Direct comparisons are based on all studies that evaluated both the W4SS and relevant screening test
¶For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive
Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
| Index Test | No of studies | N   | Sensitivity (95% CI) | Specificity (95% CI) | No of studies | N   | Sensitivity (95% CI) | Specificity (95% CI) | Sensitivity (p-value) | Specificity (p-value) |
|------------|---------------|-----|---------------------|---------------------|---------------|-----|---------------------|---------------------|----------------------|---------------------|
| CRP (>=10 mg/L) | 1             | 381 | 20 (3-69)          | 90 (87-93)          | 1             | 381 | 8 (1-62)            | 88 (84-91)          | 0.458                | 0.246                |
| CRP (>=8 mg/L)  | 1             | 381 | 40 (10-80)         | 89 (86-92)          | 1             | 381 | 8 (1-62)            | 88 (84-91)          | 0.223                | 0.571                |
| CRP (>=5 mg/L)  | 1             | 381 | 40 (10-80)         | 80 (75-84)          | 1             | 381 | 8 (1-62)            | 88 (84-91)          | 0.223                | 0.003                |
| CXR (abnormal)  | 4             | 2670| 74 (55-87)         | 63 (42-80)          | 4             | 2670| 70 (50-85)         | 52 (31-72)          | 0.786                | 0.469                |
| CXR (suggests tuberculosis) | 4   | 2581| 71 (52-84)        | 78 (57-91)        | 4             | 2581| 64 (44-80)        | 54 (31-76)        | 0.587                | 0.144                |
| Cough (any)     | 9             | 4309| 40 (23-58)         | 83 (70-91)         | 9             | 4309| 54 (36-72)        | 71 (54-84)        | 0.286                | 0.206                |
| Cough (>=2 weeks) | 6            | 1746| 20 (6-50)          | 93 (79-98)         | 6             | 1746| 52 (23-80)        | 74 (45-91)        | 0.136                | 0.09                 |
| Hb (<10 g/dL)   | 4             | 844 | 52 (15-87)         | 84 (60-94)         | 4             | 844 | 65 (21-93)        | 54 (26-79)        | 0.689                | 0.107                |
| Hb (<8 g/dL)    | 4             | 844 | 15 (1-78)          | 95 (84-98)         | 4             | 844 | 67 (9-98)         | 54 (27-78)        | 0.285                | 0.008                |
| BMI (<18.5 kg/m²) | 7           | 4036| 16 (8-32)          | 93 (85-97)         | 7             | 4036| 53 (33-72)       | 73 (54-86)        | 0.009                | 0.17                 |
| Lymphadenopathy | 1             | 338 | 22 (6-58)          | 93 (89-95)         | 1             | 338 | 78 (42-94)        | 55 (50-60)        | 0.027                | <0.0001              |
| W4SS with CRP (>=10 mg/L)¶ | 1        | 381 | 20 (3-69)         | 80 (75-83)         | 1             | 381 | 8 (1-62)         | 88 (84-91)         | 0.458                | 0.003                |
| W4SS with CXR (abnormal)¶ | 4       | 2670| 89 (71-96)        | 33 (15-57)         | 4             | 2670| 73 (47-89)       | 52 (28-75)        | 0.187                | 0.291                |
| W4SS then CRP (>=5 mg/L)¶ | 1      | 381 | 8 (1-62)          | 96 (93-97)         | 1             | 381 | 8 (1-62)         | 88 (84-91)         | 1                    | <0.0001              |

†Using culture as a reference standard. Direct comparisons are based on all studies that evaluated both the W4SS and relevant screening test.
¶For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive.
Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen.
Table S8C - Direct comparisons between each test and WHO four-symptom screen for the detection of tuberculosis in outpatients (not on ART)†

| Index Test | No of studies | N   | Sensitivity (95% CI) | Specificity (95% CI) | No of studies | N   | Sensitivity (95% CI) | Specificity (95% CI) | Sensitivity (p-value) | Specificity (p-value) |
|------------|---------------|-----|----------------------|----------------------|---------------|-----|----------------------|----------------------|-----------------------|-----------------------|
| CRP (≥10 mg/L) | 5             | 3187 | 84 (74-90)           | 66 (53-78)           | 5             | 3187 | 90 (83-94)           | 27 (17-40)           | 0.236                 | 0.005                 |
| CRP (≥8 mg/L)  | 5             | 3187 | 85 (75-92)           | 63 (49-75)           | 5             | 3187 | 90 (82-95)           | 27 (17-40)           | 0.349                 | 0.008                 |
| CRP (≥5 mg/L)  | 5             | 3187 | 90 (83-95)           | 53 (39-66)           | 5             | 3187 | 90 (83-94)           | 27 (18-40)           | 0.952                 | 0.031                 |
| CXR (abnormal) | 8             | 3516 | 71 (62-79)           | 62 (48-74)           | 8             | 3516 | 89 (83-93)           | 27 (17-40)           | 0.952                 | 0.031                 |
| CXR (suggests tuberculosis) | 8          | 3560 | 62 (52-71)           | 79 (65-88)           | 8             | 3560 | 87 (81-92)           | 28 (17-44)           | <0.0001               | <0.0001               |
| Cough (any)    | 20            | 11131| 42 (29-55)           | 82 (72-89)           | 16            | 9032 | 83 (74-90)           | 37 (25-50)           | <0.0001               | <0.0001               |
| Hb (<10 g/dL)  | 9             | 4268 | 44 (27-63)           | 79 (65-88)           | 9             | 4268 | 89 (78-95)           | 26 (15-41)           | 0.001                 | <0.0001               |
| Hb (<8 g/dL)   | 9             | 4268 | 11 (5-21)            | 96 (92-98)           | 9             | 4268 | 88 (78-94)           | 26 (15-42)           | <0.0001               | <0.0001               |
| BMI (<18.5 kg/m²) | 17         | 8475 | 31 (22-42)           | 87 (81-92)           | 17            | 8475 | 87 (81-92)           | 34 (24-46)           | <0.0001               | <0.0001               |
| Lymphadenopathy | 4           | 2051 | 30 (15-51)           | 91 (78-96)           | 4             | 2051 | 91 (80-96)           | 25 (11-48)           | 0.001                 | 0.001                 |
| W4SS with CRP (≥10 mg/L)¶ | 5         | 3187 | 94 (87-97)           | 20 (11-34)           | 5             | 3187 | 90 (79-95)           | 28 (16-43)           | 0.351                 | 0.407                 |
| W4SS with CXR (abnormal)¶ | 8        | 3516 | 95 (91-97)           | 18 (9-32)            | 8             | 3516 | 89 (82-93)           | 27 (15-44)           | 0.045                 | 0.364                 |
| W4SS then CRP (≥5 mg/L)¶ | 5         | 3187 | 83 (72-91)           | 65 (51-76)           | 5             | 3187 | 90 (82-95)           | 27 (18-40)           | 0.254                 | 0.004                 |

†Using culture as a reference standard. Direct comparisons are based on all studies that evaluated both the W4SS and relevant screening test

¶For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
| Table S8D - Direct comparisons between each test and WHO four-symptom screen for the detection of tuberculosis in participants with CD4 cell count <=200 cells/µL† |
|---|---|---|---|---|---|---|
| | Index Test | W4SS | Difference from W4SS |
| | No of studies | N | Sensitivity (95% CI) | Specificity (95% CI) | No of studies | N | Sensitivity (95% CI) | Specificity (95% CI) | Sensitivity (p-value) | Specificity (p-value) |
| CRP (>=10 mg/L) | 5 | 1593 | 87 (59-97) | 64 (39-83) | 5 | 1593 | 86 (58-97) | 32 (15-56) | 0.992 | 0.094 |
| CRP (>=8 mg/L) | 5 | 1593 | 89 (69-97) | 60 (35-80) | 5 | 1593 | 88 (64-96) | 32 (15-57) | 0.851 | 0.145 |
| CRP (>=5 mg/L) | 5 | 1593 | 92 (74-98) | 49 (26-73) | 5 | 1593 | 87 (63-97) | 32 (14-57) | 0.655 | 0.351 |
| CXR (abnormal) | 8 | 2199 | 74 (64-81) | 58 (44-70) | 8 | 2199 | 90 (84-94) | 22 (14-32) | 0.002 | 0.001 |
| CXR (suggests tuberculosis) | 8 | 2132 | 65 (55-73) | 74 (60-84) | 8 | 2132 | 88 (82-92) | 24 (14-37) | <0.0001 | <0.0001 |
| Cough (any) | 21 | 5607 | 57 (45-69) | 67 (55-77) | 21 | 5607 | 87 (79-92) | 32 (22-44) | <0.0001 | <0.0001 |
| Cough (>=2 weeks) | 17 | 4197 | 39 (25-55) | 80 (67-88) | 17 | 4197 | 85 (75-92) | 31 (19-47) | <0.0001 | <0.0001 |
| Hb (<10 g/dL) | 9 | 1969 | 54 (33-73) | 74 (56-86) | 9 | 1969 | 88 (75-95) | 26 (13-43) | 0.013 | 0.002 |
| Hb (<8 g/dL) | 9 | 1969 | 15 (7-30) | 95 (89-98) | 9 | 1969 | 89 (76-95) | 25 (13-44) | <0.0001 | <0.0001 |
| BMI (<18.5 kg/m²) | 18 | 4947 | 34 (23-47) | 84 (75-90) | 18 | 4947 | 88 (80-93) | 31 (21-44) | <0.0001 | <0.0001 |
| Lymphadenopathy | 4 | 1000 | 33 (16-56) | 89 (75-95) | 4 | 1000 | 94 (84-98) | 18 (8-37) | 0.001 | 0.001 |
| W4SS with CRP (>=10 mg/L)¶ | 5 | 1593 | 94 (62-99) | 23 (8-50) | 5 | 1593 | 83 (36-98) | 32 (12-61) | 0.489 | 0.614 |
| W4SS with CXR (abnormal)¶ | 8 | 2199 | 96 (82-98) | 14 (7-24) | 8 | 2199 | 90 (83-94) | 22 (12-36) | 0.042 | 0.267 |
| W4SS then CRP (>=5 mg/L)¶ | 5 | 1593 | 77 (35-95) | 66 (36-87) | 5 | 1593 | 86 (50-98) | 32 (12-63) | 0.631 | 0.144 |

†Using culture as a reference standard. Direct comparisons are based on all studies that evaluated both the W4SS and relevant screening test
¶For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
Table S8E - Direct comparisons between each test and WHO four-symptom screen for the detection of tuberculosis in participants with CD4 cell count >200 cells/µL†

| Test                                      | No of studies | N      | Sensitivity (95% CI) | Specificity (95% CI) | No of studies | N      | Sensitivity (95% CI) | Specificity (95% CI) | Sensitivity (p-value) | Specificity (p-value) |
|-------------------------------------------|---------------|--------|----------------------|----------------------|---------------|--------|----------------------|----------------------|-----------------------|-----------------------|
| **CRP (>=10 mg/L)**                       | 5             | 1822   | 62 (35-83)           | 79 (60-91)           | 5             | 1822   | 72 (45-89)           | 43 (23-66)           | 0.581                 | 0.035                 |
| **CRP (>=8 mg/L)**                        | 5             | 1822   | 65 (37-86)           | 76 (55-89)           | 5             | 1822   | 72 (44-90)           | 43 (23-66)           | 0.694                 | 0.055                 |
| **CRP (>=5 mg/L)**                        | 5             | 1822   | 78 (53-92)           | 65 (43-82)           | 5             | 1822   | 70 (43-88)           | 43 (23-65)           | 0.626                 | 0.182                 |
| **CXR (abnormal)**                        | 8             | 3886   | 67 (54-78)           | 64 (49-77)           | 8             | 3886   | 79 (68-87)           | 41 (27-57)           | 0.111                 | 0.048                 |
| **CXR (suggests tuberculosis)**           | 8             | 3909   | 60 (47-72)           | 81 (68-90)           | 8             | 3909   | 77 (65-86)           | 41 (25-59)           | 0.058                 | 0.002                 |
| **Cough (any)**                           | 21            | 9581   | 52 (40-63)           | 75 (66-83)           | 21            | 9581   | 71 (60-80)           | 50 (38-61)           | 0.018                 | 0.002                 |
| **Cough (>=2 weeks)**                     | 17            | 6409   | 34 (22-49)           | 87 (78-92)           | 17            | 6409   | 70 (56-81)           | 48 (34-62)           | 0.001                 | <0.0001               |
| **Hb (<10 g/dL)**                         | 9             | 3047   | 26 (12-48)           | 84 (72-91)           | 9             | 3047   | 79 (58-91)           | 41 (25-58)           | 0.004                 | 0.001                 |
| **Hb (<8 g/dL)**                          | 9             | 3047   | 6 (2-18)             | 97 (93-98)           | 9             | 3047   | 79 (56-92)           | 41 (24-59)           | <0.0001               | <0.0001               |
| **BMI (<18.5 kg/m²)**                     | 18            | 7356   | 20 (13-30)           | 92 (87-95)           | 18            | 7356   | 74 (64-83)           | 49 (36-62)           | <0.0001               | <0.0001               |
| **Lymphadenopathy**                       | 4             | 1373   | 30 (12-56)           | 90 (77-96)           | 4             | 1373   | 85 (65-95)           | 34 (16-58)           | 0.008                 | 0.003                 |
| **W4SS with CRP (>=10 mg/L)¶**            | 5             | 1822   | 77 (48-93)           | 35 (15-62)           | 5             | 1822   | 71 (39-90)           | 43 (20-70)           | 0.707                 | 0.665                 |
| **W4SS with CXR (abnormal)¶**             | 8             | 3886   | 91 (81-96)           | 28 (16-45)           | 8             | 3886   | 82 (67-91)           | 41 (25-59)           | 0.159                 | 0.293                 |
| **W4SS then CRP (>=5 mg/L)¶**             | 5             | 1822   | 61 (21-90)           | 80 (58-92)           | 5             | 1822   | 71 (29-93)           | 43 (21-69)           | 0.731                 | 0.049                 |

† Using culture as a reference standard. Direct comparisons are based on all studies that evaluated both the W4SS and relevant screening test.

¶ For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive.

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen.
Table S8F - Direct comparisons between each test and WHO four-symptom screen for the detection of tuberculosis in pregnant participants†§

| Index Test | No of studies | N     | Sensitivity (95% CI) | Specificity (95% CI) | No of studies | N     | Sensitivity (95% CI) | Specificity (95% CI) | Sensitivity (p-value) | Specificity (p-value) |
|------------|---------------|-------|----------------------|----------------------|---------------|-------|----------------------|----------------------|----------------------|----------------------|
| CRP (>=10 mg/L)# | - | - | - | - | - | - | - | - | - | - |
| CRP (>=8 mg/L)# | - | - | - | - | - | - | - | - | - | - |
| CRP (>=5 mg/L)# | - | - | - | - | - | - | - | - | - | - |
| CXR (abnormal) | 1 | 8 | 75 (11-99) | 69 (33-91) | 1 | 8 | 75 (11-99) | 81 (42-96) | 1 | 0.567 |
| CXR (suggests tuberculosis) | 1 | 7 | 75 (11-99) | 93 (42-100) | 1 | 7 | 75 (11-99) | 79 (38-96) | 1 | 0.465 |
| Cough (any) | 8 | 1933 | 69 (28-93) | 80 (68-89) | 8 | 1933 | 83 (39-97) | 59 (42-74) | 0.448 | 0.04 |
| Cough (>=2 weeks) | 8 | 1933 | 53 (20-83) | 92 (84-96) | 8 | 1933 | 78 (36-95) | 59 (43-74) | 0.215 | 0.001 |
| Hb (<10 g/dL) | 5 | 1350 | 53 (6-95) | 74 (58-86) | 5 | 1350 | 92 (7-100) | 59 (41-75) | 0.125 | 0.184 |
| Hb (<8 g/dL) | 5 | 1350 | 0 (0-100) | 98 (94-99) | 5 | 1350 | 95 (1-100) | 59 (40-75) | 0.001 | <0.0001 |
| BMI (<18.5 kg/m²) | 7 | 471 | 0 (0-98) | 97 (93-99) | 7 | 471 | 100 (0-100) | 54 (38-69) | <0.0001 | <0.0001 |
| Lymphadenopathy# | - | - | - | - | - | - | - | - | - | - |
| W4SS with CRP (>=10 mg/L)¶# | - | - | - | - | - | - | - | - | - | - |
| W4SS with CXR (abnormal)¶ | 1 | 8 | 75 (11-99) | 56 (24-84) | 1 | 8 | 75 (11-99) | 81 (42-96) | 1 | 0.292 |
| W4SS then CRP (>=5 mg/L)¶# | - | - | - | - | - | - | - | - | - | - |

†Using culture as a reference standard. Direct comparisons are based on all studies that evaluated both the W4SS and relevant screening test
§For some analyses, all studies had 0% or 100% sensitivity/specificity; therefore, models may have given unreliable estimates such as 95% CIs that range from 0 to 100
¶For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive
#Insufficient data to perform meta-analysis

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
Table S9 - Additional diagnostic accuracy estimates

Table S9A - Additional diagnostic accuracy estimates in all participants

| Test                  | Univariate diagnostic odds ratio | Positive screen (%)‡‡ | Trivariate GLMM†† | Metaregression†       |
|-----------------------|---------------------------------|------------------------|-------------------|----------------------|
|                       | Estimate (95% CI) | P (95% CI) | Trim-and-fill estimate (95% CI) | P-value | Estimate (95% CI) | P (95% CI) | PPV (95% CI) | NPV (95% CI) | P-value | P-value |
| W4SS                  | 3.21 (2.61-3.95) | 0.057 | 3.39 (2.74-4.20) | 0.016 | 60 (45-73) | 0.99 (0.99-1.00) | 11.6 (9.3-14.3) | 96.2 (94.9-97.2) | 0.63 | 0.19 |
| CRP (≥10 mg/L)        | 9.06 (5.55-14.78) | 0.056 | 13.83 (8.18-23.36) | 0.021 | 32 (20-47) | 0.97 (0.95-0.98) | 20.7 (10.4-37.1) | 96.8 (94.7-98.1) | - | 0.23 |
| CRP (≥8 mg/L)         | 8.93 (5.11-15.63) | 0.057 | 14.15 (7.88-25.38) | 0.038 | 35 (22-50) | 0.97 (0.96-0.98) | 20.5 (11.5-33.9) | 97.1 (94.9-98.3) | - | 0.35 |
| CRP (≥5 mg/L)         | 8.79 (5.06-15.26) | 0.057 | 12.33 (6.80-22.33) | 0.03 | 45 (32-59) | 0.98 (0.96-0.98) | 16.7 (8.4-30.6) | 97.5 (95.6-98.6) | - | 0.28 |
| CXR (abnormal)        | 4.07 (2.97-5.58) | 0.056 | 4.07 (2.97-5.58) | 0.084 | 41 (32-52) | 99 (96-98) | 14.0 (9.5-20.2) | 96.1 (93.4-97.7) | 0.08 0.27 |
| CXR (suggests tuberculosis) | 6.37 (3.89-10.43) | 0.056 | 6.37 (3.92-10.35) | 0.095 | 26 (17-38) | 99 (99-99) | 22.6 (17.6-28.5) | 95.4 (93.1-96.9) | 0.12 0.11 |
| Cough (any)           | 3.23 (2.76-3.77) | 0.057 | 3.23 (2.76-3.77) | 0.098 | 30 (23-38) | 99 (98-99) | 15.1 (12.4-18.2) | 95.3 (93.5-96.5) | 0.84 <0.0001 |
| Cough (≥2 weeks)      | 3.32 (2.62-4.20) | 0.057 | 2.95 (2.31-3.76) | 0.41 | 18 (12-25) | 98 (97-98) | 19.2 (15.9-22.9) | 94.1 (91.7-95.8) | 0.4 <0.0001 |
| Hb (<10 g/dL)         | 3.03 (2.31-3.97) | 0.057 | 2.96 (2.25-3.89) | 0.96 | 22 (16-30) | 97 (96-98) | 12.5 (6.6-22.4) | 95.2 (91.3-97.4) | 0.4 0.93 |
| Hb (<8 g/dL)          | 3.25 (1.73-6.09) | 0.057 | 4.33 (2.22-8.44) | 0.54 | 5 (3-8) | 94 (90-96) | 15.5 (7.2-30.3) | 93.9 (89.1-96.7) | 0.12 0.63 |
| BMI (<18.5 kg/m²)     | 3.11 (2.65-3.64) | 0.057 | 3.45 (2.83-4.20) | 0.72 | 13 (9-18) | 98 (97-98) | 18.3 (13.4-24.5) | 93.6 (91.1-95.5) | 0.65 0.26 |
| Lymphadenopathy       | 3.96 (2.72-5.77) | 0.057 | 4.81 (3.24-7.15) | 0.93 | 12 (5-26) | 99 (98-99) | 18.3 (8.1-36.3) | 94.5 (89.0-97.3) | 0.21 0.32 |
| W4SS with CRP (≥10 mg/L) | 3.61 (2.41-5.40) | 0.057 | 3.61 (2.41-5.40) | 0.9 | 71 (45-88) | 99 (99-100) | 12.6 (8.1-19.0) | 96.5 (93.7-98.1) | - 0.28 |
| W4SS with CXR (abnormal) | 5.22 (3.61-7.54) | 0.057 | 5.44 (3.79-7.83) | 0.38 | 81 (65-91) | 99 (99-99) | 10.0 (6.9-14.4) | 97.8 (94.6-99.2) | 0.91 0.04 |
| W4SS then CRP (≥5 mg/L) | 8.49 (4.69-15.37) | 0.057 | 8.95 (5.04-15.90) | 0.66 | 30 (13-54) | 98 (96-99) | 21.9 (13.9-33.0) | 96.7 (94.6-98.0) | - 0.61 |
| W4SS then Xpert*      | 142.47 (95.22-213.16) | 0.057 | 142.49 (95.27-213.13) | 0.37 | 5 (3-9) | 93 (90-95) | 87.9 (75.4-94.5) | 96.6 (94.6-97.9) | 0.66 0.54 |
| Xpert alone           | 165.89 (95.97-286.77) | 0.057 | 273.62 (157.19-476.31) | 0.56 | 7 (4-10) | 92 (88-95) | 81.1 (66.8-90.1) | 97.5 (95.5-98.6) | 0.65 0.78 |

†For the meta-regressions, the outcome variable was the diagnostic odds ratio
‡‡Calculated using meta-analysis of proportions. We used a generalized linear mixed model with logit transformation in preference to protocol specified DerSimonian and Laird random effects model for proportions with variance stabilization by applying the Freeman-Tukey double arcsine transformation
†††Pooled using a trivariate generalized linear mixed model that jointly models diagnostic test prevalence and predictive values
*Estimates for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result)

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, GLMM = generalized linear mixed model, Hb = haemoglobin, NPV = negative predictive value, PPV = positive predictive value, W4SS = WHO four-symptom screen

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| Test | Univariate diagnostic odds ratio | Positive screen (%)†† | Trivariate GLMM††† | Reference standard | Prevalence |
|------|---------------------------------|------------------------|---------------------|-------------------|------------|
|      | Estimate (95% CI) | I² (95% CI) | Trim-and-fill estimate (95% CI) | Egger’s test (p-value) | Estimate (95% CI) | I² (95% CI) | PPV (95% CI) | NPV (95% CI) | P-value | P-value |
| W4SS | 3.07 (2.09-4.52) | 0 (0-63) | 3.80 (2.50-5.79) | 0.38 | 30 (16-50) | 99 (98-99) | 6.0 (3.9-9.1) | 97.9 (96.7-98.7) | 0.93 | 0.41 |
| CRP (≥10 mg/L) | 2.36 (0.26-21.70) | - | - | - | 10 (7-13) | - | 2.7 (0.1-13.8) | 98.8 (97.0-99.5) | - | - |
| CRP (≥8 mg/L) | 5.45 (0.88-33.56) | - | - | - | 11 (8-15) | - | 4.7 (1.3-15.5) | 99.1 (97.4-99.7) | - | - |
| CRP (≥5 mg/L) | 2.63 (0.43-16.03) | - | - | - | 20 (17-25) | - | 2.6 (0.7-8.9) | 99.0 (97.1-99.7) | - | - |
| CXR (abnormal) | 4.31 (2.21-8.39) | 22 (0-88) | 4.31 (2.22-8.35) | 0.64 | 38 (26-52) | 98 (97-99) | 5.9 (4.3-8.0) | 98.7 (97.4-99.3) | 0.15 | 0.44 |
| CXR (suggests tuberculosis) | 8.84 (4.39-17.80) | 37 (0-78) | 8.84 (4.44-17.58) | 0.8 | 24 (12-41) | 99 (98-99) | 11.3 (8.7-14.5) | 98.5 (97.3-99.2) | 0.16 | 0.12 |
| Cough (any) | 3.16 (2.11-4.74) | 0 (0-65) | 3.16 (2.11-4.74) | 0.74 | 18 (11-28) | 97 (96-98) | 7.1 (4.9-10.1) | 97.8 (96.4-98.6) | 0.21 | 0.21 |
| Cough (≥2 weeks) | 3.23 (1.53-6.82) | 0 (0-72) | 2.27 (1.16-4.46) | 0.12 | 7 (2-22) | 98 (96-98) | 9.6 (5.9-15.2) | 97.4 (95.0-98.6) | 0.19 | 0.2 |
| Hb (<10 g/dL) | 5.42 (2.19-13.45) | 0 (0-87) | 5.42 (2.19-13.45) | 0.76 | 19 (10-31) | 94 (88-97) | 7.2 (3.4-14.7) | 98.7 (97.3-99.3) | 0.59 | 0.81 |
| Hb (<8 g/dL) | 5.23 (1.62-16.91) | 0 (0-83) | 8.22 (3.08-21.89) | 0.15 | 6 (4-9) | 54 (0-85) | 6.7 (1.7-22.7) | 98.0 (96.3-98.9) | 0.96 | 0.46 |
| BMI (<18.5 kg/m²) | 2.61 (1.56-4.37) | 0 (0-0) | 2.61 (1.56-4.37) | 0.44 | 7 (4-13) | 95 (91-97) | 6.6 (3.5-12.1) | 97.4 (96.1-98.2) | 0.35 | 0.65 |
| Lymphadenopathy | 3.63 (0.71-18.45) | - | - | - | 8 (5-11) | - | 7.7 (2.1-24.1) | 97.8 (95.4-98.9) | - | - |
| W4SS with CRP (≥10 mg/L) | 0.97 (0.11-8.81) | - | - | - | 20 (17-25) | - | 1.3 (0.1-6.9) | 98.7 (96.7-99.5) | - | - |
| W4SS with CXR (abnormal) | 3.69 (1.96-6.93) | 0 (0-61) | 3.69 (1.96-6.93) | 0.96 | 68 (46-84) | 99 (99-99) | 4.7 (3.4-6.4) | 98.8 (96.9-99.5) | 0.79 | 0.41 |
| W4SS then CRP (≥5 mg/L) | 2.12 (0.11-40.08) | - | - | - | 4 (2-6) | - | 0.0 (0.0-20.4) | 98.6 (96.8-99.4) | - | - |
| W4SS then Xpert* | 82.01 (14.71-457.12) | 65 (0-88) | 230.45 (35.98-1476.17) | 0.82 | 1 (0-4) | 88 (71-95) | 78.3 (22.7-97.8) | 98.9 (98.4-99.2) | - | 0.34 |
| Xpert alone* | 88.54 (10.76-728.44) | 81 (51-93) | 442.60 (45.58-4298.07) | 0.46 | 2 (1-4) | 82 (54-93) | 42.7 (20.7-68.2) | 99.2 (98.2-99.7) | - | 0.85 |

†For the meta-regressions, the outcome variable was the diagnostic odds ratio
††Calculated using meta-analysis of proportions. We used a generalized linear mixed model with logit transformation in preference to protocol specified DerSimonian and Laird random effects model for proportions with variance stabilization by applying the Freeman-Tukey double arcsine transformation
†††Pooled using a trivariate generalized linear mixed model that jointly models diagnostic test prevalence and predictive values
*Estimates for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result)

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, GLMM = generalized linear mixed model, Hb = haemoglobin, NPV = negative predictive value, PPV = positive predictive value, W4SS = WHO four-symptom screen
Table S9C - Additional diagnostic accuracy estimates in outpatients (Not on ART)

| Test                          | Univariate diagnostic odds ratio | Positive screen (%)†† | Trivariate GLMM††† | Reference standard | Prevalence |
|------------------------------|---------------------------------|-----------------------|--------------------|--------------------|-------------|
| W4SS                         | Estimate (95% CI)               | I² (95% CI)           | Trim-and-fill      | Egger’s test (p-value) | Estimate (95% CI) | I² (95% CI) | PPV (95% CI) | NPV (95% CI) | P-value | P-value |
|                             | 3.14 (2.61-3.78)               | 0 (0-46)              | 3.11 (2.59-3.75)   | 0.72               | 65 (52-76)             | 99 (99-99) | 12.8 (10.5-15.6) | 95.8 (94.4-96.8) | 0.63 | 0.78 |
| CRP (>=10 mg/L)              | 9.66 (5.97-15.65)              | 67 (3-89)             | 13.79 (8.17-23.28) | 0.35               | 40 (33-46)             | 91 (82-96) | 28.4 (22.9-34.6) | 95.9 (94.6-96.9) | -   | 0.66 |
| CRP (>=8 mg/L)               | 9.30 (5.10-16.95)              | 77 (37-92)            | 14.05 (7.45-26.52) | 0.39               | 43 (36-50)             | 92 (84-96) | 26.6 (21.1-32.9) | 96.1 (94.8-97.1) | -   | 0.47 |
| CRP (>=5 mg/L)               | 9.72 (5.65-16.70)              | 62 (0-87)             | 14.97 (8.02-27.93) | 0.61               | 52 (46-59)             | 92 (86-96) | 23.3 (18.8-28.4) | 96.8 (95.3-97.8) | -   | 0.95 |
| CXR (abnormal)               | 4.08 (3.02-5.51)               | 28 (0-68)             | 4.08 (3.02-5.50)   | 0.93               | 42 (31-52)             | 98 (97-98) | 19.0 (15.3-23.2) | 95.0 (91.8-96.9) | 0.44 | 0.01 |
| CXR (suggests tuberculosis)  | 5.98 (3.42-10.46)              | 81 (64-90)            | 5.49 (3.23-9.32)   | 0.99               | 26 (17-38)             | 98 (97-99) | 28.3 (24.6-32.4) | 93.7 (91.2-95.6) | 0.29 | <0.0001 |
| Cough (any)                  | 3.12 (2.74-3.56)               | 0 (0-41)              | 2.95 (2.57-3.39)   | 0.29               | 33 (27-40)             | 98 (97-98) | 16.9 (14.0-20.1) | 94.4 (92.5-95.9) | 0.46 | 0.06 |
| Cough (>=2 weeks)            | 3.26 (2.61-4.06)               | 48 (5-71)             | 2.92 (2.34-3.65)   | 0.17               | 21 (15-28)             | 97 (96-98) | 20.6 (17.6-23.9) | 93.3 (90.9-95.1) | 0.72 | 0.01 |
| Hb (<=10 g/dL)               | 2.88 (2.19-3.80)               | 24 (0-66)             | 2.88 (2.19-3.80)   | 0.41               | 24 (17-32)             | 96 (95-98) | 13.3 (6.2-26.5) | 94.2 (89.5-96.9) | 0.55 | 0.44 |
| Hb (>=8 g/dL)                | 3.11 (1.48-6.52)               | 69 (31-86)            | 3.11 (1.50-6.43)   | 0.74               | 5 (3-8)                | 93 (90-96) | 16.6 (6.3-37.0) | 92.6 (86.9-95.9) | 0.08 | 0.91 |
| BMI (<=18.5 kg/m²)           | 3.05 (2.54-3.66)               | 17 (0-53)             | 2.86 (2.37-3.46)   | 0.7                | 15 (10-21)             | 97 (97-98) | 21.8 (16.7-28.0) | 92.1 (89.5-94.1) | 0.59 | 0.34 |
| Lymphadenopathy              | 4.01 (2.73-5.89)               | 0 (0-83)              | 3.43 (2.37-4.98)   | 0.85               | 11 (4-26)              | 98 (97-99) | 19.5 (7.1-43.6) | 94.8 (87.7-97.9) | 0.22 | 0.35 |
| W4SS with CRP (>=10 mg/L)    | 3.78 (2.51-5.70)               | 0 (0-67)              | 3.44 (2.36-5.00)   | 0.17               | 82 (70-90)             | 98 (97-99) | 16.3 (14.9-17.7) | 95.5 (93.3-97.0) | -   | 0.79 |
| W4SS with CXR (abnormal)     | 4.85 (3.07-7.67)               | 0 (0-66)              | 5.73 (3.69-8.90)   | 0.22               | 83 (69-92)             | 98 (97-98) | 12.5 (9.1-16.8) | 97.2 (92.8-99.0) | 0.82 | 0.1  |
| W4SS then CRP (>=5 mg/L)     | 8.94 (4.86-16.45)              | 78 (39-92)            | 8.94 (4.88-16.38)  | 0.9                | 42 (35-50)             | 93 (86-96) | 27.0 (23.3-31.0) | 96.0 (94.3-97.2) | -   | 0.88 |
| W4SS then Xpert*             | 154.61 (111.63-214.14)         | 0 (0-44)              | 154.61 (111.63-214.14) | 0.21               | 8 (6-10)               | 82 (68-89) | 83.7 (71.7-91.2) | 96.6 (94.2-98.0) | 0.32 | 0.85 |
| Xpert alone*                 | 184.61 (120.87-281.97)         | 30 (0-66)             | 184.60 (120.90-281.86) | 0.99               | 9 (7-11)               | 74 (53-86) | 84.0 (74.7-90.3) | 97.7 (95.1-99.0) | 0.29 | 0.36 |

††Calculated using meta-analysis of proportions. We used a generalized linear mixed model with logit transformation in preference to protocol specified DerSimonian and Laird random effects model for proportions with variance stabilizing by applying the Freeman-Tukey double arcsine transformation

†††Pooled using a trivariate generalized linear mixed model that jointly models diagnostic test prevalence and predictive values

*Estimates for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result)

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, GLMM = generalized linear mixed model, Hb = haemoglobin, NPV = negative predictive value, PPV = positive predictive value, W4SS = WHO four-symptom screen
Table S9D - Additional diagnostic accuracy estimates in participants with a CD4 cell count <=200 cells/µL

| Test                        | Univariate diagnostic odds ratio | Positive screen (%)†† | Trivariate GLMM††† | Reference standard | Prevalence |
|-----------------------------|----------------------------------|-----------------------|--------------------|-------------------|------------|
|                             | Estimate (95% CI) | I² (95% CI) | Trim-and-fill estimate (95% CI) | Egger’s test (p-value) | Estimate (95% CI) | I² (95% CI) | PPV (95% CI) | NPV (95% CI) | P-value | P-value |
| W4SS with CXR (abnormal)   | 2.98 (2.33-3.81) | 0 (0-42) | 3.28 (2.54-4.24) | 0.29 | 70 (55-82) | 98 (98-99) | 17.5 (14.7-20.7) | 94.0 (92.0-95.5) | 0.29 | 0.46 |
| CRP (>=10 mg/L)             | 12.06 (7.99-18.21) | 9 (0-81) | 14.72 (9.32-23.24) | 0.02 | 46 (32-60) | 91 (82-96) | 37.5 (31.7-43.7) | 95.4 (93.7-96.6) | - | 0.1 |
| CRP (>=8 mg/L)              | 13.34 (8.96-19.87) | 1 (0-80) | 15.50 (10.22-23.51) | 0.04 | 50 (35-64) | 92 (84-96) | 36.0 (29.8-42.8) | 96.0 (94.0-97.3) | - | 0.59 |
| CRP (>=5 mg/L)              | 9.69 (5.15-18.26) | 35 (0-76) | 12.41 (6.74-22.87) | 0.26 | 50 (43-72) | 94 (88-97) | 31.7 (26.4-37.5) | 96.1 (93.6-97.6) | - | 0.55 |
| CXR (abnormal)              | 3.78 (2.83-5.05) | 0 (0-66) | 4.12 (3.08-5.50) | 0.44 | 46 (37-56) | 96 (94-98) | 20.4 (15.7-26.2) | 93.7 (90.6-95.9) | 0.23 | 0.4 |
| CXR (suggests tuberculosis) | 4.95 (3.15-7.78) | 61 (16-82) | 5.52 (3.53-8.64) | 0.7 | 32 (23-42) | 96 (95-98) | 29.7 (25.8-33.9) | 92.3 (89.7-94.3) | 0.24 | 0.1 |
| Cough (any)                 | 2.63 (2.24-3.09) | 0 (0-40) | 2.65 (2.26-3.11) | 0.98 | 37 (30-45) | 96 (95-97) | 21.8 (18.6-25.3) | 91.4 (88.9-93.5) | 0.77 | 0.01 |
| Cough (>=2 weeks)           | 2.46 (1.93-3.13) | 34 (0-64) | 2.29 (1.78-2.96) | 0.41 | 25 (18-33) | 94 (92-96) | 27.1 (23.1-31.4) | 89.0 (85.9-91.4) | 0.1 | <0.0001 |
| Hb (<=10 g/dL)              | 3.25 (2.21-4.79) | 37 (0-71) | 3.13 (2.09-4.69) | 0.71 | 30 (23-39) | 94 (90-96) | 20.4 (13.1-30.3) | 92.3 (88.1-95.0) | 0.97 | 0.64 |
| Hb (<=8 g/dL)               | 3.49 (1.55-7.87) | 64 (27-82) | 4.65 (1.93-11.16) | 0.7 | 7 (5-10) | 83 (70-91) | 26.6 (14.0-44.7) | 89.9 (85.1-93.3) | 0.3 | 0.9 |
| BMI (<=18.5 kg/m²)          | 2.57 (2.15-3.09) | 0 (0-43) | 2.41 (2.03-2.87) | 0.61 | 19 (14-26) | 96 (95-97) | 24.6 (19.1-31.0) | 89.1 (86.3-91.4) | 0.99 | 0.91 |
| Lymphadenopathy#            | 3.97 (2.36-6.68) | 0 (0-80) | 3.81 (2.31-6.28) | 0.59 | 14 (6-30) | 97 (95-98) | - | - | 0.32 | 0.52 |
| W4SS with CRP (>=10 mg/L)   | 5.14 (2.11-12.54) | 14 (0-82) | 5.15 (2.22-11.96) | 0.63 | 80 (56-92) | 96 (93-98) | 21.3 (17.0-26.4) | 95.8 (91.6-98.0) | - | 0.15 |
| W4SS with CXR (abnormal)    | 3.90 (2.25-6.79) | 0 (0-36) | 5.11 (3.14-8.31) | 0.33 | 88 (77-94) | 97 (96-98) | 14.4 (11.0-18.7) | 96.7 (90.5-98.9) | 0.82 | 0.29 |
| W4SS then CRP (>=5 mg/L)    | 7.50 (3.88-14.48) | 57 (0-84) | 12.80 (6.37-25.74) | 0.39 | 41 (17-70) | 85 (67-93) | 32.5 (27.0-38.6) | 94.7 (91.5-96.8) | - | 0.88 |
| W4SS then Xpert*            | 127.84 (86.56-188.80) | 0 (0-52) | 142.03 (90.33-223.30) | 0.11 | 12 (9-14) | 68 (42-82) | 85.4 (73.1-92.6) | 95.4 (92.6-97.1) | 0.47 | 0.29 |
| Xpert alone*                | 167.10 (100.59-277.58) | 25 (0-63) | 218.91 (123.79-387.11) | 0.41 | 13 (10-16) | 63 (31-80) | 86.0 (74.3-92.9) | 96.6 (94.0-98.1) | 0.73 | 0.63 |

†For the meta-regressions, the outcome variable was the diagnostic odds ratio
††Calculated using meta-analysis of proportions. We used a generalized linear mixed model with logit transformation in preference to protocol specified DerSimonian and Laird random effects model for proportions with variance stabilization by applying the Freeman-Tukey double arcsine transformation
†††Pooled using a trivariate generalized linear mixed model that jointly models diagnostic test prevalence and predictive values
#Trivariate random-effects model did not converge

*Estimates for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result)

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, GLMM = generalized linear mixed model, Hb = haemoglobin, NPV = negative predictive value, PPV = positive predictive value, W4SS = WHO four-symptom screen
| Test                      | Univariate diagnostic odds ratio | Positive screen (%)††† | Trivariate GLMM††† | Reference standard | Prevalence |
|---------------------------|----------------------------------|------------------------|--------------------|-------------------|------------|
|                           | Estimate (95% CI) | I² (95% CI) | Trim-and-fill estimate (95% CI) | Egger’s test (p-value) | Estimate (95% CI) | I² (95% CI) | PPV (95% CI) | NPV (95% CI) | P-value | P-value |
| W4SS                     | 2.33 (1.73-3.12) | 26 (0-57) | 2.26 (1.69-3.02) | 0.8 | 52 (38-65) | 99 (99-99) | 7.3 (5.8-9.1) | 96.8 (95.5-97.8) | 0.94 | 0.06 |
| CRP (≥10 mg/L)           | 6.23 (3.64-10.65) | 36 (0-76) | 6.23 (3.64-10.65) | 0.97 | 23 (14-37) | 95 (92-97) | 16.8 (11.2-24.3) | 97.2 (94.7-98.5) | - | 0.81 |
| CRP (≥8 mg/L)            | 5.81 (3.27-10.31) | 41 (0-78) | 5.81 (3.27-10.31) | 0.99 | 27 (16-40) | 96 (92-98) | 15.1 (9.7-22.8) | 97.2 (94.9-98.5) | - | 0.93 |
| CRP (≥5 mg/L)            | 6.56 (4.14-10.42) | 0 (0-71) | 6.56 (4.14-10.42) | 0.8 | 37 (26-50) | 95 (92-97) | 12.8 (8.0-20.0) | 97.8 (96.2-98.7) | - | 0.59 |
| CXR (abnormal)           | 3.60 (2.33-5.56) | 23 (0-65) | 3.60 (2.33-5.56) | 0.91 | 37 (28-48) | 98 (96-98) | 8.3 (5.0-13.5) | 97.5 (95.0-98.7) | 0.25 | 0.11 |
| CXR (suggests tuberculosis) | 6.51 (3.79-11.16) | 52 (0-78) | 6.50 (3.82-11.06) | 0.82 | 22 (13-33) | 98 (98-99) | 15.3 (10.6-21.7) | 97.1 (95.2-98.3) | 0.13 | 0.12 |
| Cough (any)              | 3.16 (2.51-3.99) | 13 (0-47) | 3.16 (2.51-3.99) | 0.94 | 26 (20-34) | 98 (97-98) | 10.1 (8.1-12.4) | 96.9 (95.7-97.8) | 0.52 | 0.02 |
| Cough (>2 weeks)         | 3.45 (2.48-4.81) | 29 (0-60) | 3.45 (2.48-4.81) | 0.98 | 15 (10-22) | 96 (94-97) | 13.0 (10.2-16.4) | 96.1 (94.6-97.3) | 0.57 | 0.01 |
| Hb (<10 g/dL)            | 1.99 (1.29-3.07) | 0 (0-64) | 1.99 (1.29-3.07) | 0.99 | 16 (12-22) | 92 (86-95) | 6.7 (3.2-13.5) | 96.1 (92.7-98.0) | 0.31 | 0.74 |
| Hb (<8 g/dL)             | 2.87 (1.40-5.89) | 0 (0-30) | 3.48 (1.76-6.85) | 0.51 | 4 (2-6) | 86 (75-92) | 7.4 (2.7-18.6) | 95.9 (92.2-97.9) | 0.45 | 0.59 |
| BMI (<18.5 kg/m²)        | 2.86 (2.17-3.75) | 0 (0-0) | 2.90 (2.21-3.81) | 0.55 | 9 (6-13) | 95 (93-96) | 11.3 (7.4-16.8) | 95.7 (94.0-96.9) | 0.47 | 0.72 |
| Lymphadenopathy          | 4.02 (2.26-7.16) | 0 (0-0) | 4.02 (2.26-7.16) | 0.73 | 11 (4-29) | 97 (96-98) | 12.5 (4.3-31.3) | 96.2 (92.1-98.2) | 0.69 | 0.55 |
| W4SS with CRP (>10 mg/L) | 1.66 (1.01-2.72) | 0 (0-74) | 1.42 (0.87-2.31) | 0.17 | 66 (40-85) | 99 (98-99) | 7.3 (4.4-11.9) | 96.0 (91.8-98.1) | - | 0.98 |
| W4SS with CXR (abnormal) | 3.56 (1.94-6.54) | 19 (0-62) | 4.02 (1.85-8.71) | 0.33 | 73 (58-84) | 99 (98-99) | 6.2 (3.9-9.9) | 98.4 (96.2-99.4) | 0.62 | 0.13 |
| W4SS then CRP (>5 mg/L)  | 7.56 (3.48-16.40) | 57 (0-84) | 5.24 (2.61-10.50) | 0.52 | 22 (10-43) | 96 (93-98) | 15.0 (8.9-24.2) | 97.7 (95.7-98.8) | - | 0.81 |
| W4SS then Xpert*         | 128.84 (74.31-223.38) | 10 (0-50) | 149.81 (83.48-268.82) | 0.55 | 3 (2-5) | 83 (72-90) | 82.5 (67.5-91.5) | 97.1 (95.3-98.2) | 0.05 | 0.09 |
| Xpert alone*             | 145.18 (78.32-269.13) | 36 (0-68) | 151.58 (83.62-274.78) | 0.78 | 4 (3-6) | 78 (62-87) | 77.0 (66.0-85.2) | 97.9 (96.0-98.9) | 0.02 | 0.03 |

†††Calculated using meta-analysis of proportions. We used a generalized linear mixed model with log transformation in preference to protocol specified DerSimonian and Laird random effects model for proportions with variance stabilization by applying the Freeman-Tukey double arcsine transformation

††Pooled using a trivariate generalized linear mixed model that jointly models diagnostic test prevalence and predictive values

*Estimates for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result)

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, GLMM = generalized linear mixed model, Hb = haemoglobin, NPV = negative predictive value, PPV = positive predictive value, W4SS = WHO four-symptom screen

For the meta-regressions, the outcome variable was the diagnostic odds ratio

Table S9E - Additional diagnostic accuracy estimates in participants with a CD4 cell count >200 cells/µL
Table S9F - Additional diagnostic accuracy estimates in pregnant participants

| Test                          | Univariate diagnostic odds ratio | Positive screen (%)†† | Trivariate GLMM††† | Reference standard | Prevalence |
|-------------------------------|---------------------------------|-----------------------|-------------------|--------------------|------------|
|                               | Estimate (95% CI) | I² (95% CI) | Trim-and-fill estimate (95% CI) | Egger’s test (p-value) | Estimate (95% CI) | I² (95% CI) | PPV (95% CI) | NPV (95% CI) | P-value | P-value |
| W4SS                          | 2.22 (1.23-4.00) | 0 (0-0) | 2.27 (1.27-4.04) | 0.89 | 43 (26-62) | 94 (90-96) | 5.8 (3.4-9.8) | 98.7 (92.8-99.8) | 0.86 | 0.88 |
| CRP (>=10 mg/L)#              | -                 | -         | -                  | -              | -            | -            | -             | -            | -     | -     |
| CRP (>=8 mg/L)#               | -                 | -         | -                  | -              | -            | -            | -             | -            | -     | -     |
| CRP (>=5 mg/L)#               | -                 | -         | -                  | -              | -            | -            | -             | -            | -     | -     |
| CXR (abnormal)                | 6.60 (0.19-225.79) | -         | -                  | -              | 38 (12-72) | -            | 33.3 (1.7-79.2) | 100.0 (56.6-100.0) | -     | -     |
| CXR (suggests tuberculosis)   | 39.00 (0.53-2883.60) | -         | -                  | -              | 14 (2-58) | -            | 100.0 (5.1-100) | 100.0 (61.0-100) | -     | -     |
| Cough (any)                   | 4.05 (2.15-7.61) | 0 (0-0) | 3.73 (2.03-6.85) | 0.18 | 20 (13-32) | 90 (82-94) | 10.0 (5.5-17.5) | 98.6 (96.1-99.5) | 0.79 | 0.57 |
| Cough (>=2 weeks)             | 7.25 (3.68-14.27) | 0 (0-0) | 6.89 (3.55-13.39) | 0.64 | 9 (5-16) | 82 (67-91) | 17.0 (9.0-29.8) | 98.0 (95.6-99.1) | 0.9  | 0.96 |
| Hb (<10 g/dL)                 | 1.33 (0.57-3.09) | 0 (0-85) | 1.33 (0.57-3.09) | 0.57 | 26 (16-40) | 78 (47-91) | 3.1 (1.5-6.3) | 98.2 (89.9-99.7) | 0.24 | 0.51 |
| Hb (>=8 g/dL)##               | 1.98 (0.25-15.58) | 0 (0-83) | 0.69 (0.12-4.11) | 0.02 | 2 (1-3) | 6 (0-80) | -             | -            | 0.51 | 0.29 |
| BMI (>=18.5 kg/m²)            | 5.68 (1.39-23.17) | 0 (0-69) | 5.68 (1.39-23.17) | 0.85 | 4 (2-6) | 32 (0-71) | 1.3 (0.0-93.6) | 97.5 (95.3-98.7) | 0.96 | 0.76 |
| Lymphadenopathy##             | -                 | -         | -                  | -              | -            | -            | -             | -            | -     | -     |
| W4SS with CRP (>=10 mg/L)#    | -                 | -         | -                  | -              | -            | -            | -             | -            | -     | -     |
| W4SS with CXR (abnormal)      | 3.86 (0.12-126.73) | -         | -                  | -              | 50 (20-80) | -            | 25.0 (1.3-69.9) | 100.0 (51.0-100) | -     | -     |
| W4SS then CRP (>=5 mg/L)#     | -                 | -         | -                  | -              | -            | -            | -             | -            | -     | -     |
| W4SS then Xpert*              | 165.04 (24.50-1111.61) | 0 (0-6) | 165.04 (24.50-1111.61) | 0.12 | 1 (0-2) | 0 (0-29) | 100.0 (0.0-100.0) | 98.1 (96.5-99.0) | -     | 0.67 |
| Xpert alone*                  | 141.49 (31.79-629.82) | 0 (0-0) | 158.18 (39.84-627.97) | 0.64 | 2 (1-4) | 0 (0-76) | 73.4 (40.5-91.8) | 98.5 (97.0-99.3) | -     | 0.66 |

†For the meta-regressions, the outcome variable was the diagnostic odds ratio
††Calculated using meta-analysis of proportions. We used a generalized linear mixed model with logit transformation in preference to protocol specified DerSimonian and Laird random effects model for proportions with variance stabilization by applying the Freeman-Tukey double arcsine transformation
†††Pooled using a trivariate generalized linear mixed model that jointly models diagnostic test prevalence and predictive values
#Insufficient data to perform meta-analysis
##Trivariate random-effects model did not converge
*Estimates for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result)
Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, GLMM = generalized linear mixed model, Hb = haemoglobin, NPV = negative predictive value, PPV = positive predictive value, W4SS = WHO four-symptom screen
### Table S10A - Yield of different screening and diagnostic algorithms at different prevalences when screening a population of 1000 participants

| Test                                      | Total TB | TP+FP† | TP  | FP  | TN  | FN  | PPV | NPV | Outcome of screening§ | Outcome of screening then diagnosis§ |
|-------------------------------------------|----------|--------|-----|-----|-----|-----|-----|-----|------------------------|--------------------------------------|
| **1% prevalence**                         |          |        |     |     |     |     |     |     |                        |                                      |
| W4SS                                      | 10       | 582    | 8   | 574 | 416 | 2   | 1.4 | 99.6 | -                      | -                                    |
| CRP (≥10 mg/L)                            | 10       | 265    | 8   | 257 | 733 | 2   | 2.9 | 99.7 | -                      | -                                    |
| CRP (≥8 mg/L)                             | 10       | 305    | 8   | 297 | 693 | 2   | 2.7 | 99.7 | -                      | -                                    |
| CRP (≥5 mg/L)                             | 10       | 405    | 9   | 396 | 594 | 1   | 2.1 | 99.8 | -                      | -                                    |
| CXR (abnormal)                            | 10       | 383    | 7   | 376 | 614 | 3   | 1.9 | 99.5 | -                      | -                                    |
| CXR (suggests tuberculosis)               | 10       | 224    | 6   | 218 | 772 | 4   | 2.8 | 99.5 | -                      | -                                    |
| Cough (any)                               | 10       | 283    | 6   | 277 | 713 | 4   | 2   | 99.4 | -                      | -                                    |
| Cough (≥2 weeks)                          | 10       | 162    | 4   | 158 | 832 | 6   | 2.3 | 99.3 | -                      | -                                    |
| Hb (≥10 g/dL)                             | 10       | 202    | 4   | 198 | 792 | 6   | 2.1 | 99.3 | -                      | -                                    |
| Hb (≥8 g/dL)                              | 10       | 41     | 1   | 40  | 950 | 9   | 2.9 | 99.1 | -                      | -                                    |
| BMI (≥18.5 kg/m²)                         | 10       | 112    | 3   | 109 | 881 | 7   | 2.6 | 99.2 | -                      | -                                    |
| Lymphadenopathy                           | 10       | 102    | 3   | 99  | 891 | 7   | 3   | 99.2 | -                      | -                                    |
| W4SS with CRP (≥10 mg/L)†                 | 10       | 692    | 9   | 683 | 307 | 1   | 1.3 | 99.6 | -                      | -                                    |
| W4SS with CXR (abnormal)§                 | 10       | 801    | 9   | 792 | 198 | 1   | 1.2 | 99.7 | -                      | -                                    |
| W4SS then CRP (≥5 mg/L)§                  | 10       | 255    | 7   | 248 | 742 | 3   | 2.8 | 99.6 | -                      | -                                    |
| Xpert alone*†                              | 10       | -      | -   | -   | -   | -   | -   | 7   | 980                    | 10 3 40.7 99.7 143                   |
| WHO screen then Xpert*†                   | 10       | -      | -   | -   | -   | -   | -   | 6   | 980                    | 10 4 36.9 99.6 167                   |
| **5% prevalence**                         |          |        |     |     |     |     |     |     |                        |                                      |
| W4SS                                      | 50       | 592    | 41  | 551 | 399 | 9   | 6.9 | 97.8 | -                      | -                                    |
| CRP (≥10 mg/L)                            | 50       | 285    | 38  | 247 | 703 | 12  | 13.5| 98.4 | -                      | -                                    |
| CRP (≥8 mg/L)                             | 50       | 325    | 40  | 285 | 665 | 10  | 12.4| 98.6 | -                      | -                                    |
| CRP (≥5 mg/L)                             | 50       | 424    | 44  | 380 | 570 | 6   | 10.3| 98.9 | -                      | -                                    |
| CXR (abnormal)                            | 50       | 397    | 36  | 361 | 589 | 14  | 9.1 | 97.7 | -                      | -                                    |
| CXR (suggests tuberculosis)               | 50       | 241    | 32  | 209 | 741 | 18  | 13.1| 97.6 | -                      | -                                    |
| Cough (any)                               | 50       | 294    | 28  | 266 | 684 | 22  | 9.5 | 96.9 | -                      | -                                    |
| Cough (≥2 weeks)                          | 50       | 171    | 19  | 152 | 798 | 31  | 11.1| 96.3 | -                      | -                                    |
| Hb (≥10 g/dL)                             | 50       | 212    | 22  | 190 | 760 | 28  | 10.2| 96.4 | -                      | -                                    |
| Hb (≥8 g/dL)                              | 50       | 44     | 6   | 38  | 912 | 44  | 13.6| 95.4 | -                      | -                                    |
| BMI (≥18.5 kg/m²)                         | 50       | 118    | 14  | 104 | 846 | 36  | 12.2| 96   | -                      | -                                    |
| Lymphadenopathy                           | 50       | 111    | 16  | 95  | 855 | 34  | 14  | 96.1 | -                      | -                                    |
| W4SS with CRP (≥10 mg/L)§                 | 50       | 700    | 44  | 656 | 294 | 6   | 6.3 | 98   | -                      | -                                    |
| W4SS with CXR (abnormal)§                 | 50       | 807    | 47  | 760 | 190 | 3   | 5.8 | 98.4 | -                      | -                                    |
| W4SS then CRP (≥5 mg/L)§                  | 50       | 273    | 35  | 238 | 712 | 15  | 12.8| 97.9 | -                      | -                                    |
| Xpert alone*†                              | 50       | -      | -   | -   | -   | -   | -   | 34  | 940                    | 10 16 78.2 98.3 29                   |
| WHO screen then Xpert*†                   | 50       | -      | -   | -   | -   | -   | -   | 29  | 940                    | 10 21 75.3 97.8 34                   |

‡ TP+FP is the sum of true positives and false positives.
§ Outcome of screening is calculated as (TP+TN)/Total TB.
¶ TP is the number of true positives.
† TN is the number of true negatives.
NNS is the number of negative outcomes.

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### Test Results

| Test                          | Total TB | TP+FP† | TP   | FP   | TN   | FN   | PPV  | NPV  | Outcome of screening§  | Outcome of screening then diagnosis§ |
|------------------------------|----------|--------|------|------|------|------|------|------|-----------------------|--------------------------------------|
|                              |          |        |      |      |      |      |      |      |                       |                                       |
| **10% prevalence**           |          |        |      |      |      |      |      |      |                       |                                       |
| W4SS                         | 100      | 604    | 82   | 522  | 378  | 18   | 13.6 | 95.5 |                       |                                       |
| CRP (≥10 mg/L)               | 100      | 311    | 77   | 234  | 666  | 23   | 24.8 | 96.7 |                       |                                       |
| CRP (≥8 mg/L)                | 100      | 351    | 81   | 270  | 630  | 19   | 23.1 | 97.1 |                       |                                       |
| CRP (≥5 mg/L)                | 100      | 447    | 87   | 360  | 540  | 13   | 19.5 | 97.6 |                       |                                       |
| CXR (abnormal)               | 100      | 414    | 72   | 342  | 558  | 28   | 17.4 | 95.2 |                       |                                       |
| CXR (suggests tuberculosis)  | 100      | 261    | 63   | 198  | 702  | 37   | 24.1 | 95  |                       |                                       |
| Cough (any)                  | 100      | 308    | 56   | 252  | 648  | 44   | 18.2 | 93.6 |                       |                                       |
| Cough (≥2 weeks)             | 100      | 182    | 38   | 144  | 756  | 62   | 20.9 | 92.4 |                       |                                       |
| Hb (<10 g/dL)                | 100      | 223    | 43   | 180  | 720  | 57   | 19.3 | 92.7 |                       |                                       |
| Hb (<8 g/dL)                 | 100      | 48     | 12   | 36   | 864  | 88   | 25   | 90.8 |                       |                                       |
| BMI (<18.5 kg/m²)            | 100      | 128    | 29   | 99   | 801  | 71   | 22.7 | 91.9 |                       |                                       |
| Lymphadenopathy              | 100      | 121    | 31   | 90   | 810  | 69   | 25.6 | 92.2 |                       |                                       |
| W4SS with CRP (≥10 mg/L)¶    | 100      | 709    | 88   | 621  | 279  | 12   | 12.4 | 95.9 |                       |                                       |
| W4SS with CXR (abnormal)¶    | 100      | 814    | 94   | 720  | 180  | 6    | 11.5 | 96.8 |                       |                                       |
| W4SS then CRP (≥5 mg/L)¶     | 100      | 295    | 70   | 225  | 675  | 30   | 23.7 | 95.7 |                       |                                       |
| Xpert alone†                 | 100      | -      | -    | -    | -    | -    | 68   | 891 | 9 32 88.3 96.5 15     |                                       |
| WHO screen then Xpert†       | 100      | -      | -    | -    | -    | -    | 58   | 891 | 9 42 86.6 95.5 17     |                                       |
| **20% prevalence**           |          |        |      |      |      |      |      |      |                       |                                       |
| W4SS                         | 200      | 628    | 164  | 464  | 336  | 36   | 26.1 | 90.3 |                       |                                       |
| CRP (≥10 mg/L)               | 200      | 362    | 154  | 208  | 592  | 46   | 42.5 | 92.8 |                       |                                       |
| CRP (≥8 mg/L)                | 200      | 402    | 162  | 240  | 560  | 38   | 40.3 | 93.6 |                       |                                       |
| CRP (≥5 mg/L)                | 200      | 494    | 174  | 320  | 480  | 26   | 35.2 | 94.9 |                       |                                       |
| CXR (abnormal)               | 200      | 448    | 144  | 304  | 496  | 56   | 32.1 | 89.9 |                       |                                       |
| CXR (suggests tuberculosis)  | 200      | 302    | 126  | 176  | 624  | 74   | 41.7 | 89.4 |                       |                                       |
| Cough (any)                  | 200      | 336    | 112  | 224  | 576  | 88   | 33.3 | 86.7 |                       |                                       |
| Cough (≥2 weeks)             | 200      | 204    | 76   | 128  | 672  | 124  | 37.3 | 84.4 |                       |                                       |
| Hb (<10 g/dL)                | 200      | 246    | 86   | 160  | 640  | 114  | 35   | 84.9 |                       |                                       |
| Hb (<8 g/dL)                 | 200      | 56     | 24   | 32   | 768  | 176  | 42.9 | 81.4 |                       |                                       |
| BMI (<18.5 kg/m²)            | 200      | 146    | 58   | 88   | 712  | 142  | 39.7 | 83.4 |                       |                                       |
| Lymphadenopathy              | 200      | 142    | 62   | 80   | 720  | 138  | 43.7 | 83.9 |                       |                                       |
| W4SS with CRP (≥10 mg/L)¶    | 200      | 728    | 176  | 552  | 248  | 24   | 24.2 | 91.2 |                       |                                       |
| W4SS with CXR (abnormal)¶    | 200      | 828    | 188  | 640  | 160  | 12   | 22.7 | 93  |                       |                                       |
| W4SS then CRP (≥5 mg/L)¶     | 200      | 340    | 140  | 200  | 600  | 60   | 41.2 | 90.9 |                       |                                       |
| Xpert alone†                 | 200      | -      | -    | -    | -    | -    | 136  | 792 | 8 64 94.4 92.5 7      |                                       |
| WHO screen then Xpert†       | 200      | -      | -    | -    | -    | -    | 116  | 792 | 8 84 93.5 90.4 9      |                                       |

§Estimated using the pooled point estimates for sensitivity and specificity for different tests/strategies
†TP+FP is the number of participants who screen positive (i.e. the number who need subsequent Xpert testing)
### Outcome of screening

| Test | Total TB | TP+FP‡ | TP | FP | TN | FN | PPV | NPV |
|------|----------|--------|----|----|----|----|------|------|
|      |          |        |    |    |    |    |      |      |

### Outcome of screening then diagnosis

| Test | Total TB | TP+FP‡ | TP | FP | TN | FN | PPV | NPV |
|------|----------|--------|----|----|----|----|------|------|
|      |          |        |    |    |    |    |      |      |

‡For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive.

*Accuracy measures for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result)

†The test accuracy of Xpert in those who were W4SS positive was: 12 studies; 4558 participants; sensitivity 0.74 (0.65-0.81), specificity 0.98 (0.97-0.99).

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, FN= false negative, FP = false positive, Hb = haemoglobin, NNS = number needed to screen, NPV = negative predictive value, PPV = positive predictive value, TB = tuberculosis, TN = true negative, TP = true positive, W4SS = WHO four-symptom screen.
### Table S10B - Yield of different screening and diagnostic algorithms at different prevalences when screening a population of 1000 outpatients (on ART)

| Test                                    | Total TB | Outcome of screening§ | Outcome of screening then diagnosis§ |
|------------------------------------------|----------|-----------------------|-------------------------------------|
|                                          |          | TP+FP‡                | TP | FP | TN | FN | PPV | NPV | TP | TN | FP | FN | PPV | NPV | NNS |
| **1% prevalence**                        |          |                       |    |    |    |    |     |     |    |    |    |    |     |     |    |
| W4SS                                     | 10       | 292                   | 5  | 287 | 703 | 5  | 1.8 | 99.3| -  |    |    |    |     |     |    |
| CRP (>=10 mg/L)                          | 10       | 101                   | 2  | 99  | 891 | 8  | 2   | 99.1| -  |    |    |    |     |     |    |
| CRP (>=5 mg/L)                           | 10       | 113                   | 4  | 109 | 881 | 6  | 3.5 | 99.3| -  |    |    |    |     |     |    |
| CRP (>=10 mg/L)                          | 10       | 202                   | 4  | 198 | 792 | 6  | 2   | 99.2| -  |    |    |    |     |     |    |
| CXR (abnormal)                           | 10       | 373                   | 7  | 366 | 624 | 3  | 2   | 99.6| -  |    |    |    |     |     |    |
| CXR (suggests tuberculosis)              | 10       | 225                   | 7  | 218 | 772 | 3  | 3.1 | 99.6| -  |    |    |    |     |     |    |
| Cough (any)                              | 10       | 172                   | 4  | 168 | 822 | 6  | 2.3 | 99.3| -  |    |    |    |     |     |    |
| Hb (<10 g/dL)                            | 10       | 184                   | 6  | 178 | 812 | 4  | 3   | 99.4| -  |    |    |    |     |     |    |
| Hb (<8 g/dL)                             | 10       | 61                    | 2  | 59  | 931 | 8  | 2.9 | 99.1| -  |    |    |    |     |     |    |
| BMI (<=18.5 kg/m²)                       | 10       | 71                    | 2  | 69  | 921 | 8  | 2.3 | 99.1| -  |    |    |    |     |     |    |
| Lymphadenopathy                          | 10       | 71                    | 2  | 69  | 921 | 8  | 3.1 | 99.2| -  |    |    |    |     |     |    |
| W4SS with CRP (>=10 mg/L)‡              | 10       | 672                   | 9  | 663 | 327 | 1  | 1.3 | 99.7| -  |    |    |    |     |     |    |
| W4SS with CXR (abnormal)¶               | 10       | 41                    | 1  | 40  | 950 | 9  | 2   | 99  | -  |    |    |    |     |     |    |
| W4SS then CRP (>=5 mg/L)¶               | 10       | -                     | -  | -   | -   | -  | -   | -   | -  |    |    |    |     |     |    |
| Xpert alone*†                            | 10       | -                     | -  | -   | -   | -  | -   | -   | 5  | 980| 10 | 5  | 34.9| 99.5| 200 |
| WHO screen then Xpert*†                  | 10       | -                     | -  | -   | -   | -  | -   | -   | 4  | 990| 0  | 6  | 100 | 99.4| 250 |

| **5% prevalence**                        |          |                       |    |    |    |    |     |     |    |    |    |    |     |     |    |
| W4SS                                     | 50       | 302                   | 26 | 276 | 674 | 24 | 8.8 | 96.6| -  |    |    |    |     |     |    |
| CRP (>=10 mg/L)                          | 50       | 105                   | 10 | 95  | 855 | 40 | 9.5 | 95.5| -  |    |    |    |     |     |    |
| CRP (>=5 mg/L)                           | 50       | 124                   | 20 | 104 | 846 | 30 | 16.1| 96.6| -  |    |    |    |     |     |    |
| CRP (>=5 mg/L)                           | 50       | 210                   | 20 | 190 | 760 | 30 | 9.5 | 96.2| -  |    |    |    |     |     |    |
| CXR (abnormal)                           | 50       | 388                   | 36 | 352 | 598 | 14 | 9.4 | 97.8| -  |    |    |    |     |     |    |
| CXR (suggests tuberculosis)              | 50       | 244                   | 35 | 209 | 741 | 15 | 14.3| 98  | -  |    |    |    |     |     |    |
| Cough (any)                              | 50       | 181                   | 20 | 161 | 789 | 30 | 11  | 96.3| -  |    |    |    |     |     |    |
| Hb (<10 g/dL)                            | 50       | 199                   | 28 | 171 | 779 | 22 | 13.9| 97.2| -  |    |    |    |     |     |    |
| Hb (<8 g/dL)                             | 50       | 66                    | 9  | 57  | 893 | 41 | 13.6| 95.6| -  |    |    |    |     |     |    |
| BMI (<=18.5 kg/m²)                       | 50       | 74                    | 8  | 66  | 884 | 42 | 10.7| 95.5| -  |    |    |    |     |     |    |
| Lymphadenopathy                          | 50       | 77                    | 11 | 66  | 884 | 39 | 14.2| 95.8| -  |    |    |    |     |     |    |
| W4SS with CRP (>=10 mg/L)‡              | 50       | 200                   | 10 | 190 | 760 | 40 | 5   | 95  | -  |    |    |    |     |     |    |
| W4SS with CXR (abnormal)¶               | 50       | 680                   | 44 | 636 | 314 | 6  | 6.5 | 98.3| -  |    |    |    |     |     |    |
| W4SS then CRP (>=5 mg/L)¶               | 50       | 42                    | 4  | 38  | 912 | 46 | 9.5 | 95.2| -  |    |    |    |     |     |    |
| Xpert alone*†                            | 50       | -                     | -  | -   | -   | -  | -   | -   | 26 | 940| 10 | 24 | 73.6| 97.6| 38  |
| WHO screen then Xpert*†                  | 50       | -                     | -  | -   | -   | -  | -   | -   | 18 | 950| 0  | 32 | 100 | 96.8| 56  |

| **10% prevalence**                       |          |                       |    |    |    |    |     |     |    |    |    |    |     |     |    |

32
| Test                        | Total TB | TP+FP† | TP | FP | TN | FN | PPV | NPV | TP | TN | FP | FN | PPV | NPV | NNS |
|----------------------------|----------|--------|----|----|----|----|-----|-----|----|----|----|----|-----|-----|-----|
| W4SS                       | 100      | 314    | 53 | 261| 639| 47 | 16.9| 93.1| -  | -  | -  | -  | -   | -   | -   |
| CRP (>=10 mg/L)             | 100      | 110    | 20 | 90 | 810| 80 | 18.2| 91  | -  | -  | -  | -  | -   | -   | -   |
| CRP (>=8 mg/L)              | 100      | 139    | 49 | 99 | 801| 60 | 28.8| 93  | -  | -  | -  | -  | -   | -   | -   |
| CRP (>=5 mg/L)              | 100      | 220    | 40 | 180| 720| 60 | 18.2| 92.3| -  | -  | -  | -  | -   | -   | -   |
| CXR (abnormal)              | 100      | 406    | 73 | 333| 567| 27 | 18  | 95.5| -  | -  | -  | -  | -   | -   | -   |
| CXR (suggests tuberculosis)| 100      | 268    | 70 | 198| 702| 30 | 26.1| 95.9| -  | -  | -  | -  | -   | -   | -   |
| Cough (any)                 | 100      | 193    | 40 | 153| 747| 60 | 20.7| 92.6| -  | -  | -  | -  | -   | -   | -   |
| Cough (>2 weeks)            | 100      | 82     | 19 | 63 | 837| 81 | 23.2| 91.2| -  | -  | -  | -  | -   | -   | -   |
| Hb (<10 g/dL)               | 100      | 217    | 55 | 162| 738| 45 | 25.3| 94.3| -  | -  | -  | -  | -   | -   | -   |
| Hb (<8 g/dL)                | 100      | 72     | 18 | 54 | 846| 82 | 25  | 91.2| -  | -  | -  | -  | -   | -   | -   |
| BMI (<18.5 kg/m²)           | 100      | 79     | 16 | 63 | 837| 84 | 20.3| 90.9| -  | -  | -  | -  | -   | -   | -   |
| Lymphadenopathy             | 100      | 85     | 22 | 63 | 837| 78 | 25.9| 91.5| -  | -  | -  | -  | -   | -   | -   |
| W4SS with CRP (>=10 mg/L)‡  | 100      | 200    | 20 | 180| 720| 80 | 10  | 90  | -  | -  | -  | -  | -   | -   | -   |
| W4SS with CXR (abnormal)‡   | 100      | 692    | 89 | 603| 297| 11 | 12.9| 96.4| -  | -  | -  | -  | -   | -   | -   |
| W4SS then CRP (>=5 mg/L)‡   | 100      | 44     | 8  | 36 | 864| 92 | 18.2| 90.4| -  | -  | -  | -  | -   | -   | -   |
| Xpert alone*†               | 100      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |
| WHO screen then Xpert*†     | 100      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |

20% prevalence

| Test                        | Total TB | TP+FP† | TP | FP | TN | FN | PPV | NPV | TP | TN | FP | FN | PPV | NPV | NNS |
|----------------------------|----------|--------|----|----|----|----|-----|-----|----|----|----|----|-----|-----|-----|
| W4SS                       | 200      | 338    | 106| 232| 568| 94 | 31.4| 85.8| -  | -  | -  | -  | -   | -   | -   |
| CRP (>=10 mg/L)             | 200      | 120    | 40 | 80 | 720| 160| 33.3| 81.8| -  | -  | -  | -  | -   | -   | -   |
| CRP (>=8 mg/L)              | 200      | 168    | 80 | 88 | 712| 120| 47.6| 85.6| -  | -  | -  | -  | -   | -   | -   |
| CRP (>=5 mg/L)              | 200      | 240    | 80 | 160| 640| 120| 33.3| 84.2| -  | -  | -  | -  | -   | -   | -   |
| CXR (abnormal)              | 200      | 442    | 146| 296| 504| 54 | 33  | 90.3| -  | -  | -  | -  | -   | -   | -   |
| CXR (suggests tuberculosis)| 200      | 316    | 140| 176| 624| 60 | 44.3| 91.2| -  | -  | -  | -  | -   | -   | -   |
| Cough (any)                 | 200      | 216    | 80 | 136| 664| 120| 37  | 84.7| -  | -  | -  | -  | -   | -   | -   |
| Cough (>2 weeks)            | 200      | 94     | 38 | 56 | 744| 162| 40.4| 82.1| -  | -  | -  | -  | -   | -   | -   |
| Hb (<10 g/dL)               | 200      | 254    | 110| 144| 656| 90 | 43.3| 87.9| -  | -  | -  | -  | -   | -   | -   |
| Hb (<8 g/dL)                | 200      | 84     | 36 | 48 | 752| 164| 42.9| 82.1| -  | -  | -  | -  | -   | -   | -   |
| BMI (<18.5 kg/m²)           | 200      | 88     | 32 | 56 | 744| 168| 36.4| 81.6| -  | -  | -  | -  | -   | -   | -   |
| Lymphadenopathy             | 200      | 100    | 44 | 56 | 744| 156| 44  | 82.7| -  | -  | -  | -  | -   | -   | -   |
| W4SS with CRP (>=10 mg/L)‡  | 200      | 200    | 40 | 160| 640| 160| 20  | 80  | -  | -  | -  | -  | -   | -   | -   |
| W4SS with CXR (abnormal)‡   | 200      | 714    | 178| 536| 264| 22 | 24.9| 92.3| -  | -  | -  | -  | -   | -   | -   |
| W4SS then CRP (>=5 mg/L)‡   | 200      | 48     | 16 | 32 | 768| 184| 33.3| 80.7| -  | -  | -  | -  | -   | -   | -   |
| Xpert alone*†               | 200      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |
| WHO screen then Xpert*†     | 200      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |

§Estimated using the pooled point estimates for sensitivity and specificity for different tests/strategies
†TP+FP is the number of participants who screen positive (i.e. the number who need subsequent Xpert testing)
‡For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive
*Accuracy measures for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result)
**Outcome of screening§**

| Test | Total TB | TP+FP‡ | TP | FP | TN | FN | PPV | NPV |
|------|----------|--------|----|----|----|----|-----|-----|

**Outcome of screening then diagnosis§**

| TP | TN | FP | FN | PPV | NPV | NNS |
|----|----|----|----|-----|-----|-----|

†The test accuracy of Xpert in those who were W4SS positive was: 4 studies; 564 participants; sensitivity 0.91 (0.42-0.99), specificity 0.98 (0.91-1).

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, FN = false negative, FP = false positive, Hb = haemoglobin, NNS = number needed to screen, NPV = negative predictive value, PPV = positive predictive value, TB = tuberculosis, TN = true negative, TP = true positive, W4SS = WHO four-symptom screen
### Table S10C - Yield of different screening and diagnostic algorithms at different prevalences when screening a population of 1000 outpatients (not on ART)

| Test                                      | Total TB | TP+FP‡ | TP  | FP  | TN  | FN  | PPV | NPV | 1% prevalence | Outcome of screening then diagnosis§ |
|-------------------------------------------|----------|--------|-----|-----|-----|-----|-----|-----|---------------|--------------------------------------|
| W4SS                                      | 10       | 632    | 8   | 624 | 366 | 2   | 1.3 | 99.6 | -             | -                                    |
| CRP (≥10 mg/L)                            | 10       | 335    | 8   | 327 | 663 | 2   | 2.5 | 99.7 | -             | -                                    |
| CRP (≥8 mg/L)                             | 10       | 374    | 8   | 366 | 624 | 2   | 2.3 | 99.8 | -             | -                                    |
| CRP (≥5 mg/L)                             | 10       | 474    | 9   | 465 | 525 | 1   | 1.9 | 99.9 | -             | -                                    |
| CXR (abnormal)                            | 10       | 383    | 7   | 376 | 614 | 3   | 1.9 | 99.5 | -             | -                                    |
| CXR (suggests tuberculosis)               | 10       | 214    | 6   | 208 | 782 | 4   | 2.9 | 99.5 | -             | -                                    |
| Cough (any)                               | 10       | 303    | 6   | 297 | 693 | 4   | 1.9 | 99.4 | -             | -                                    |
| Cough (≥2 weeks)                          | 10       | 182    | 4   | 178 | 812 | 6   | 2.4 | 99.3 | -             | -                                    |
| Hb (<10 g/dL)                             | 10       | 222    | 4   | 218 | 772 | 6   | 2   | 99.3 | -             | -                                    |
| Hb (<8 g/dL)                              | 10       | 41     | 1   | 40  | 950 | 9   | 2.7 | 99.1 | -             | -                                    |
| BMI (<18.5 kg/m²)                         | 10       | 132    | 3   | 129 | 861 | 7   | 2.4 | 99.2 | -             | -                                    |
| Lymphadenopathy                           | 10       | 92     | 3   | 89  | 901 | 7   | 3.3 | 99.2 | -             | -                                    |
| W4SS with CRP (≥10 mg/L)§                 | 10       | 801    | 9   | 792 | 198 | 1   | 1.2 | 99.7 | -             | -                                    |
| W4SS with CXR (abnormal)§                 | 10       | 822    | 10  | 812 | 178 | 0   | 1.2 | 99.7 | -             | -                                    |
| W4SS then CRP (≥5 mg/L)¶                  | 10       | 364    | 8   | 356 | 634 | 2   | 2.3 | 99.7 | -             | -                                    |
| Xpert alone†                              | 10       | -      | -   | -   | -   | -   | -   | -   | 7             | 980 10 3 42.8 99.7 143               |
| WHO screen then Xpert†                    | 10       | -      | -   | -   | -   | -   | -   | -   | 6             | 980 10 4 39.3 99.6 167               |

#### 5% prevalence

| Test                                      | Total TB | TP+FP‡ | TP  | FP  | TN  | FN  | PPV | NPV | 1% prevalence | Outcome of screening then diagnosis§ |
|-------------------------------------------|----------|--------|-----|-----|-----|-----|-----|-----|---------------|--------------------------------------|
| W4SS                                      | 50       | 640    | 42  | 598 | 352 | 8   | 6.6 | 97.9 | -             | -                                    |
| CRP (≥10 mg/L)                            | 50       | 355    | 42  | 313 | 637 | 8   | 11.7| 98.7 | -             | -                                    |
| CRP (≥8 mg/L)                             | 50       | 394    | 42  | 352 | 598 | 8   | 10.8| 98.8 | -             | -                                    |
| CRP (≥5 mg/L)                             | 50       | 490    | 44  | 446 | 504 | 6   | 9.1 | 98.9 | -             | -                                    |
| CXR (abnormal)                            | 50       | 397    | 36  | 361 | 589 | 14  | 9   | 97.6 | -             | -                                    |
| CXR (suggests tuberculosis)               | 50       | 230    | 31  | 199 | 751 | 19  | 13.4| 97.5 | -             | -                                    |
| Cough (any)                               | 50       | 314    | 29  | 285 | 665 | 21  | 9.2 | 96.9 | -             | -                                    |
| Cough (≥2 weeks)                          | 50       | 193    | 22  | 171 | 779 | 28  | 11.2| 96.5 | -             | -                                    |
| Hb (<10 g/dL)                             | 50       | 231    | 22  | 209 | 741 | 28  | 9.5 | 96.4 | -             | -                                    |
| Hb (<8 g/dL)                              | 50       | 44     | 6   | 38  | 912 | 44  | 12.6| 95.3 | -             | -                                    |
| BMI (<18.5 kg/m²)                         | 50       | 140    | 16  | 124 | 826 | 34  | 11.2| 96  | -             | -                                    |
| Lymphadenopathy                           | 50       | 100    | 15  | 85  | 865 | 35  | 14.9| 96.1 | -             | -                                    |
| W4SS with CRP (≥10 mg/L)¶                 | 50       | 807    | 47  | 760 | 190 | 3   | 5.8 | 98.4 | -             | -                                    |
| W4SS with CXR (abnormal)¶                 | 50       | 827    | 48  | 779 | 171 | 2   | 5.7 | 98.6 | -             | -                                    |
| W4SS then CRP (≥5 mg/L)¶                  | 50       | 384    | 42  | 342 | 608 | 8   | 10.9| 98.7 | -             | -                                    |
| Xpert alone†                              | 50       | -      | -   | -   | -   | -   | -   | -   | 37            | 940 10 13 79.6 98.6 27               |
| WHO screen then Xpert†                    | 50       | -      | -   | -   | -   | -   | -   | -   | 32            | 940 10 18 77.1 98.1 31               |

#### 10% prevalence
| Test                      | Total TB | TP+FP‡ | TP  | FP  | TN  | FN  | PPV | NPV |
|--------------------------|----------|--------|-----|-----|-----|-----|-----|-----|
| W4SS                     | 100      | 652    | 85  | 567 | 333 | 15  | 13  | 95.7|
| CRP (>10 mg/L)           | 100      | 380    | 83  | 297 | 603 | 17  | 21.8| 97.3|
| CRP (>8 mg/L)            | 100      | 418    | 85  | 333 | 567 | 15  | 20.3| 97.4|
| CRP (>5 mg/L)            | 100      | 512    | 89  | 423 | 477 | 11  | 17.4| 97.7|
| CXR (abnormal)           | 100      | 413    | 71  | 342 | 558 | 29  | 17.2| 95.1|
| CXR (suggests tuberculosis) | 100    | 251    | 62  | 189 | 711 | 38  | 24.7| 94.9|
| Cough (any)              | 100      | 328    | 58  | 270 | 630 | 42  | 17.7| 93.8|
| Cough (>2 weeks)         | 100      | 205    | 43  | 162 | 738 | 57  | 21  | 92.8|
| Hb (<10 g/dL)            | 100      | 242    | 44  | 198 | 702 | 56  | 18.2| 92.6|
| Hb (<8 g/dL)             | 100      | 47     | 11  | 36  | 864 | 89  | 23.4| 90.7|
| BMI (<18.5 kg/m²)        | 100      | 148    | 31  | 117 | 783 | 69  | 20.9| 91.9|
| Lymphadenopathy          | 100      | 111    | 30  | 81  | 819 | 70  | 27  | 92.1|
| W4SS with CRP (>10 mg/L)¶ | 100  | 814    | 94  | 720 | 180 | 6   | 11.5| 96.8|
| W4SS with CXR (abnormal)¶ | 100 | 833    | 95  | 738 | 162 | 5   | 11.4| 97  |
| W4SS then CRP (>5 mg/L)¶ | 100   | 408    | 84  | 324 | 576 | 16  | 20.6| 97.3|
| Xpert alone†             | 100      | -      | -   | -   | -   | -   | -   | -   |
| WHO screen then Xpert†‡  | 100      | -      | -   | -   | -   | -   | -   | -   |

| Outcome of screening§    |         | TP     | TN  | FP  | FN  | PPV | NPV |     |
|--------------------------|---------|--------|-----|-----|-----|-----|-----|-----|
|                          |         | 20% prevalence |     |     |     |     |     |     |
| W4SS                     | 200     | 674    | 170 | 504 | 296 | 30  | 25.2| 90.8|
| CRP (>10 mg/L)           | 200     | 430    | 166 | 264 | 536 | 34  | 38.6| 94  |
| CRP (>8 mg/L)            | 200     | 466    | 170 | 296 | 504 | 30  | 36.5| 94.4|
| CRP (>5 mg/L)            | 200     | 554    | 178 | 376 | 424 | 22  | 32.1| 95.1|
| CXR (abnormal)           | 200     | 446    | 142 | 304 | 496 | 58  | 31.8| 89.5|
| CXR (suggests tuberculosis) | 200 | 292    | 124 | 168 | 632 | 76  | 42.5| 89.3|
| Cough (any)              | 200     | 356    | 116 | 240 | 560 | 84  | 32.6| 87  |
| Cough (>2 weeks)         | 200     | 230    | 86  | 144 | 656 | 114 | 37.4| 85.2|
| Hb (<10 g/dL)            | 200     | 264    | 88  | 176 | 624 | 112 | 33.3| 84.8|
| Hb (<8 g/dL)             | 200     | 54     | 22  | 32  | 768 | 178 | 40.7| 81.2|
| BMI (<18.5 kg/m²)        | 200     | 166    | 62  | 104 | 696 | 138 | 37.3| 83.5|
| Lymphadenopathy          | 200     | 132    | 60  | 72  | 728 | 140 | 45.5| 83.9|
| W4SS with CRP (>10 mg/L)¶ | 200  | 828    | 188 | 640 | 160 | 12  | 22.7| 93  |
| W4SS with CXR (abnormal)¶ | 200 | 846    | 190 | 656 | 144 | 10  | 22.5| 93.5|
| W4SS then CRP (>5 mg/L)¶ | 200   | 456    | 168 | 288 | 512 | 32  | 36.8| 94.1|
| Xpert alone†             | 200     | -      | -   | -   | -   | -   | 148 | 792 |
| WHO screen then Xpert†‡  | 200     | -      | -   | -   | -   | -   | 128 | 792 |

§Estimated using the pooled point estimates for sensitivity and specificity for different tests/strategies
‡TP+FP is the number of participants who screen positive (i.e. the number who need subsequent Xpert testing)
¶For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive
*Accuracy measures for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result)
| Test | Total TB | TP+FP ‡ | TP | FP | TN | FN | PPV | NPV | Test | Total TB | TP+FP ‡ | TP | FP | TN | FN | PPV | NPV | NNS |
|------|----------|----------|----|----|----|----|-----|-----|------|----------|----------|----|----|----|----|-----|-----|-----|

†The test accuracy of Xpert in those who were W4SS positive was: 10 studies; 3909 participants; sensitivity 0.76 (0.67-0.83), specificity 0.98 (0.97-0.99).

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, FN = false negative, FP = false positive, Hb = haemoglobin, NNS = number needed to screen, NPV = negative predictive value, PPV = positive predictive value, TB = tuberculosis, TN = true negative, TP = true positive, W4SS = WHO four-symptom screen
Table S10D - Yield of different screening and diagnostic algorithms at different prevalences when screening a population of 1000 participants with a CD4 cell count \( \leq 200 \text{ cells/\muL} \)

| Test                                | Total TB | TP+FP\* | TP | FP | TN | FN | PPV | NPV |
|-------------------------------------|----------|---------|----|----|----|----|-----|-----|
| 1% prevalence                       |          |         |    |    |    |    |     |     |
| W4SS                                | 10       | 680     | 44 | 636 | 314 | 6  | 6.4 | 98  |
| CRP (\(\geq 10 \text{ mg/L}\))     | 10       | 405     | 44 | 361 | 589 | 6  | 10.9| 99  |
| CRP (\(\geq 8 \text{ mg/L}\))      | 10       | 444     | 45 | 399 | 551 | 5  | 10.1| 99.1|
| CRP (\(\geq 5 \text{ mg/L}\))      | 10       | 540     | 46 | 494 | 456 | 4  | 8.5 | 99.1|
| CXR (abnormal)                      | 10       | 435     | 36 | 399 | 551 | 14 | 8.4 | 97.6|
| CXR (suggests tuberculosis)         | 10       | 279     | 32 | 247 | 703 | 18 | 11.5| 97.5|
| Cough (any)                         | 10       | 353     | 30 | 323 | 627 | 20 | 8.4 | 96.8|
| Cough (\(\geq 2 \text{ weeks}\))   | 10       | 230     | 21 | 209 | 741 | 29 | 9.1 | 96.2|
| Hb (\(< 10 \text{ g/dL}\))         | 10       | 274     | 27 | 247 | 703 | 23 | 9.9 | 96.8|
| Hb (\(< 8 \text{ g/dL}\))          | 10       | 54      | 7  | 47  | 903 | 43 | 12.8| 95.5|
| BMI (\(< 18.5 \text{ kg/m}^2\))    | 10       | 179     | 18 | 161 | 789 | 32 | 9.8 | 96  |
| Lymphadenopathy                     | 10       | 120     | 16 | 104 | 846 | 34 | 13.6| 96.2|
| W4SS with CRP (\(\geq 10 \text{ mg/L}\)) | 10   | 778     | 46 | 732 | 218 | 4  | 6   | 98.4|
| W4SS with CXR (abnormal)\*†        | 10       | 865     | 48 | 817 | 133 | 2  | 5.5 | 98.5|
| W4SS then CRP (\(\geq 5 \text{ mg/L}\))\*† | 10 | 363     | 40 | 323 | 627 | 10 | 11  | 98.4|
| WHO screen then Xpert\*‡           | 10       | -       | -  | -   | -   | -  | -   | -   |
| 5% prevalence                       |          |         |    |    |    |    |     |     |
| W4SS                                | 50       | 690     | 87 | 603 | 297 | 13 | 12.6| 95.8|
| CRP (\(\geq 10 \text{ mg/L}\))     | 50       | 430     | 88 | 342 | 558 | 12 | 20.5| 97.9|
| CRP (\(\geq 8 \text{ mg/L}\))      | 50       | 468     | 90 | 378 | 522 | 10 | 19.2| 98.1|
| CRP (\(\geq 5 \text{ mg/L}\))      | 50       | 560     | 92 | 468 | 432 | 8  | 16.4| 98.2|
| CXR (abnormal)                      | 50       | 451     | 73 | 378 | 522 | 27 | 16.2| 95.1|
| CXR (suggests tuberculosis)         | 50       | 298     | 64 | 234 | 666 | 36 | 21.5| 94.9|
| Cough (any)                         | 50       | 365     | 59 | 306 | 594 | 41 | 16.2| 93.5|
| Cough (\(\geq 2 \text{ weeks}\))   | 50       | 240     | 42 | 198 | 702 | 58 | 17.5| 92.4|
| Hb (\(< 10 \text{ g/dL}\))         | 50       | 288     | 54 | 234 | 666 | 46 | 18.8| 93.5|
| Hb (\(< 8 \text{ g/dL}\))          | 50       | 59      | 14 | 45  | 855 | 86 | 23.7| 90.9|
| BMI (\(< 18.5 \text{ kg/m}^2\))    | 50       | 188     | 35 | 153 | 747 | 65 | 18.6| 92  |
| Lymphadenopathy                     | 50       | 132     | 33 | 99  | 801 | 67 | 25  | 92.3|
| W4SS with CRP (\(\geq 10 \text{ mg/L}\))\*† | 50   | 786     | 93 | 693 | 207 | 7  | 11.8| 96.7|
| W4SS with CXR (abnormal)\*†        | 50       | 870     | 96 | 774 | 126 | 4  | 11  | 96.9|
| W4SS then CRP (\(\geq 5 \text{ mg/L}\))\*† | 50 | 386     | 80 | 306 | 594 | 20 | 20.7| 96.7|
| WHO screen then Xpert\*‡           | 50       | -       | -  | -   | -   | -  | -   | -   |
| 10% prevalence                      |          |         |    |    |    |    |     |     |
| W4SS                                | 50       | 690     | 87 | 603 | 297 | 13 | 12.6| 95.8|
| CRP (\(\geq 10 \text{ mg/L}\))     | 50       | 430     | 88 | 342 | 558 | 12 | 20.5| 97.9|
| CRP (\(\geq 8 \text{ mg/L}\))      | 50       | 468     | 90 | 378 | 522 | 10 | 19.2| 98.1|
| CRP (\(\geq 5 \text{ mg/L}\))      | 50       | 560     | 92 | 468 | 432 | 8  | 16.4| 98.2|
| CXR (abnormal)                      | 50       | 451     | 73 | 378 | 522 | 27 | 16.2| 95.1|
| CXR (suggests tuberculosis)         | 50       | 298     | 64 | 234 | 666 | 36 | 21.5| 94.9|
| Cough (any)                         | 50       | 365     | 59 | 306 | 594 | 41 | 16.2| 93.5|
| Cough (\(\geq 2 \text{ weeks}\))   | 50       | 240     | 42 | 198 | 702 | 58 | 17.5| 92.4|
| Hb (\(< 10 \text{ g/dL}\))         | 50       | 288     | 54 | 234 | 666 | 46 | 18.8| 93.5|
| Hb (\(< 8 \text{ g/dL}\))          | 50       | 59      | 14 | 45  | 855 | 86 | 23.7| 90.9|
| BMI (\(< 18.5 \text{ kg/m}^2\))    | 50       | 188     | 35 | 153 | 747 | 65 | 18.6| 92  |
| Lymphadenopathy                     | 50       | 132     | 33 | 99  | 801 | 67 | 25  | 92.3|
| W4SS with CRP (\(\geq 10 \text{ mg/L}\))\*† | 50   | 786     | 93 | 693 | 207 | 7  | 11.8| 96.7|
| W4SS with CXR (abnormal)\*†        | 50       | 870     | 96 | 774 | 126 | 4  | 11  | 96.9|
| W4SS then CRP (\(\geq 5 \text{ mg/L}\))\*† | 50 | 386     | 80 | 306 | 594 | 20 | 20.7| 96.7|
| WHO screen then Xpert\*‡           | 50       | -       | -  | -   | -   | -  | -   | -   |
| 38
| Test                        | Total TB | TP+FP‡ | TP | FP | TN | FN | PPV  | NPV  | Outcome of screening§ | Outcome of screening then diagnosis§ |
|-----------------------------|----------|--------|----|----|----|----|------|------|------------------------|--------------------------------------|
|                            |          |        |    |    |    |    |      |      |                        |                                      |
| W4SS                        | 100      | 710    | 174| 536| 264| 26 | 24.5 | 91   |                        |                                      |
| CRP (>10 mg/L)              | 100      | 480    | 176| 304| 496| 24 | 36.7 | 95.4 |                        |                                      |
| CRP (>8 mg/L)               | 100      | 516    | 180| 336| 464| 20 | 34.9 | 95.9 |                        |                                      |
| CRP (>5 mg/L)               | 100      | 600    | 184| 416| 384| 16 | 30.7 | 96   |                        |                                      |
| CXR (abnormal)              | 100      | 482    | 146| 336| 464| 54 | 30.3 | 89.6 |                        |                                      |
| CXR (suggests tuberculosis) | 100      | 336    | 128| 208| 592| 72 | 38.1 | 89.2 |                        |                                      |
| Cough (any)                 | 100      | 390    | 118| 272| 528| 82 | 30.3 | 86.6 |                        |                                      |
| Cough (>2 weeks)            | 100      | 260    | 84 | 176| 624| 116| 32.3 | 84.3 |                        |                                      |
| Hb (<10 g/dL)               | 100      | 316    | 108| 208| 592| 92 | 34.2 | 86.5 |                        |                                      |
| Hb (<8 g/dL)                | 100      | 68     | 28 | 40 | 760| 172| 41.2 | 81.5 |                        |                                      |
| BMI (<18.5 kg/m²)           | 100      | 206    | 70 | 136| 664| 130| 34   | 83.6 |                        |                                      |
| Lymphadenopathy             | 100      | 154    | 66 | 88 | 712| 134| 42.9 | 84.2 |                        |                                      |
| W4SS with CRP (>10 mg/L)†   | 100      | 802    | 186| 616| 184| 14 | 23.2 | 92.9 |                        |                                      |
| W4SS with CXR (abnormal)‡   | 100      | 880    | 192| 688| 112| 8  | 21.8 | 93.3 |                        |                                      |
| W4SS then CRP (>5 mg/L)‡    | 100      | 432    | 160| 272| 528| 40 | 37   | 93   |                        |                                      |
| Xpert alone†                | 100      | -      | -  | -  | -  | -  | -    | -    |                        |                                      |
| WHO screen then Xpert†      | 100      | -      | -  | -  | -  | -  | -    | -    |                        |                                      |

| Test                        | Total TB | TP+FP‡ | TP | FP | TN | FN | PPV  | NPV  | Outcome of screening§ | Outcome of screening then diagnosis§ |
|-----------------------------|----------|--------|----|----|----|----|------|------|------------------------|--------------------------------------|
|                            |          |        |    |    |    |    |      |      |                        |                                      |
| 20% prevalence              |          |        |    |    |    |    |      |      |                        |                                      |
| W4SS                        | 200      | 730    | 261| 469| 231| 39 | 35.8 | 85.6 |                        |                                      |
| CRP (>10 mg/L)              | 200      | 530    | 264| 266| 434| 36 | 49.8 | 92.3 |                        |                                      |
| CRP (>8 mg/L)               | 200      | 564    | 270| 294| 406| 30 | 47.9 | 93.1 |                        |                                      |
| CRP (>5 mg/L)               | 200      | 640    | 276| 364| 336| 24 | 43.1 | 93.3 |                        |                                      |
| CXR (abnormal)              | 200      | 513    | 219| 294| 406| 81 | 42.7 | 83.4 |                        |                                      |
| CXR (suggests tuberculosis) | 200      | 374    | 192| 182| 518| 108| 51.3 | 82.7 |                        |                                      |
| Cough (any)                 | 200      | 415    | 177| 238| 462| 123| 42.7 | 79  |                        |                                      |
| Cough (>2 weeks)            | 200      | 280    | 126| 154| 546| 174| 45   | 75.8 |                        |                                      |
| Hb (<10 g/dL)               | 200      | 344    | 162| 182| 518| 138| 47.1 | 79  |                        |                                      |
| Hb (<8 g/dL)                | 200      | 77     | 42 | 35 | 665| 258| 54.5 | 72  |                        |                                      |
| BMI (<18.5 kg/m²)           | 200      | 224    | 105| 119| 581| 195| 46.9 | 74.9 |                        |                                      |
| Lymphadenopathy             | 200      | 176    | 99 | 77 | 623| 201| 56.3 | 75.6 |                        |                                      |
| W4SS with CRP (>10 mg/L)†   | 200      | 818    | 279| 539| 161| 21 | 34.1 | 88.5 |                        |                                      |
| W4SS with CXR (abnormal)‡   | 200      | 890    | 288| 602| 98 | 12 | 32.4 | 89.1 |                        |                                      |
| W4SS then CRP (>5 mg/L)‡    | 200      | 478    | 240| 238| 462| 60 | 50.2 | 88.5 |                        |                                      |
| Xpert alone†                | 200      | -      | -  | -  | -  | -  | -    | -    |                        |                                      |
| WHO screen then Xpert†      | 200      | -      | -  | -  | -  | -  | -    | -    |                        |                                      |

§Estimated using the pooled point estimates for sensitivity and specificity for different tests/strategies
‡TP+FP is the number of participants who screen positive (i.e. the number who need subsequent Xpert testing)
†For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive
*Accuracy measures for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result)
| Test | Total TB | TP+FP‡ | TP | FP | TN | FN | PPV | NPV | TP | TN | FP | FN | PPV | NPV | NNS |
|------|----------|--------|----|----|----|----|-----|-----|----|----|----|----|-----|-----|-----|

†The test accuracy of Xpert in those who were W4SS positive was: 12 studies; 2315 participants; sensitivity 0.79 (0.7-0.86), specificity 0.97 (0.95-0.98).

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, FN = false negative, FP = false positive, Hb = haemoglobin, NNS = number needed to screen, NPV = negative predictive value, PPV = positive predictive value, TB = tuberculosis, TN = true negative, TP = true positive, W4SS = WHO four-symptom screen.
Table S10E - Yield of different screening and diagnostic algorithms at different prevalences when screening a population of 1000 participants with a CD4 cell count >200 cells/µL.

| Test                          | Total TB | TP+FP‡ | TP  | FP  | TN  | FN  | PPV | NPV | Outcome of screening then diagnosis§ |
|-------------------------------|----------|--------|-----|-----|-----|-----|-----|-----|---------------------------------------|
|                               |          |        |     |     |     |     |     |     | TP  | TN  | FP  | FN  | PPV | NPV | NNS | 1% prevalence |
| W4SS                          | 10       | 512    | 7   | 505 | 485 | 3   | 1.4 | 99.4| -   | -   | -   | -   | -   | -   |
| CRP (≥10 mg/L)                | 10       | 214    | 6   | 208 | 782 | 4   | 3   | 99.6| -   | -   | -   | -   | -   | -   |
| CRP (≥8 mg/L)                 | 10       | 245    | 7   | 238 | 752 | 3   | 2.7 | 99.6| -   | -   | -   | -   | -   | -   |
| CRP (≥5 mg/L)                 | 10       | 354    | 8   | 346 | 644 | 2   | 2.2 | 99.7| -   | -   | -   | -   | -   | -   |
| CXR (abnormal)                | 10       | 363    | 7   | 356 | 634 | 3   | 1.8 | 99.5| -   | -   | -   | -   | -   | -   |
| CXR (suggests tuberculosis)   | 10       | 194    | 6   | 188 | 802 | 4   | 3   | 99.5| -   | -   | -   | -   | -   | -   |
| Cough (any)                   | 10       | 243    | 5   | 238 | 752 | 5   | 2.1 | 99.4| -   | -   | -   | -   | -   | -   |
| Cough (≥2 weeks)              | 10       | 132    | 3   | 129 | 861 | 7   | 2.6 | 99.2| -   | -   | -   | -   | -   | -   |
| Hb (<10 g/dL)                 | 10       | 160    | 2   | 158 | 832 | 8   | 1.6 | 99.1| -   | -   | -   | -   | -   | -   |
| Hb (<8 g/dL)                  | 10       | 41     | 1   | 40  | 950 | 9   | 1.5 | 99  | -   | -   | -   | -   | -   | -   |
| BMI (<18.5 kg/m²)             | 10       | 81     | 2   | 79  | 911 | 8   | 2.5 | 99.1| -   | -   | -   | -   | -   | -   |
| Lymphadenopathy               | 10       | 102    | 3   | 99  | 891 | 7   | 2.9 | 99.2| -   | -   | -   | -   | -   | -   |
| W4SS with CRP (≥10 mg/L)‡     | 10       | 651    | 8   | 643 | 347 | 2   | 1.2 | 99.4| -   | -   | -   | -   | -   | -   |
| W4SS with CXR (abnormal)¶     | 10       | 722    | 9   | 713 | 277 | 1   | 1.3 | 99.7| -   | -   | -   | -   | -   | -   |
| W4SS then CRP (≥5 mg/L)¶      | 10       | 204    | 6   | 198 | 792 | 4   | 2.8 | 99.5| -   | -   | -   | -   | -   | -   |
| Xpert alone†                  | 10       | -      | -   | -   | -   | -   | -   | -   | 6   | 980 | 10  | 4   | 36.5| 99.6| 167 |
| WHO screen then Xpert†        | 10       | -      | -   | -   | -   | -   | -   | -   | 5   | 980 | 10  | 5   | 31.7| 99.5| 200 |
|                               |          |        |     |     |     |     |     |     | 5% prevalence |
| W4SS                          | 50       | 520    | 36  | 484 | 466 | 14  | 6.8 | 97  | -   | -   | -   | -   | -   | -   |
| CRP (≥10 mg/L)                | 50       | 231    | 32  | 199 | 751 | 18  | 14  | 97.7| -   | -   | -   | -   | -   | -   |
| CRP (≥8 mg/L)                 | 50       | 262    | 34  | 228 | 722 | 16  | 12.8| 97.8| -   | -   | -   | -   | -   | -   |
| CRP (≥5 mg/L)                 | 50       | 371    | 39  | 332 | 618 | 11  | 10.5| 98.2| -   | -   | -   | -   | -   | -   |
| CXR (abnormal)                | 50       | 375    | 33  | 342 | 608 | 17  | 8.8 | 97.3| -   | -   | -   | -   | -   | -   |
| CXR (suggests tuberculosis)   | 50       | 210    | 30  | 180 | 770 | 20  | 14  | 97.4| -   | -   | -   | -   | -   | -   |
| Cough (any)                   | 50       | 254    | 26  | 228 | 722 | 24  | 10.1| 96.7| -   | -   | -   | -   | -   | -   |
| Cough (≥2 weeks)              | 50       | 141    | 17  | 124 | 826 | 33  | 12.1| 96.2| -   | -   | -   | -   | -   | -   |
| Hb (<10 g/dL)                 | 50       | 164    | 12  | 152 | 798 | 38  | 7.6 | 95.5| -   | -   | -   | -   | -   | -   |
| Hb (<8 g/dL)                  | 50       | 41     | 3   | 38  | 912 | 47  | 7.3 | 95.1| -   | -   | -   | -   | -   | -   |
| BMI (<18.5 kg/m²)             | 50       | 86     | 10  | 76  | 874 | 40  | 11.6| 95.6| -   | -   | -   | -   | -   | -   |
| Lymphadenopathy               | 50       | 110    | 15  | 95  | 855 | 35  | 13.6| 96.1| -   | -   | -   | -   | -   | -   |
| W4SS with CRP (≥10 mg/L)‡     | 50       | 656    | 39  | 617 | 333 | 11  | 5.9 | 96.8| -   | -   | -   | -   | -   | -   |
| W4SS with CXR (abnormal)¶     | 50       | 730    | 46  | 684 | 266 | 4   | 6.2 | 98.3| -   | -   | -   | -   | -   | -   |
| W4SS then CRP (≥5 mg/L)‡      | 50       | 219    | 29  | 190 | 760 | 21  | 13  | 97.2| -   | -   | -   | -   | -   | -   |
| Xpert alone†                  | 50       | -      | -   | -   | -   | -   | -   | -   | 29  | 940 | 10  | 21  | 75  | 97.8| 34  |
| WHO screen then Xpert†        | 50       | -      | -   | -   | -   | -   | -   | -   | 23  | 940 | 10  | 27  | 70.8| 97.2| 43  |
|                               |          |        |     |     |     |     |     |     | 10% prevalence |
| Test                          | Total TB | TP+FP† | TP | FP | TN | FN | PPV  | NPV  | Outcome of screening§ | Outcome of screening then diagnosis§ |
|-------------------------------|----------|--------|----|----|----|----|------|------|------------------------|-------------------------------------|
| W4SS                          | 100      | 530    | 71 | 459| 441| 29 | 13.4| 93.8|                      |                                     |
| CRP (≥10 mg/L)               | 100      | 254    | 65 | 189| 711| 35 | 25.6| 95.3|                      |                                     |
| CRP (≥8 mg/L)                | 100      | 283    | 67 | 216| 684| 33 | 23.7| 95.4|                      |                                     |
| CRP (≥5 mg/L)                | 100      | 393    | 78 | 315| 585| 22 | 19.8| 96.4|                      |                                     |
| CXR (abnormal)               | 100      | 390    | 66 | 324| 576| 34 | 16.9| 94.4|                      |                                     |
| CXR (suggests tuberculosis)  | 100      | 230    | 59 | 171| 729| 41 | 25.7| 94.7|                      |                                     |
| Cough (any)                  | 100      | 267    | 51 | 216| 684| 49 | 19.1| 93.3|                      |                                     |
| Cough (≥2 weeks)             | 100      | 151    | 34 | 117| 783| 66 | 22.5| 92.2|                      |                                     |
| Hb (<10 g/dL)                | 100      | 169    | 25 | 144| 756| 75 | 14.8| 91  |                      |                                     |
| Hb (<8 g/dL)                 | 100      | 42     | 6  | 36 | 864| 94 | 14.3| 90.2|                      |                                     |
| BMI (<18.5 kg/m²)            | 100      | 92     | 20 | 72 | 828| 80 | 21.7| 91.2|                      |                                     |
| Lymphadenopathy              | 100      | 120    | 30 | 90 | 810| 70 | 25  | 92  |                      |                                     |
| W4SS with CRP (≥10 mg/L)†‡   | 100      | 663    | 78 | 585| 315| 22 | 11.8| 93.5|                      |                                     |
| W4SS with CXR (abnormal)§‡   | 100      | 739    | 91 | 648| 252| 9  | 12.3| 96.6|                      |                                     |
| W4SS then CRP (≥5 mg/L)¶     | 100      | 237    | 57 | 180| 720| 43 | 24.1| 94.4|                      |                                     |
| Xpert alone†                 | 100      | -      | -  | -  | -  | -  | -   | -   |                       |                                     |
| WHO screen then Xpert†       | 100      | -      | -  | -  | -  | -  | -   | -   |                       |                                     |
|                              |          |        |    |    |    |    |     |     | **20% prevalence**   |                                     |
|                             |          |        |    |    |    |    |     |     |                       |                                     |
| W4SS                          | 200      | 550    | 142| 408| 392| 58 | 25.8| 87.1|                      |                                     |
| CRP (≥10 mg/L)               | 200      | 298    | 130| 168| 632| 70 | 43.6| 90  |                      |                                     |
| CRP (≥8 mg/L)                | 200      | 326    | 134| 192| 608| 66 | 41.1| 90.2|                      |                                     |
| CRP (≥5 mg/L)                | 200      | 436    | 156| 280| 520| 44 | 35.8| 92.2|                      |                                     |
| CXR (abnormal)               | 200      | 420    | 132| 288| 512| 68 | 31.4| 88.3|                      |                                     |
| CXR (suggests tuberculosis)  | 200      | 270    | 118| 152| 648| 82 | 43.7| 88.8|                      |                                     |
| Cough (any)                  | 200      | 294    | 102| 192| 608| 98 | 34.7| 86.1|                      |                                     |
| Cough (≥2 weeks)             | 200      | 172    | 68 | 104| 696| 132| 39.5| 84.1|                      |                                     |
| Hb (<10 g/dL)                | 200      | 178    | 50 | 128| 672| 150| 28.1| 81.8|                      |                                     |
| Hb (<8 g/dL)                 | 200      | 44     | 12 | 32 | 768| 188| 27.3| 80.3|                      |                                     |
| BMI (<18.5 kg/m²)            | 200      | 104    | 40 | 64 | 736| 160| 38.5| 82.1|                      |                                     |
| Lymphadenopathy              | 200      | 140    | 60 | 80 | 720| 140| 42.9| 83.7|                      |                                     |
| W4SS with CRP (≥10 mg/L)†‡   | 200      | 676    | 156| 520| 280| 44 | 23.1| 86.4|                      |                                     |
| W4SS with CXR (abnormal)§‡   | 200      | 758    | 182| 576| 224| 18 | 24  | 92.6|                      |                                     |
| W4SS then CRP (≥5 mg/L)¶     | 200      | 274    | 114| 160| 640| 86 | 41.6| 88.2|                      |                                     |
| Xpert alone†                 | 200      | -      | -  | -  | -  | -  | -   | -   |                       |                                     |
| WHO screen then Xpert†       | 200      | -      | -  | -  | -  | -  | -   | -   |                       |                                     |

§Estimated using the pooled point estimates for sensitivity and specificity for different tests/strategies
†TP+FP is the number of participants who screen positive (i.e. the number who need subsequent Xpert testing)
‡For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive
*Accuracy measures for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result)
| Test | Total TB | TP+FP‡ | TP | FP | TN | FN | PPV | NPV | TP | TN | FP | FN | PPV | NPV | NNS |
|------|----------|--------|----|----|----|----|-----|-----|----|----|----|----|-----|-----|-----|

†The test accuracy of Xpert in those who were W4SS positive was: 12 studies; 2121 participants; sensitivity 0.64 (0.54-0.74), specificity 0.99 (0.98-0.99).

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, FN = false negative, FP = false positive, Hb = haemoglobin, NNS = number needed to screen, NPV = negative predictive value, PPV = positive predictive value, TB = tuberculosis, TN = true negative, TP = true positive, W4SS = WHO four-symptom screen
Table S10F - Yield of different screening and diagnostic algorithms at different prevalences when screening a population of 1000 pregnant participants#

| Test                                      | Total TB | TP+FP‡   | TP | TP | FN | TN | FN | PPV | NPV | Outcome of screening then diagnosis§ |
|-------------------------------------------|----------|----------|-----|-----|----|----|----|-----|-----|---------------------------------------|
| W4SS                                      | 10       | 424      | 8   | 416 | 574| 2  | 2  | 99.7| -   | 10% prevalence                       |
| CRP (≥10 mg/L)                            | 10       | -        | -   | -   | -  | -  | -  | -   | -   |                                       |
| CRP (≥8 mg/L)                             | 10       | -        | -   | -   | -  | -  | -  | -   | -   |                                       |
| CRP (≥5 mg/L)                             | 10       | -        | -   | -   | -  | -  | -  | -   | -   |                                       |
| CXR (abnormal)                            | 10       | 315      | 8   | 307 | 683| 2  | 2.4| 99.6| -   |                                       |
| CXR (suggests tuberculosis)               | 10       | 77       | 8   | 69  | 921| 2  | 9.8| 99.7| -   |                                       |
| Cough (any)                               | 10       | 195      | 7   | 188 | 802| 3  | 3.4| 99.6| -   |                                       |
| Cough (≥2 weeks)                          | 10       | 84       | 5   | 79  | 911| 5  | 5.6| 99.4| -   |                                       |
| Hb (≥10 g/dL)                             | 10       | 250      | 2   | 248 | 742| 8  | 0.8| 98.9| -   |                                       |
| Hb (≥8 g/dL)                              | 10       | 20       | 0   | 20  | 970| 10 | 0  | 99  | -   |                                       |
| BMI (<18.5 kg/m²)                         | 10       | 40       | 0   | 40  | 950| 10 | 0  | 99  | -   |                                       |
| Lymphadenopathy                           | 10       | -        | -   | -   | -  | -  | -  | -   | -   |                                       |
| W4SS with CRP (≥10 mg/L)‡                 | 10       | -        | -   | -   | -  | -  | -  | -   | -   |                                       |
| W4SS with CXR (abnormal)¶                 | 10       | 444      | 8   | 436 | 554| 2  | 1.7| 99.6| -   |                                       |
| W4SS then CRP (≥5 mg/L)‡                  | 10       | -        | -   | -   | -  | -  | -  | -   | -   |                                       |
| Xpert alone†                              | 10       | -        | -   | -   | -  | -  | -  | -   | -   |                                       |
| WHO screen then Xpert†                    | 10       | -        | -   | -   | -  | -  | -  | -   | -   |                                       |
| | 5% prevalence                            | 10       | 424      | 8   | 416 | 574| 2  | 2  | 99.7| -   | 10% prevalence                       |
| W4SS                                      | 50       | 441      | 42  | 399 | 551| 8  | 9.5| 98.6| -   |                                       |
| CRP (≥10 mg/L)                            | 50       | -        | -   | -   | -  | -  | -  | -   | -   |                                       |
| CRP (≥8 mg/L)                             | 50       | -        | -   | -   | -  | -  | -  | -   | -   |                                       |
| CRP (≥5 mg/L)                             | 50       | -        | -   | -   | -  | -  | -  | -   | -   |                                       |
| CXR (abnormal)                            | 50       | 332      | 38  | 294 | 656| 12 | 11.3| 98.1| -   |                                       |
| CXR (suggests tuberculosis)               | 50       | 104      | 38  | 66  | 884| 12 | 36.1| 98.6| -   |                                       |
| Cough (any)                               | 50       | 214      | 34  | 180 | 770| 16 | 15.7| 97.9| -   |                                       |
| Cough (≥2 weeks)                          | 50       | 100      | 24  | 76  | 874| 26 | 23.6| 97.1| -   |                                       |
| Hb (≥10 g/dL)                             | 50       | 248      | 10  | 238 | 712| 40 | 4  | 94.7| -   |                                       |
| Hb (≥8 g/dL)                              | 50       | 19       | 0   | 19  | 931| 50 | 0  | 94.9| -   |                                       |
| BMI (<18.5 kg/m²)                         | 50       | 38       | 0   | 38  | 912| 50 | 0  | 94.8| -   |                                       |
| Lymphadenopathy                           | 50       | -        | -   | -   | -  | -  | -  | -   | -   |                                       |
| W4SS with CRP (≥10 mg/L)‡                 | 50       | -        | -   | -   | -  | -  | -  | -   | -   |                                       |
| W4SS with CXR (abnormal)¶                 | 50       | 456      | 38  | 418 | 532| 12 | 8.2| 97.7| -   |                                       |
| W4SS then CRP (≥5 mg/L)‡                  | 50       | -        | -   | -   | -  | -  | -  | -   | -   |                                       |
| Xpert alone†                              | 50       | -        | -   | -   | -  | -  | -  | -   | -   |                                       |
| WHO screen then Xpert†                    | 50       | -        | -   | -   | -  | -  | -  | -   | -   |                                       |

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| Test                                      | Total TB | TP+FP† | TP | FP | TN | FN | PPV | NPV | TP | TN | FP | FN | PPV | NPV | NNS |
|-------------------------------------------|----------|--------|----|----|----|----|-----|-----|----|----|----|----|-----|-----|-----|
| W4SS                                      | 100      | 462    | 84 | 378| 522| 16 | 18.2| 97  | -  | -  | -  | -  | -   | -   | -   |
| CRP (≥10 mg/L)                            | 100      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |
| CRP (≥8 mg/L)                             | 100      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |
| CRP (≥5 mg/L)                             | 100      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |
| CXR (abnormal)                            | 100      | 354    | 75 | 279| 621| 25 | 21.2| 96.1| -  | -  | -  | -  | -   | -   | -   |
| CXR (suggests tuberculosis)               | 100      | 138    | 75 | 63 | 837| 25 | 54.3| 97.1| -  | -  | -  | -  | -   | -   | -   |
| Cough (any)                               | 100      | 238    | 67 | 171| 729| 33 | 28.2| 95.7| -  | -  | -  | -  | -   | -   | -   |
| Cough (≥2 weeks)                          | 100      | 119    | 47 | 72 | 828 |53 | 39.5| 94  | -  | -  | -  | -  | -   | -   | -   |
| Hb (<10 g/dL)                             | 100      | 245    | 20 | 225| 675| 80 | 8.2 | 89.4| -  | -  | -  | -  | -   | -   | -   |
| Hb (<8 g/dL)                              | 100      | 18     | 0  | 18 | 882| 100| 0   | 89.8| -  | -  | -  | -  | -   | -   | -   |
| BMI (<18.5 kg/m²)                         | 100      | 36     | 0  | 36 | 864| 100| 0   | 89.6| -  | -  | -  | -  | -   | -   | -   |
| Lymphadenopathy                           | 100      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |
| W4SS with CRP (≥10 mg/L)§                 | 100      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |
| W4SS with CXR (abnormal)¶                 | 100      | 471    | 75 | 396| 504| 25 | 15.9| 95.3| -  | -  | -  | -  | -   | -   | -   |
| W4SS then CRP (≥5 mg/L)¶                 | 100      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |
| Xpert alone†                              | 100      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |
| WHO screen then Xpert†                    | 100      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |

20% prevalence

| Test                                      | Total TB | TP+FP† | TP | FP | TN | FN | PPV | NPV | TP | TN | FP | FN | PPV | NPV | NNS |
|-------------------------------------------|----------|--------|----|----|----|----|-----|-----|----|----|----|----|-----|-----|-----|
| W4SS                                      | 200      | 504    | 168| 336| 464| 32 | 33.3| 93.5| -  | -  | -  | -  | -   | -   | -   |
| CRP (≥10 mg/L)                            | 200      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |
| CRP (≥8 mg/L)                             | 200      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |
| CRP (≥5 mg/L)                             | 200      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |
| CXR (abnormal)                            | 200      | 398    | 150| 248| 552| 50 | 37.7| 91.7| -  | -  | -  | -  | -   | -   | -   |
| CXR (suggests tuberculosis)               | 200      | 206    | 150| 56 | 744 |50 | 72.8| 93.7| -  | -  | -  | -  | -   | -   | -   |
| Cough (any)                               | 200      | 286    | 134| 152| 648| 66 | 46.9| 90.8| -  | -  | -  | -  | -   | -   | -   |
| Cough (≥2 weeks)                          | 200      | 158    | 94 | 64 | 736 |106| 59.5| 87.4| -  | -  | -  | -  | -   | -   | -   |
| Hb (<10 g/dL)                             | 200      | 240    | 40 | 200| 600| 160| 16.7| 78.9| -  | -  | -  | -  | -   | -   | -   |
| Hb (<8 g/dL)                              | 200      | 16     | 0  | 16 | 784 |200| 0   | 79.7| -  | -  | -  | -  | -   | -   | -   |
| BMI (<18.5 kg/m²)                         | 200      | 32     | 0  | 32 | 768 |200| 0   | 79.3| -  | -  | -  | -  | -   | -   | -   |
| Lymphadenopathy                           | 200      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |
| W4SS with CRP (≥10 mg/L)§                 | 200      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |
| W4SS with CXR (abnormal)¶                 | 200      | 502    | 150| 352| 448| 50 | 29.9| 90  | -  | -  | -  | -  | -   | -   | -   |
| W4SS then CRP (≥5 mg/L)¶                 | 200      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |
| Xpert alone†                              | 200      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |
| WHO screen then Xpert†                    | 200      | -      | -  | -  | -  | -  | -   | -   | -  | -  | -  | -  | -   | -   | -   |

# For lymphadenopathy and strategies containing CRP, there were insufficient data to perform meta-analysis
§Estimated using the pooled point estimates for sensitivity and specificity for different tests/strategies
†TP+FP is the number of participants who screen positive (i.e. the number who need subsequent Xpert testing)
¶For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive
| Test  | Total TB | TP+FP‡ | TP | FP | TN | FN | PPV | NPV | Test  | Total TB | TP+FP‡ | TP | FP | TN | FN | PPV | NPV | TP | TN | FP | FN | PPV | NPV | NNS |
|-------|----------|--------|----|----|----|----|-----|-----|-------|----------|--------|----|----|----|----|-----|-----|----|----|----|----|-----|-----|-----|

*Accuracy measures for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result)
†The test accuracy of Xpert in those who were W4SS positive was: 5 studies; 137 participants; sensitivity 0.71 (0.33-0.93), specificity 1 (0-1).
Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, FN= false negative, FP = false positive, Hb = haemoglobin, NNS = number needed to screen, NPV = negative predictive value, PPV = positive predictive value, TB = tuberculosis, TN = true negative, TP = true positive, W4SS = WHO four-symptom screen
| Table S11 - Sensitivity analyses using different reference standards | Table S11A - Sensitivity analyses using different reference standards in all participants |
|---|---|
| No of studies | N | Sensitivity (95% CI) | Specificity (95% CI) | No of studies | N | Sensitivity (95% CI) | Specificity (95% CI) |
| W4SS | 21 | 15652 | 82 (71-89) | 42 (29-57) | 12 | 8612 | 88 (76-94) | 43 (27-61) |
| CRP (>=10 mg/L) | 5 | 3582 | 73 (49-88) | 74 (62-83) | 4 | 3110 | 77 (35-95) | 72 (56-84) |
| CRP (>=8 mg/L) | 5 | 3582 | 77 (58-89) | 70 (57-81) | 4 | 3110 | 78 (31-96) | 69 (52-82) |
| CRP (>=5 mg/L) | 5 | 3582 | 85 (72-93) | 60 (48-71) | 4 | 3110 | 88 (62-97) | 59 (43-72) |
| CXR (abnormal) | 8 | 6222 | 72 (65-78) | 62 (52-71) | 4 | 4190 | 73 (65-79) | 65 (55-74) |
| CXR (suggests tuberculosis) | 8 | 6177 | 63 (56-70) | 78 (67-86) | 3 | 3749 | 74 (62-74) | 84 (68-93) |
| Cough (any) | 21 | 15623 | 56 (48-63) | 73 (65-79) | 12 | 8586 | 63 (55-71) | 73 (64-80) |
| Cough (>=2 weeks) | 17 | 10919 | 38 (28-49) | 84 (77-90) | 9 | 4545 | 38 (21-58) | 86 (76-92) |
| Hb (<10 g/dL) | 9 | 5118 | 43 (33-53) | 80 (73-85) | 5 | 2098 | 57 (41-72) | 76 (63-86) |
| Hb (<8 g/dL) | 9 | 5118 | 12 (9-15) | 96 (93-97) | 5 | 2098 | 13 (9-19) | 94 (89-97) |
| BMI (<18.5 kg/m²) | 18 | 12704 | 29 (21-37) | 89 (84-92) | 12 | 8464 | 38 (26-51) | 87 (80-91) |
| Lymphadenopathy | 4 | 2394 | 30 (14-54) | 91 (75-97) | 3 | 1404 | 23 (13-38) | 94 (84-98) |
| W4SS with CRP (>=10 mg/L) | 5 | 3582 | 87 (56-97) | 31 (13-56) | 4 | 3110 | 94 (46-100) | 30 (10-63) |
| W4SS with CXR (abnormal) | 8 | 6213 | 95 (90-97) | 21 (10-38) | 4 | 4182 | 95 (87-99) | 31 (15-55) |
| W4SS then CRP (>=5 mg/L) | 5 | 3582 | 66 (25-92) | 75 (54-88) | 4 | 3110 | 72 (24-96) | 75 (47-91) |

*Diagnostic accuracy estimates using culture or Xpert of sputum and/or other specimens as a reference standard
†Diagnostic accuracy estimates using only Xpert of sputum and/or other specimens as a reference standard
¶For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
### Table S11B - Sensitivity analyses using different reference standards in outpatients (on ART)

|                  | No of studies | N     | Sensitivity (95% CI) | Specificity (95% CI) | No of studies | N     | Sensitivity (95% CI) | Specificity (95% CI) |
|------------------|---------------|-------|----------------------|----------------------|---------------|-------|----------------------|----------------------|
| **W4SS**         |               |       |                      |                      |               |       |                      |                      |
|                  | 9             | 4328  | 56 (32-77)           | 71 (51-85)           | 4             | 2664  | 51 (20-82)           | 80 (67-88)           |
| CRP (>=10 mg/L)  | 1             | 381   | 12 (2-54)            | 90 (93-87)           | 1             | 378   | 10 (1-67)            | 90 (93-87)           |
| CRP (>=8 mg/L)   | 1             | 381   | 25 (6-62)            | 89 (92-85)           | 1             | 378   | 10 (1-67)            | 88 (91-85)           |
| CRP (>=5 mg/L)   | 1             | 381   | 38 (13-72)           | 80 (84-76)           | 1             | 378   | 25 (3-76)            | 79 (83-75)           |
| CXR (abnormal)   | 4             | 2679  | 72 (61-82)           | 64 (50-75)           | 2             | 2063  | 69 (56-80)           | 72 (64-79)           |
| **CXR**          |               |       |                      |                      |               |       |                      |                      |
| (suggests tuberculosis) |       |       |                      |                      |               |       |                      |                      |
| **Cough**        |               |       |                      |                      |               |       |                      |                      |
| (any)            | 9             | 4328  | 41 (22-62)           | 83 (73-90)           | 4             | 2664  | 43 (29-58)           | 88 (85-91)           |
| (>=2 weeks)      | 6             | 1746  | 18 (4-51)            | 93 (79-98)           | 2             | 536   | 13 (0-86)            | 97 (94-98)           |
| **Hb**           |               |       |                      |                      |               |       |                      |                      |
| (<10 g/dL)       | 4             | 844   | 49 (30-68)           | 83 (71-90)           | 2             | 629   | 18 (0-93)            | 77 (61-88)           |
| (<8 g/dL)        | 4             | 844   | 13 (4-31)            | 94 (91-96)           | 2             | 629   | 10 (2-37)            | 93 (90-94)           |
| **BMI**          |               |       |                      |                      |               |       |                      |                      |
| (<18.5 kg/m²)    | 7             | 4054  | 17 (8-32)            | 93 (88-96)           | 4             | 2646  | 14 (1-76)            | 89 (82-94)           |
| **Lymphadenopathy** |       |       |                      |                      |               |       |                      |                      |
|                  | 1             | 338   | 17 (7-38)            | 93 (95-90)           | 1             | 338   | 11 (3-34)            | 92 (95-89)           |
| **W4SS with CRP** (>=10 mg/L)¶ |       |       |                      |                      |               |       |                      |                      |
|                  | 1             | 381   | 12 (2-54)            | 79 (83-75)           | 1             | 378   | 10 (1-67)            | 79 (83-75)           |
| **W4SS with CXR** (abnormal)¶ |       |       |                      |                      |               |       |                      |                      |
|                  | 4             | 2679  | 90 (73-97)           | 33 (17-55)           | 2             | 2063  | 87 (62-97)           | 51 (33-70)           |
| **W4SS then CRP** (>=5 mg/L)¶ |       |       |                      |                      |               |       |                      |                      |
|                  | 1             | 381   | 6 (0-50)             | 96 (97-93)           | 1             | 378   | 10 (1-67)            | 96 (97-93)           |

*Diagnostic accuracy estimates using culture or Xpert of sputum and/or other specimens as a reference standard
†Diagnostic accuracy estimates using only Xpert of sputum and/or other specimens as a reference standard
¶For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
Table S11C - Sensitivity analyses using different reference standards in outpatients (not on ART)

|                  | Sensitivity analyses 1* |                       | Sensitivity analyses 2† |                       |
|------------------|-------------------------|-----------------------|-------------------------|-----------------------|
|                  | No of studies | N          | Sensitivity (95% CI) | Specificity (95% CI) | No of studies | N          | Sensitivity (95% CI) | Specificity (95% CI) |
| W4SS             | 20          | 11196      | 85 (76-91)          | 37 (26-51)           | 11          | 5820       | 90 (80-96)          | 37 (24-53)          |
| CRP (>=10 mg/L)  | 5          | 3198       | 82 (77-86)          | 67 (61-73)           | 4           | 2729       | 89 (85-92)          | 63 (56-70)          |
| CRP (>=8 mg/L)   | 5          | 3198       | 84 (81-87)          | 64 (57-70)           | 4           | 2729       | 90 (86-94)          | 59 (51-67)          |
| CRP (>=5 mg/L)   | 5          | 3198       | 89 (85-91)          | 54 (46-61)           | 4           | 2729       | 93 (89-96)          | 50 (42-59)          |
| CXR (abnormal)   | 8          | 3543       | 72 (65-78)          | 62 (52-72)           | 4           | 2127       | 73 (64-80)          | 66 (54-76)          |
| CXR (suggests tuberculosis) | 8          | 3587       | 62 (55-69)          | 79 (67-87)           | 3           | 2004       | 64 (52-74)          | 85 (67-94)          |
| Cough (any)      | 20         | 11167      | 58 (51-65)          | 70 (63-76)           | 11          | 5794       | 66 (59-73)          | 69 (62-75)          |
| Cough (>=2 weeks) | 16         | 9045       | 43 (34-52)          | 82 (75-87)           | 8           | 3881       | 48 (33-63)          | 81 (72-87)          |
| Hb (<10 g/dL)    | 9          | 4271       | 44 (33-56)          | 79 (71-85)           | 5           | 1466       | 62 (43-78)          | 74 (58-85)          |
| Hb (>8 g/dL)     | 9          | 4271       | 11 (8-15)           | 96 (93-98)           | 5           | 1466       | 14 (10-20)          | 94 (87-97)          |
| BMI (<18.5 kg/m²) | 17         | 8522       | 31 (23-40)          | 87 (82-92)           | 11          | 5690       | 42 (29-56)          | 85 (76-91)          |
| Lymphadenopathy  | 4          | 2056       | 30 (13-54)          | 91 (76-97)           | 3           | 1066       | 25 (13-43)          | 95 (86-98)          |
| W4SS with CRP (>=10 mg/L)¶ | 5          | 3198       | 94 (86-98)          | 20 (12-33)           | 4           | 2729       | 98 (93-100)         | 17 (9-30)           |
| W4SS with CXR (abnormal)¶ | 8          | 3534       | 95 (92-98)          | 18 (9-34)            | 4           | 2119       | 96 (91-99)          | 29 (15-50)          |
| W4SS then CRP (>=5 mg/L)¶ | 5          | 3198       | 83 (74-89)          | 64 (57-70)           | 4           | 2729       | 89 (84-92)          | 60 (52-68)          |

*Diagnostic accuracy estimates using culture or Xpert of sputum and/or other specimens as a reference standard
†Diagnostic accuracy estimates using only Xpert of sputum and/or other specimens as a reference standard
¶For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
Table S11D - Sensitivity analyses using different reference standards in participants with CD4 cell count \(<=200\) cells/µL

|                  | Sensitivity analyses 1* | Sensitivity analyses 2† |
|------------------|-------------------------|-------------------------|
|                  | No of studies | N   | Sensitivity (95% CI) | Specificity (95% CI) | No of studies | N | Sensitivity (95% CI) | Specificity (95% CI) |
| W4SS             | 21           | 5636 | 88 (78-93)           | 33 (20-49)           | 12           | 3129 | 90 (78-96)           | 35 (19-55)           |
| CRP (\(\geq 10\) mg/L) | 5           | 1597 | 88 (82-92)           | 63 (50-73)           | 4            | 1460 | 91 (84-95)           | 62 (48-75)           |
| CRP (\(\geq 8\) mg/L)  | 5           | 1597 | 90 (86-93)           | 59 (46-71)           | 4            | 1460 | 93 (86-97)           | 58 (43-72)           |
| CRP (\(\geq 5\) mg/L)  | 5           | 1597 | 92 (88-95)           | 48 (34-63)           | 4            | 1460 | 94 (88-97)           | 49 (33-65)           |
| CXR (abnormal)    | 8           | 2210 | 74 (65-80)           | 58 (49-67)           | 4            | 1311 | 72 (62-80)           | 61 (49-71)           |
| CXR (suggests tuberculosis) | 8       | 2143 | 64 (56-71)           | 74 (64-82)           | 3            | 1157 | 61 (49-71)           | 81 (63-91)           |
| Cough (any)       | 21          | 5626 | 59 (52-66)           | 67 (59-74)           | 12           | 3119 | 65 (56-73)           | 67 (58-75)           |
| Cough (\(\geq 2\) weeks) | 17       | 4203 | 42 (33-50)           | 78 (70-85)           | 9            | 1889 | 38 (22-58)           | 80 (69-88)           |
| Hb (\(< 10\) g/dL) | 9           | 1971 | 53 (42-63)           | 74 (65-81)           | 5            | 916  | 65 (51-77)           | 71 (53-84)           |
| Hb (\(< 8\) g/dL)  | 9           | 1971 | 14 (10-19)           | 95 (91-97)           | 5            | 916  | 15 (9-25)            | 93 (86-96)           |
| BMI (\(< 18.5\) kg/m²) | 18       | 4969 | 34 (26-43)           | 84 (77-88)           | 12           | 3098 | 42 (31-54)           | 80 (72-86)           |
| Lymphadenopathy   | 4           | 1003 | 31 (13-56)           | 89 (73-96)           | 3            | 627  | 21 (11-35)           | 94 (87-97)           |
| W4SS with CRP (\(\geq 10\) mg/L)¶ | 5           | 1597 | 92 (52-99)           | 23 (10-47)           | 4            | 1460 | 97 (76-100)          | 24 (8-55)            |
| W4SS with CXR (abnormal)¶ | 8          | 2208 | 97 (92-99)           | 14 (7-25)            | 4            | 1309 | 97 (88-99)           | 21 (11-36)           |
| W4SS then CRP (\(\geq 5\) mg/L)¶ | 5           | 1597 | 80 (51-94)           | 66 (37-86)           | 4            | 1460 | 95 (66-99)           | 69 (35-90)           |

* Diagnostic accuracy estimates using culture or Xpert of sputum and/or other specimens as a reference standard
† Diagnostic accuracy estimates using only Xpert of sputum and/or other specimens as a reference standard
¶ For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
### Table S11E - Sensitivity analyses using different reference standards in participants with CD4 cell count >200 cells/µL

|                | Sensitivity analyses 1* | Sensitivity analyses 2† |
|----------------|-------------------------|-------------------------|
|                | No of studies | N     | Sensitivity (95% CI) | Specificity (95% CI) | No of studies | N     | Sensitivity (95% CI) | Specificity (95% CI) |
| W4SS           | 21            | 9633  | 71 (58-81)            | 50 (36-63)            | 12            | 5163  | 81 (63-91)            | 50 (33-67)            |
| CRP (≥10 mg/L) | 5             | 1829  | 61 (45-75)            | 79 (68-87)            | 4             | 1515  | 72 (45-89)            | 78 (62-88)            |
| CRP (≥8 mg/L)  | 5             | 1829  | 64 (47-78)            | 76 (64-85)            | 4             | 1515  | 78 (67-87)            | 74 (58-86)            |
| CRP (≥5 mg/L)  | 5             | 1829  | 75 (59-87)            | 65 (54-75)            | 4             | 1515  | 86 (58-97)            | 64 (50-77)            |
| CXR (abnormal) | 8             | 3909  | 66 (59-73)            | 65 (53-74)            | 4             | 2784  | 73 (60-83)            | 67 (56-76)            |
| CXR (suggests tuberculosis) | 8 | 3932  | 60 (51-69)            | 81 (70-89)            | 3             | 2498  | 66 (46-82)            | 86 (69-94)            |
| Cough (any)    | 21            | 9616  | 50 (41-60)            | 76 (68-82)            | 12            | 5149  | 61 (48-71)            | 76 (67-83)            |
| Cough (≥2 weeks) | 17   | 6416  | 34 (22-48)            | 87 (80-91)            | 9             | 2415  | 38 (16-65)            | 88 (80-93)            |
| Hb (≤10 g/dL)  | 9             | 3048  | 27 (18-38)            | 84 (79-89)            | 5             | 1112  | 38 (20-60)            | 82 (73-88)            |
| Hb (≤8 g/dL)   | 9             | 3048  | 6 (2-13)              | 97 (94-98)            | 5             | 1112  | 7 (2-25)              | 95 (91-97)            |
| BMI (<18.5 kg/m²) | 18  | 7396  | 20 (13-30)            | 92 (88-95)            | 12            | 5063  | 32 (20-47)            | 91 (85-94)            |
| Lymphadenopathy | 4          | 1374  | 31 (12-59)            | 91 (73-97)            | 3             | 770   | 27 (12-49)            | 94 (77-99)            |
| W4SS with CRP (≥10 mg/L)¶ | 5 | 1829  | 76 (47-92)            | 35 (15-61)            | 4             | 1515  | 93 (4-100)            | 34 (12-66)            |
| W4SS with CXR (abnormal)¶ | 8 | 3903  | 91 (82-96)            | 28 (16-44)            | 4             | 2778  | 93 (75-98)            | 35 (15-63)            |
| W4SS then CRP (≥5 mg/L)¶ | 5 | 1829  | 53 (12-90)            | 80 (62-91)            | 4             | 1515  | 56 (5-97)             | 79 (55-92)            |

*Diagnostic accuracy estimates using culture or Xpert of sputum and/or other specimens as a reference standard
†Diagnostic accuracy estimates using only Xpert of sputum and/or other specimens as a reference standard
##For sensitivity analyses 2, the bivariate model did not converge; results from model assuming no correlation between sensitivity and specificity
¶For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
|                      | Sensitivity analyses 1* | Sensitivity analyses 2† |
|----------------------|-------------------------|-------------------------|
|                      | No of studies | N | Sensitivity (95% CI) | Specificity (95% CI) | No of studies | N | Sensitivity (95% CI) | Specificity (95% CI) |
| W4SS                 | 8             | 1935 | 77 (25-97) | 58 (39-75) | 5             | 489 | 71 (10-98) | 55 (31-77) |
| CRP (≥10 mg/L)#      | -             | - | - | - | - | - |
| CRP (≥8 mg/L)#       | -             | - | - | - | - | - |
| CRP (≥5 mg/L)#       | -             | - | - | - | - | - |
| CXR (abnormal)       | 1             | 8 | 75 (11-99) | 69 (91-33) | 1             | 8 | 75 (11-99) | 69 (91-33) |
| CXR (suggests tuberculosis) | 1   | 7 | 75 (11-99) | 93 (100-42) | 1             | 7 | 75 (11-99) | 93 (100-42) |
| Cough (any)          | 8             | 1933 | 62 (24-89) | 81 (70-88) | 5             | 487 | 53 (12-90) | 81 (70-89) |
| Cough (≥2 weeks)     | 8             | 1933 | 43 (17-74) | 92 (86-95) | 5             | 488 | 17 (3-61) | 92 (87-96) |
| Hb (≤10 g/dL)#       | 5             | 1350 | 20 (10-36) | 75 (61-85) | -             | - | - | - |
| Hb (≤8 g/dL)#        | 5             | 1350 | 0 (0-100) | 98 (97-99) | -             | - | - | - |
| BMI (<18.5 kg/m²)##  | 7             | 472 | 0 (0-98) | 96 (94-98) | 5             | 431 | 0 (0-100) | 97 (94-98) |
| Lymphadenopathy#     | -             | - | - | - | - | - |
| W4SS with CRP (≥10 mg/L)#¶ | - | - | - | - | - | - |
| W4SS with CXR (abnormal)¶ | 1 | 8 | 75 (11-99) | 56 (84-24) | 1             | 8 | 75 (11-99) | 56 (84-24) |
| W4SS then CRP (≥5 mg/L)#¶ | - | - | - | - | - | - |

§For some analyses, all studies had 0% or 100% sensitivity/specificity; therefore, models may have given unreliable estimates such as 95% CIs that range from 0 to 100
*Diagnostic accuracy estimates using culture or Xpert of sputum and/or other specimens as a reference standard
†Diagnostic accuracy estimates using only Xpert of sputum and/or other specimens as a reference standard
#Insufficient data to perform meta-analysis
##Bivariate model did not converge; results from model assuming no correlation between sensitivity and specificity
¶For parallel strategies, two screening tests are offered at the same time. For sequential strategies, a second screening test is offered only if the first screening test is positive

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
Table S12 - Sensitivity analyses comparing W4SS followed by Xpert with CRP (≥10mg) followed by Xpert in all participants and by subgroups†

| Subgroup                  | CRP (≥10 mg/L) then Xpert | W4SS then Xpert | Number of Xpert tests per 1000 PLHIV* |
|---------------------------|-----------------------------|------------------|---------------------------------------|
|                           | No of studies | N  | Sensitivity (95% CI) | Specificity (95% CI) | No of studies | N  | Sensitivity (95% CI) | Specificity (95% CI) | 1% prevalence | 5% prevalence | 10% prevalence | 20% prevalence | W4SS | CRP | W4SS | CRP | W4SS | CRP | W4SS | CRP | W4SS | CRP |
| All participants          | 4             | 3099 | 54 (45-63) | 100 (99-100) | 4             | 3099 | 50 (28-71) | 100 (98-100) | 612 | 265 | 620 | 286 | 631 | 311 | 652 | 362 |
| Outpatients (Not on ART)  | 4             | 2718 | 56 (51-60) | 99 (99-100) | 4             | 2718 | 59 (51-66) | 99 (99-100) | 732 | 345 | 738 | 365 | 747 | 390 | 764 | 440 |
| Outpatients (On ART)      | 1             | 378  | 8 (1-62)  | 100 (100-98) | 1             | 378  | 8 (1-62)  | 100 (100-98) | 120 | 101 | 118 | 105 | 116 | 110 | 112 | 120 |
| CD4 >200 cells/µL         | 4             | 1508 | 43 (34-53) | 100 (7-100) | 4             | 1508 | 44 (32-58) | 100 (99-100) | 572 | 214 | 578 | 230 | 585 | 251 | 600 | 292 |
| CD4 ≤200 cells/µL         | 4             | 1456 | 61 (51-71) | 99 (98-100) | 4             | 1456 | 63 (53-71) | 99 (98-99) | 682 | 365 | 689 | 386 | 698 | 411 | 716 | 462 |
| Pregnant participants#    | -             | -    | -            | -             | -             | -    | -            | -             | -   | -   | -   | -   | -   | -   | -   | -   |

†Using culture as a reference standard; accuracy measures for entire algorithm using total Xpert (sputum and/or non-sputum Xpert result)
*Calculated using direct comparison estimates
#Insufficient data to perform meta-analysis

Definition of abbreviations: ART = antiretroviral therapy, CRP = C-reactive protein, PLHIV = people living with HIV, W4SS = WHO four-symptom screen
Figure S1 - Risk of bias and applicability results on the QUADAS-2 criteria tool

Figure S1A - Risk of bias and applicability results on the QUADAS-2 criteria tool by study†

| Study                  | D1 | D2 | D3 | D4 | D5 | D6 | D7 |
|------------------------|----|----|----|----|----|----|----|
| Abed Al-Darraji, 2013  | +  | +  | +  | +  | +  | +  | +  |
| Affolabi, 2018         | +  | +  | +  | +  | +  | +  | +  |
| Ahmad, 2014            | +  | +  | +  | +  | +  | +  | +  |
| Balcha, 2014           | +  | +  | +  | +  | +  | +  | +  |
| Bjerrum, 2015          | +  | +  | +  | +  | ✗  | +  | +  |
| Gersh, 2018            | +  | +  | +  | +  | +  | +  | +  |
| Hanifa, 2012           | +  | +  | +  | +  | +  | +  | +  |
| Hoffmann, 2013         | +  | +  | +  | +  | ✗  | +  | +  |
| Kempker, 2019          | +  | +  | +  | +  | +  | +  | +  |
| Kerkhoff, 2013         | +  | +  | +  | +  | +  | +  | +  |
| Kufa, 2012             | +  | +  | +  | +  | +  | +  | +  |
| LaCourse, 2016         | +  | +  | +  | +  | ✗  | +  | +  |
| Mbu, 2018              | +  | +  | +  | +  | +  | +  | +  |
| Modi, 2016¶            | +  | +  | +  | +  | +  | +  | +  |
| Nguyen, 2016           | +  | +  | +  | +  | +  | +  | +  |
| Rangaka, 2012          | +  | +  | +  | +  | ✗  | +  | +  |
| Reeve, unpublished     | +  | +  | +  | +  | +  | +  | +  |
| Shapiro, 2018          | +  | +  | +  | +  | +  | +  | +  |
| Swindells, 2013        | +  | +  | +  | +  | +  | +  | +  |
| Thit, 2017§            | +  | +  | +  | +  | ✗  | +  | +  |
| Yoon, 2018             | +  | +  | +  | +  | +  | +  | +  |

D1: Patient selection (Risk of Bias)
D2: Index test (Risk of Bias)
D3: Reference test (Risk of Bias)
D4: Flow and timing (Risk of Bias)
D5: Patient selection (Applicability)
D6: Index test (Applicability)
D7: Reference test (Applicability)

†In general, domains were assessed for all participants. Green = low risk of bias, red = high risk of bias
¶For the domain D4 (flow and timing), the risk of bias was judged high for chest X-ray as the index test (>20% missing data).
§For the domain D4 (flow and timing), the risk of bias was judged high for haemoglobin as the index test (>20% missing data).
Figure S1B - Clustered bar graphs of risk of bias and applicability results on the QUADAS-2 criteria tool

- Patient selection (Risk of Bias)
- Index test (Risk of Bias)
- Reference test (Risk of Bias)
- Flow and timing (Risk of Bias)
- Patient selection (Applicability)
- Index test (Applicability)
- Reference test (Applicability)

Legend:
- Low risk of bias
- High risk of bias
Figure S2 - Plots of sensitivity and specificity for each screening test for the detection of tuberculosis in all participants†

†Dashed lines indicate WHO’s minimum requirements for a tuberculosis screening test (90% sensitivity and 70% specificity)

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
Figure S2B - Plots of sensitivity and specificity for each screening test for the detection of tuberculosis in outpatients (on ART)†

†Dashed lines indicate WHO's minimum requirements for a tuberculosis screening test (90% sensitivity and 70% specificity)
Definition of abbreviations: ART = antiretroviral therapy, BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
Figure S2C - Plots of sensitivity and specificity for each screening test for the detection of tuberculosis in outpatients (not on ART)†

†Dashed lines indicate WHO’s minimum requirements for a tuberculosis screening test (90% sensitivity and 70% specificity)
Definition of abbreviations: ART = antiretroviral therapy, BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
Figure S2D - Plots of sensitivity and specificity for each screening test for the detection of tuberculosis in participants with CD4 cell count <=200 cells/µL†

†Dashed lines indicate WHO’s minimum requirements for a tuberculosis screening test (90% sensitivity and 70% specificity)
Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
Figure S2E - Plots of sensitivity and specificity for each screening test for the detection of tuberculosis in participants with CD4 cell count >200 cells/µL†

†Dashed lines indicate WHO’s minimum requirements for a tuberculosis screening test (90% sensitivity and 70% specificity)
Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
Figure S2F - Plots of sensitivity and specificity for each screening test for the detection of tuberculosis in pregnant participants†*

†Dashed lines indicate WHO’s minimum requirements for a tuberculosis screening test (90% sensitivity and 70% specificity)
*Insufficient data to perform meta-analysis

Definition of abbreviations: BMI = body mass index, CRP = C-reactive protein, CXR = chest X-ray, Hb = haemoglobin, W4SS = WHO four-symptom screen
Figure S3 - Forest plots of sensitivity and specificity estimates in all participants and subgroups

Figure S3A - Forest plots of sensitivity and specificity estimates in all participants

| Sensitivity | Specificity |
|----------------|-------------|
| Affolabi       | 0.69 [0.59, 0.78] |
| Ahmad          | 0.79 [0.67, 0.88] |
| Al Darraj       | 0.73 [0.48, 0.89] |
| Balcha         | 0.93 [0.87, 0.96] |
| Bjerrum         | 0.95 [0.82, 0.99] |
| Gersh          | 0.08 [0.01, 0.48] |
| Hanifa         | 0.95 [0.87, 0.98] |
| Hoffmann       | 0.29 [0.16, 0.45] |
| Kemper         | 0.92 [0.65, 0.99] |
| Kerkhoff       | 0.93 [0.86, 0.97] |
| Kufa           | 0.98 [0.83, 1.00] |
| LaCourse       | 0.43 [0.16, 0.75] |
| Mbu            | 0.92 [0.87, 0.96] |
| Modi           | 0.72 [0.61, 0.81] |
| Nguyen         | 0.50 [0.33, 0.67] |
| Rangaka        | 0.40 [0.32, 0.48] |
| Reeve          | 0.74 [0.64, 0.82] |
| Shapiro        | 0.90 [0.78, 0.96] |
| Swindells      | 0.88 [0.76, 0.94] |
| Thit           | 0.80 [0.49, 0.94] |
| Yoon           | 0.96 [0.93, 0.98] |

| Affolabi       | 0.74 [0.72, 0.75] |
| Ahmad          | 0.48 [0.44, 0.53] |
| Al Darraj       | 0.33 [0.25, 0.42] |
| Balcha         | 0.22 [0.19, 0.25] |
| Bjerrum         | 0.09 [0.07, 0.13] |
| Gersh          | 0.88 [0.84, 0.91] |
| Hanifa         | 0.06 [0.04, 0.09] |
| Hoffmann       | 0.84 [0.82, 0.86] |
| Kemper         | 0.44 [0.35, 0.55] |
| Kerkhoff       | 0.15 [0.12, 0.19] |
| Kufa           | 0.15 [0.12, 0.19] |
| LaCourse       | 0.81 [0.76, 0.85] |
| Mbu            | 0.15 [0.12, 0.17] |
| Modi           | 0.51 [0.48, 0.55] |
| Nguyen         | 0.64 [0.59, 0.69] |
| Rangaka        | 0.58 [0.56, 0.60] |
| Reeve          | 0.48 [0.45, 0.52] |
| Shapiro        | 0.37 [0.32, 0.42] |
| Swindells      | 0.35 [0.32, 0.39] |
| Thit           | 0.53 [0.48, 0.57] |
| Yoon           | 0.14 [0.12, 0.16] |
All - Forest plot for
Top: CRP (>=10 mg/L) and Bottom: CRP (>=5 mg/L)

Sensitivity

Gersh 0.20 [0.04, 0.62]
Kirkhoff 0.86 [0.77, 0.92]
Reeve 0.78 [0.68, 0.85]
Shapiro 0.79 [0.64, 0.86]
Yoon 0.84 [0.79, 0.89]

Specificity

Gersh 0.90 [0.87, 0.93]
Kirkhoff 0.57 [0.53, 0.62]
Reeve 0.64 [0.61, 0.68]
Shapiro 0.72 [0.67, 0.76]
Yoon 0.74 [0.72, 0.77]

Sensitivity

Gersh 0.40 [0.12, 0.77]
Kirkhoff 0.91 [0.83, 0.95]
Reeve 0.85 [0.77, 0.91]
Shapiro 0.90 [0.78, 0.96]
Yoon 0.90 [0.86, 0.93]

Specificity

Gersh 0.79 [0.75, 0.83]
Kirkhoff 0.44 [0.39, 0.49]
Reeve 0.49 [0.46, 0.53]
Shapiro 0.58 [0.53, 0.63]
Yoon 0.63 [0.61, 0.66]
All - Forest plot for
Top: CXR (abnormal) and Bottom: CXR (suggests tuberculosis)

### Sensitivity

- Affolabi: 0.62 [0.52, 0.72]
- Ahmad: 0.73 [0.60, 0.83]
- Hanifa: 0.84 [0.73, 0.91]
- Kerkhoff: 0.73 [0.63, 0.81]
- Kurfa: 0.87 [0.68, 0.95]
- Modi: 0.75 [0.63, 0.84]
- Swindells: 0.54 [0.41, 0.66]
- Thil: 0.67 [0.35, 0.88]

### Specificity

- Affolabi: 0.78 [0.76, 0.79]
- Ahmad: 0.41 [0.37, 0.46]
- Hanifa: 0.41 [0.35, 0.46]
- Kerkhoff: 0.55 [0.50, 0.60]
- Kurfa: 0.65 [0.60, 0.70]
- Modi: 0.60 [0.56, 0.64]
- Swindells: 0.80 [0.77, 0.83]
- Thil: 0.65 [0.60, 0.69]

### Sensitivity

- Affolabi: 0.53 [0.42, 0.63]
- Ahmad: 0.62 [0.49, 0.73]
- Hanifa: 0.76 [0.64, 0.85]
- Kerkhoff: 0.71 [0.60, 0.79]
- Kurfa: 0.78 [0.58, 0.90]
- Modi: 0.56 [0.46, 0.66]
- Nguyen: 0.71 [0.53, 0.85]
- Swindells: 0.48 [0.35, 0.61]

### Specificity

- Affolabi: 0.92 [0.91, 0.93]
- Ahmad: 0.57 [0.53, 0.61]
- Hanifa: 0.55 [0.49, 0.60]
- Kerkhoff: 0.65 [0.60, 0.70]
- Kurfa: 0.85 [0.61, 0.88]
- Modi: 0.88 [0.84, 0.90]
- Nguyen: 0.71 [0.66, 0.75]
- Swindells: 0.87 [0.84, 0.89]

64
All - Forest plot for Lymphadenopathy

|                | Sensitivity | Specificity |
|----------------|-------------|-------------|
| Balcha         | 0.11 [0.07, 0.18] | 0.98 [0.97, 0.99] |
| Bjerrum        | 0.35 [0.22, 0.51] | 0.82 [0.78, 0.86] |
| Swindells      | 0.64 [0.51, 0.76] | 0.70 [0.66, 0.73] |
| Thit           | 0.20 [0.06, 0.51] | 0.93 [0.91, 0.95] |

0.06 0.41 0.76

0.66 0.83 0.99
All - Forest plot for
Top: W4SS with CRP (>=10 mg/L) and Bottom: W4SS then CRP (>=5 mg/L)

Sensitivity

| Study   | Effect Size |
|---------|-------------|
| Gersh   | 0.20 [0.04, 0.62] |
| Kerkhoff| 0.06 [0.02, 0.06] |
| Reeve   | 0.84 [0.75, 0.90] |
| Shapiro | 0.93 [0.81, 0.98] |
| Yoon    | 0.97 [0.93, 0.98] |

Specificity

| Study   | Effect Size |
|---------|-------------|
| Gersh   | 0.79 [0.75, 0.83] |
| Kerkhoff| 0.11 [0.08, 0.14] |
| Reeve   | 0.36 [0.32, 0.40] |
| Shapiro | 0.31 [0.27, 0.36] |
| Yoon    | 0.13 [0.11, 0.15] |

Sensitivity

| Study   | Effect Size |
|---------|-------------|
| Gersh   | 0.08 [0.01, 0.48] |
| Kerkhoff| 0.56 [0.77, 0.92] |
| Reeve   | 0.70 [0.50, 0.78] |
| Shapiro | 0.96 [0.72, 0.93] |
| Yoon    | 0.89 [0.85, 0.93] |

Specificity

| Study   | Effect Size |
|---------|-------------|
| Gersh   | 0.96 [0.93, 0.97] |
| Kerkhoff| 0.50 [0.46, 0.55] |
| Reeve   | 0.69 [0.66, 0.73] |
| Shapiro | 0.69 [0.64, 0.73] |
| Yoon    | 0.65 [0.63, 0.68] |
All - Forest plot for
W4SS with CXR (abnormal)

### Sensitivity

| Study          | Sensitivity | 95% CI       |
|----------------|-------------|--------------|
| Affolabi       | 0.85        | [0.76, 0.91] |
| Ahmad          | 0.91        | [0.80, 0.96] |
| Hanifa         | 0.98        | [0.91, 1.00] |
| Kerkhoff       | 0.98        | [0.92, 0.99] |
| Kufa           | 0.98        | [0.83, 1.00] |
| Modi           | 0.89        | [0.78, 0.94] |
| Swindell       | 0.93        | [0.82, 0.97] |
| Thit           | 0.05        | [0.66, 0.99] |

### Specificity

| Study          | Specificity | 95% CI       |
|----------------|-------------|--------------|
| Affolabi       | 0.60        | [0.58, 0.61] |
| Ahmad          | 0.23        | [0.20, 0.27] |
| Hanifa         | 0.02        | [0.01, 0.05] |
| Kerkhoff       | 0.09        | [0.06, 0.12] |
| Kufa           | 0.11        | [0.09, 0.15] |
| Modi           | 0.33        | [0.29, 0.38] |
| Swindell       | 0.32        | [0.28, 0.35] |
| Thit           | 0.36        | [0.32, 0.41] |
Figure S3B - Forest plots of sensitivity and specificity estimates in outpatients (on ART)

Outpatients (On ART) - Forest plot for W4SS

| Study     | Sensitivity  | Specificity  |
|-----------|--------------|--------------|
| Affolabi  | 0.47 [0.30, 0.64] | 0.81 [0.79, 0.83] |
| Ahmad     | 0.58 [0.39, 0.76] | 0.55 [0.50, 0.60] |
| Gersh     | 0.08 [0.01, 0.48] | 0.87 [0.84, 0.90] |
| Hoffmann  | 0.50 [0.05, 0.95] | 0.50 [0.13, 0.87] |
| Kuwa      | 0.94 [0.63, 0.99] | 0.17 [0.12, 0.23] |
| LaCourse  | 0.25 [0.05, 0.70] | 0.85 [0.78, 0.89] |
| Nguyen    | 0.53 [0.30, 0.75] | 0.65 [0.59, 0.71] |
| Rangaka   | 0.24 [0.13, 0.39] | 0.94 [0.92, 0.96] |
| Thit      | 0.78 [0.45, 0.94] | 0.55 [0.50, 0.60] |
Outpatients (On ART) - Forest plot for
Top: CRP (≥10 mg/L) and Bottom: CRP (≥5 mg/L)

Sensitivity

Specificity

Gersh 0.20 [0.04, 0.62]

Gersh 0.90 [0.67, 0.93]

0.04 0.48

0.87 0.92

Sensitivity

Specificity

Gersh 0.40 [0.12, 0.77]

Gersh 0.80 [0.75, 0.84]

0.12 0.61

0.75 0.82
Outpatients (On ART) - Forest plot for
Top: CXR (abnormal) and Bottom: CXR (suggests tuberculosis)

### Sensitivity

| Study  | Sensitivity | Lower CI | Upper CI |
|--------|-------------|----------|----------|
| Affolabi | 0.63        | 0.46     | 0.78     |
| Ahmad   | 0.78        | 0.58     | 0.90     |
| Kula    | 0.94        | 0.63     | 0.96     |
| Thil    | 0.62        | 0.31     | 0.86     |

### Specificity

| Study  | Specificity | Lower CI | Upper CI |
|--------|-------------|----------|----------|
| Affolabi | 0.76        | 0.74     | 0.78     |
| Ahmad   | 0.41        | 0.36     | 0.46     |
| Kula    | 0.67        | 0.60     | 0.73     |
| Thil    | 0.65        | 0.60     | 0.70     |

### Sensitivity

| Study  | Sensitivity | Lower CI | Upper CI |
|--------|-------------|----------|----------|
| Affolabi | 0.53        | 0.36     | 0.70     |
| Ahmad   | 0.78        | 0.56     | 0.90     |
| Kula    | 0.96        | 0.53     | 0.96     |
| Nguyen  | 0.73        | 0.48     | 0.89     |

### Specificity

| Study  | Specificity | Lower CI | Upper CI |
|--------|-------------|----------|----------|
| Affolabi | 0.92        | 0.90     | 0.93     |
| Ahmad   | 0.58        | 0.53     | 0.63     |
| Kula    | 0.85        | 0.79     | 0.89     |
| Nguyen  | 0.67        | 0.60     | 0.72     |
Outpatients (On ART) - Forest plot for BMI (<18.5 kg/m²)

### Sensitivity

- **Affolabi**: 0.30 [0.17, 0.48]
- **Ahmad**: 0.15 [0.05, 0.36]
- **Gersh**: 0.20 [0.04, 0.62]
- **Kufa**: 0.25 [0.07, 0.59]
- **LaCourse**: 0.10 [0.01, 0.54]
- **Rangaka**: 0.05 [0.01, 0.16]
- **Thit**: 0.33 [0.12, 0.65]

### Specificity

- **Affolabi**: 0.84 [0.83, 0.86]
- **Ahmad**: 0.93 [0.90, 0.96]
- **Gersh**: 0.88 [0.85, 0.91]
- **Kufa**: 0.94 [0.90, 0.97]
- **LaCourse**: 0.96 [0.92, 0.98]
- **Rangaka**: 0.98 [0.97, 0.99]
- **Thit**: 0.83 [0.79, 0.87]
Outpatients (On ART) - Forest plot for
Top: W4SS with CRP (>=10 mg/L) and Bottom: W4SS then CRP (>=5 mg/L)

Sensitivity

Specificity

Gersh 0.20 [0.04, 0.62]

Gersh 0.80 [0.75, 0.83]

0.04 0.48

0.75 0.81

Sensitivity

Specificity

Gersh 0.06 [0.01, 0.46]

Gersh 0.96 [0.93, 0.97]

0.01 0.36

0.93 0.96
Outpatients (On ART) - Forest plot for W4SS with CXR (abnormal)

**Sensitivity**

| Study  | Sensitivity |
|--------|-------------|
| Affolabi | 0.70 [0.52, 0.83] |
| Ahmad   | 0.87 [0.68, 0.95] |
| Kufa    | 0.94 [0.63, 0.99] |
| Thit    | 0.94 [0.63, 0.99] |

**Specificity**

| Study  | Specificity |
|--------|-------------|
| Affolabi | 0.64 [0.62, 0.67] |
| Ahmad   | 0.26 [0.22, 0.31] |
| Kufa    | 0.13 [0.09, 0.18] |
| Thit    | 0.37 [0.32, 0.42] |
Figure S3C - Forest plots of sensitivity and specificity estimates in outpatients (not on ART)

Outpatients (Not on ART) - Forest plot for W4SS

**Sensitivity**

| Study       | Sensitivity   |
|-------------|---------------|
| Affolabi    | 0.82 [0.70, 0.90] |
| Ahmad       | 0.94 [0.80, 0.98] |
| Balcha      | 0.93 [0.87, 0.96] |
| Bjerrum     | 0.96 [0.82, 0.99] |
| Hanifa      | 0.96 [0.87, 0.98] |
| Hoffmann    | 0.29 [0.16, 0.45] |
| Kemper      | 0.92 [0.65, 0.99] |
| Kerkhoff    | 0.93 [0.86, 0.97] |
| Kufa        | 0.97 [0.77, 1.00] |
| LaCourse    | 0.67 [0.21, 0.94] |
| Mbu         | 0.92 [0.87, 0.96] |
| Modi        | 0.72 [0.61, 0.81] |
| Nguyen      | 0.46 [0.23, 0.71] |
| Rangaka     | 0.48 [0.37, 0.58] |
| Reeve       | 0.74 [0.64, 0.82] |
| Shapiro     | 0.70 [0.38, 0.96] |
| Swindells   | 0.88 [0.76, 0.94] |
| Thit        | 0.75 [0.20, 0.97] |
| Yoon        | 0.96 [0.83, 0.98] |

**Specificity**

| Study       | Specificity   |
|-------------|---------------|
| Affolabi    | 0.59 [0.58, 0.62] |
| Ahmad       | 0.31 [0.24, 0.39] |
| Balcha      | 0.22 [0.19, 0.25] |
| Bjerrum     | 0.09 [0.07, 0.13] |
| Hanifa      | 0.06 [0.04, 0.09] |
| Hoffmann    | 0.84 [0.62, 0.86] |
| Kemper      | 0.44 [0.35, 0.55] |
| Kerkhoff    | 0.15 [0.12, 0.19] |
| Kufa        | 0.14 [0.10, 0.20] |
| LaCourse    | 0.77 [0.69, 0.83] |
| Mbu         | 0.15 [0.12, 0.17] |
| Modi        | 0.51 [0.48, 0.55] |
| Nguyen      | 0.62 [0.54, 0.70] |
| Rangaka     | 0.80 [0.76, 0.83] |
| Reeve       | 0.48 [0.45, 0.52] |
| Shapiro     | 0.37 [0.32, 0.42] |
| Swindells   | 0.35 [0.32, 0.39] |
| Thit        | 0.46 [0.38, 0.55] |
| Yoon        | 0.14 [0.12, 0.16] |
Outpatients (Not on ART) - Forest plot for Top: CRP (>=10 mg/L) and Bottom: CRP (>=5 mg/L)

**Sensitivity**

- Kenkoff: 0.86 [0.77, 0.92]
- Reeve: 0.78 [0.68, 0.85]
- Shapiro: 0.79 [0.64, 0.88]
- Yoon: 0.84 [0.79, 0.89]

**Specificity**

- Kenkoff: 0.57 [0.53, 0.62]
- Reeve: 0.64 [0.61, 0.68]
- Shapro: 0.72 [0.67, 0.76]
- Yoon: 0.74 [0.72, 0.77]

**Sensitivity**

- Kenkoff: 0.91 [0.83, 0.95]
- Reeve: 0.85 [0.77, 0.91]
- Shapiro: 0.90 [0.78, 0.96]
- Yoon: 0.90 [0.86, 0.93]

**Specificity**

- Kenkoff: 0.44 [0.39, 0.49]
- Reeve: 0.49 [0.46, 0.53]
- Shapiro: 0.58 [0.53, 0.63]
- Yoon: 0.63 [0.61, 0.66]
Outpatients (Not on ART) - Forest plot for
Top: CXR (abnormal) and Bottom: CXR (suggests tuberculosis)

**Sensitivity**

| Test       | Sensitivity |
|------------|-------------|
| Affolabi   | 0.62 [0.49, 0.73] |
| Ahmad      | 0.69 [0.51, 0.82] |
| Hanifa     | 0.84 [0.73, 0.91] |
| Karkhoff   | 0.73 [0.63, 0.81] |
| Kufa       | 0.80 [0.55, 0.93] |
| Modi       | 0.75 [0.63, 0.84] |
| Swindells  | 0.54 [0.41, 0.66] |
| Thill      | 0.75 [0.20, 0.97] |

**Specificity**

| Test       | Specificity |
|------------|-------------|
| Affolabi   | 0.81 [0.78, 0.83] |
| Ahmad      | 0.42 [0.35, 0.51] |
| Hanifa     | 0.41 [0.35, 0.46] |
| Karkhoff   | 0.55 [0.50, 0.60] |
| Kufa       | 0.63 [0.56, 0.70] |
| Modi       | 0.60 [0.56, 0.64] |
| Swindells  | 0.80 [0.77, 0.83] |
| Thill      | 0.63 [0.54, 0.71] |

**Sensitivity**

| Test       | Sensitivity |
|------------|-------------|
| Affolabi   | 0.53 [0.40, 0.65] |
| Ahmad      | 0.50 [0.34, 0.60] |
| Hanifa     | 0.76 [0.64, 0.85] |
| Karkhoff   | 0.71 [0.60, 0.79] |
| Kufa       | 0.73 [0.48, 0.80] |
| Modi       | 0.56 [0.46, 0.60] |
| Nguyen     | 0.69 [0.42, 0.87] |
| Swindells  | 0.48 [0.35, 0.61] |

**Specificity**

| Test       | Specificity |
|------------|-------------|
| Affolabi   | 0.93 [0.91, 0.95] |
| Ahmad      | 0.53 [0.45, 0.61] |
| Hanifa     | 0.55 [0.49, 0.60] |
| Karkhoff   | 0.65 [0.60, 0.70] |
| Kufa       | 0.85 [0.70, 0.90] |
| Modi       | 0.88 [0.84, 0.90] |
| Nguyen     | 0.77 [0.70, 0.83] |
| Swindells  | 0.87 [0.84, 0.89] |
Outpatients (Not on ART) - Forest plot for Top: Hb (<10 g/dL) and Bottom: Hb (<8 g/dL)

**Sensitivity**
- Balcha: 0.42 [0.34, 0.51]
- Bjerrum: 0.78 [0.61, 0.89]
- Hartla: 0.36 [0.27, 0.50]
- Hoffmann: 0.15 [0.04, 0.50]
- Kerkhoff: 0.36 [0.28, 0.46]
- Kutal: 0.38 [0.18, 0.61]
- Swinheils: 0.34 [0.23, 0.47]
- Thil: 0.50 [0.45, 0.95]

**Specificity**
- Balcha: 0.82 [0.79, 0.85]
- Bjerrum: 0.52 [0.46, 0.57]
- Hartla: 0.76 [0.71, 0.81]
- Hoffmann: 0.84 [0.82, 0.86]
- Kerkhoff: 0.87 [0.83, 0.90]
- Kutal: 0.84 [0.78, 0.88]
- Swinheils: 0.66 [0.63, 0.88]
- Thil: 0.61 [0.51, 0.70]

**Sensitivity**
- Balcha: 0.10 [0.06, 0.17]
- Bjerrum: 0.16 [0.07, 0.22]
- Hartla: 0.06 [0.02, 0.15]
- Hoffmann: 0.01 [0.00, 0.13]
- Kerkhoff: 0.14 [0.08, 0.23]
- Kutal: 0.25 [0.10, 0.40]
- Swinheils: 0.12 [0.06, 0.24]
- Thil: 0.50 [0.45, 0.95]

**Specificity**
- Balcha: 0.98 [0.96, 0.99]
- Bjerrum: 0.93 [0.75, 0.87]
- Hartla: 0.94 [0.91, 0.97]
- Hoffmann: 0.98 [0.97, 0.99]
- Kerkhoff: 0.96 [0.94, 0.98]
- Kutal: 0.98 [0.95, 0.99]
- Swinheils: 0.97 [0.96, 0.98]
- Thil: 0.91 [0.84, 0.95]
Outpatients (Not on ART) - Forest plot for BMI (<18.5 kg/m²)

Sensitivity

| Author  | Value       |
|---------|-------------|
| Affolabi | 0.56 [0.42, 0.68] |
| Ahmad   | 0.23 [0.11, 0.40] |
| Balcha  | 0.64 [0.55, 0.72] |
| Bjerrum | 0.64 [0.48, 0.78] |
| Hanifa  | 0.36 [0.25, 0.48] |
| Kemper  | 0.25 [0.09, 0.53] |
| Kerkhoff| 0.17 [0.10, 0.26] |
| Kufa    | 0.27 [0.11, 0.52] |
| LaCourse| 0.12 [0.01, 0.60] |
| Modi    | 0.45 [0.34, 0.57] |
| Rangaka | 0.14 [0.08, 0.23] |
| Reeve   | 0.21 [0.14, 0.30] |
| Shapiro | 0.21 [0.12, 0.36] |
| Swindells | 0.21 [0.13, 0.34] |
| Thit    | 0.75 [0.20, 0.97] |
| Yoon    | 0.42 [0.36, 0.49] |

Specificity

| Author  | Value       |
|---------|-------------|
| Affolabi | 0.74 [0.71, 0.77] |
| Ahmad   | 0.89 [0.83, 0.93] |
| Balcha  | 0.59 [0.55, 0.63] |
| Bjerrum | 0.68 [0.63, 0.73] |
| Hanifa  | 0.74 [0.68, 0.78] |
| Kemper  | 0.92 [0.84, 0.96] |
| Kerkhoff| 0.94 [0.92, 0.96] |
| Kufa    | 0.92 [0.87, 0.95] |
| LaCourse| 0.96 [0.91, 0.98] |
| Modi    | 0.80 [0.77, 0.83] |
| Rangaka | 0.98 [0.96, 0.99] |
| Reeve   | 0.92 [0.89, 0.93] |
| Shapiro | 0.95 [0.92, 0.96] |
| Swindells | 0.85 [0.82, 0.87] |
| Thit    | 0.78 [0.70, 0.85] |
| Yoon    | 0.83 [0.81, 0.85] |
Outpatients (Not on ART) - Forest plot for Lymphadenopathy

**Sensitivity**

- **Balcha**: 0.11 [0.07, 0.18]
- **Bjerrum**: 0.35 [0.22, 0.51]
- **Swindells**: 0.64 [0.51, 0.76]
- **Thit**: 0.25 [0.03, 0.80]

**Specificity**

- **Balcha**: 0.98 [0.97, 0.99]
- **Bjerrum**: 0.82 [0.78, 0.86]
- **Swindells**: 0.70 [0.66, 0.73]
- **Thit**: 0.95 [0.89, 0.98]
Outpatients (Not on ART) - Forest plot for Top: W4SS with CRP (>= 10 mg/L) and Bottom: W4SS then CRP (>= 5 mg/L)

**Sensitivity**
- Kenkhoft: 0.96 [0.92, 0.99]
- Reeve: 0.84 [0.75, 0.90]
- Shaprio: 0.93 [0.81, 0.98]
- Yoon: 0.97 [0.93, 0.98]

**Specificity**
- Kenkhoft: 0.11 [0.08, 0.14]
- Reeve: 0.36 [0.32, 0.40]
- Shaprio: 0.31 [0.27, 0.36]
- Yoon: 0.13 [0.11, 0.15]

**Sensitivity**
- Kenkhoft: 0.86 [0.77, 0.92]
- Reeve: 0.70 [0.59, 0.76]
- Shaprio: 0.96 [0.72, 0.93]
- Yoon: 0.89 [0.85, 0.93]

**Specificity**
- Kenkhoft: 0.50 [0.46, 0.55]
- Reeve: 0.69 [0.66, 0.73]
- Shaprio: 0.69 [0.64, 0.73]
- Yoon: 0.65 [0.63, 0.68]
Outpatients (Not on ART) - Forest plot for W4SS with CXR (abnormal)

| Sensitivity       | Specificity       |
|-------------------|-------------------|
| Affolabi          | 0.93 [0.83, 0.97] | Affolabi          | 0.50 [0.47, 0.54] |
| Ahmad             | 0.94 [0.80, 0.98] | Ahmad             | 0.15 [0.10, 0.22] |
| Hanifa            | 0.98 [0.91, 1.00] | Hanifa            | 0.02 [0.01, 0.05] |
| Kerkhoff          | 0.98 [0.92, 0.99] | Kerkhoff          | 0.09 [0.06, 0.12] |
| Kufa              | 0.97 [0.76, 1.00] | Kufa              | 0.10 [0.06, 0.16] |
| Modi              | 0.89 [0.78, 0.94] | Modi              | 0.33 [0.29, 0.38] |
| Swindells         | 0.93 [0.82, 0.97] | Swindells         | 0.32 [0.28, 0.35] |
| Thit              | 0.75 [0.20, 0.97] | Thit              | 0.34 [0.28, 0.43] |
Figure S3D - Forest plots of sensitivity and specificity estimates in participants with a CD4 cell count $\leq 200$ cells/µL

CD4 $\leq 200$ cells/µL - Forest plot for W4SS
CD4 <= 200 cells/µL - Forest plot for
Top: CXR (abnormal) and Bottom: CXR (suggests tuberculosis)

**Sensitivity**

| Author   | Sensitivity (95% CI) |
|----------|----------------------|
| Affolabi | 0.65 [0.50, 0.77]    |
| Ahmad    | 0.74 [0.55, 0.87]    |
| Hantfa   | 0.75 [0.57, 0.92]    |
| Karthoff | 0.74 [0.62, 0.83]    |
| Kutla    | 0.64 [0.62, 0.94]    |
| Modi     | 0.76 [0.60, 0.88]    |
| Swindells| 0.48 [0.31, 0.60]    |
| Thit     | 0.60 [0.23, 0.68]    |

**Specificity**

| Author   | Specificity (95% CI) |
|----------|----------------------|
| Affolabi | 0.77 [0.73, 0.80]    |
| Ahmad    | 0.43 [0.35, 0.51]    |
| Hantfa   | 0.41 [0.35, 0.47]    |
| Karthoff | 0.57 [0.51, 0.63]    |
| Kutla    | 0.60 [0.62, 0.68]    |
| Modi     | 0.50 [0.41, 0.58]    |
| Swindells| 0.74 [0.67, 0.79]    |
| Thit     | 0.54 [0.46, 0.62]    |

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**Sensitivity**

| Author   | Sensitivity (95% CI) |
|----------|----------------------|
| Affolabi | 0.56 [0.42, 0.60]    |
| Ahmad    | 0.59 [0.41, 0.70]    |
| Hantfa   | 0.76 [0.64, 0.85]    |
| Karthoff | 0.70 [0.58, 0.80]    |
| Kutla    | 0.74 [0.51, 0.88]    |
| Modi     | 0.59 [0.42, 0.74]    |
| Nguyen   | 0.67 [0.39, 0.86]    |
| Swindells| 0.44 [0.28, 0.63]    |

**Specificity**

| Author   | Specificity (95% CI) |
|----------|----------------------|
| Affolabi | 0.91 [0.89, 0.93]    |
| Ahmad    | 0.61 [0.53, 0.69]    |
| Hantfa   | 0.54 [0.46, 0.60]    |
| Karthoff | 0.65 [0.50, 0.71]    |
| Kutla    | 0.80 [0.73, 0.86]    |
| Modi     | 0.79 [0.71, 0.85]    |
| Nguyen   | 0.63 [0.51, 0.73]    |
| Swindells| 0.79 [0.73, 0.84]    |
CD4 <=200 cells/μL - Forest plot for BMI (<18.5 kg/m²)

### Sensitivity

| Study       | Sensitivity | 95% CI       |
|-------------|-------------|--------------|
| Affolabi    | 0.51        | [0.37, 0.65] |
| Ahmad       | 0.30        | [0.16, 0.51] |
| Al Darraj   | 0.29        | [0.08, 0.64] |
| Balcha      | 0.70        | [0.59, 0.79] |
| Bjerrum     | 0.72        | [0.52, 0.86] |
| Gersh       | 0.50        | [0.09, 0.91] |
| Hanifa      | 0.35        | [0.24, 0.48] |
| Kemper      | 0.30        | [0.11, 0.60] |
| Kerkhoff    | 0.19        | [0.11, 0.30] |
| Kufa        | 0.32        | [0.15, 0.54] |
| LaCourse    | 0.50        | [0.05, 0.95] |
| Modi        | 0.50        | [0.35, 0.65] |
| Rangaka     | 0.13        | [0.08, 0.21] |
| Reeve       | 0.22        | [0.12, 0.37] |
| Shapiro     | 0.24        | [0.11, 0.43] |
| Swindells   | 0.26        | [0.13, 0.45] |
| Thit        | 0.40        | [0.12, 0.77] |
| Yoon        | 0.48        | [0.39, 0.53] |

### Specificity

| Study       | Specificity | 95% CI       |
|-------------|-------------|--------------|
| Affolabi    | 0.68        | [0.64, 0.72] |
| Ahmad       | 0.87        | [0.81, 0.92] |
| Al Darraj   | 0.93        | [0.79, 0.98] |
| Balcha      | 0.50        | [0.44, 0.55] |
| Bjerrum     | 0.59        | [0.52, 0.65] |
| Gersh       | 0.85        | [0.72, 0.93] |
| Hanifa      | 0.74        | [0.69, 0.79] |
| Kemper      | 0.87        | [0.76, 0.94] |
| Kerkhoff    | 0.92        | [0.88, 0.95] |
| Kufa        | 0.90        | [0.84, 0.94] |
| LaCourse    | 0.92        | [0.71, 0.98] |
| Modi        | 0.72        | [0.64, 0.78] |
| Rangaka     | 0.97        | [0.96, 0.98] |
| Reeve       | 0.86        | [0.79, 0.90] |
| Shapiro     | 0.91        | [0.84, 0.95] |
| Swindells   | 0.76        | [0.69, 0.81] |
| Thit        | 0.78        | [0.71, 0.84] |
| Yoon        | 0.77        | [0.74, 0.80] |
CD4 <= 200 cells/µL - Forest plot for Lymphadenopathy

**Sensitivity**

- Balcha: 0.13 [0.07, 0.22]
- Bjerrum: 0.27 [0.14, 0.46]
- Swindells: 0.70 [0.52, 0.84]
- Thit: 0.40 [0.12, 0.77]

**Specificity**

- Balcha: 0.98 [0.95, 0.99]
- Bjerrum: 0.86 [0.81, 0.90]
- Swindells: 0.63 [0.56, 0.70]
- Thit: 0.91 [0.85, 0.94]
CD4 <=200 cells/μL - Forest plot for
Top: W4SS with CRP (>=10 mg/L) and Bottom: W4SS then CRP (>=5 mg/L)

### Sensitivity

- Gersh: 0.17 [0.02, 0.60]
- Korshoff: 0.97 [0.89, 0.99]
- Reeve: 0.95 [0.83, 0.99]
- Shapiro: 0.96 [0.80, 0.99]
- Yoon: 0.99 [0.97, 1.00]

### Specificity

- Gersh: 0.75 [0.60, 0.86]
- Korshoff: 0.10 [0.07, 0.14]
- Reeve: 0.23 [0.17, 0.31]
- Shapiro: 0.19 [0.12, 0.27]
- Yoon: 0.10 [0.08, 0.13]

### Sensitivity

- Gersh: 0.17 [0.02, 0.60]
- Korshoff: 0.84 [0.73, 0.91]
- Reeve: 0.85 [0.71, 0.93]
- Shapiro: 0.88 [0.70, 0.96]
- Yoon: 0.91 [0.87, 0.95]

### Specificity

- Gersh: 0.96 [0.86, 0.99]
- Korshoff: 0.48 [0.42, 0.54]
- Reeve: 0.50 [0.42, 0.68]
- Shapiro: 0.44 [0.35, 0.54]
- Yoon: 0.60 [0.57, 0.64]
CD4 <=200 cells/μL - Forest plot for
W4SS with CXR (abnormal)

**Sensitivity**

- Affolabi: 0.90 [0.78, 0.95]
- Ahmad: 0.89 [0.72, 0.96]
- Hanifa: 0.99 [0.93, 1.00]
- Kerkhoff: 0.97 [0.89, 0.99]
- Kufa: 0.98 [0.80, 1.00]
- Modi: 0.97 [0.84, 0.99]
- Swindells: 0.93 [0.77, 0.98]
- Thit: 0.02 [0.52, 0.99]

**Specificity**

- Affolabi: 0.45 [0.42, 0.49]
- Ahmad: 0.18 [0.13, 0.25]
- Hanifa: 0.02 [0.01, 0.04]
- Kerkhoff: 0.09 [0.06, 0.14]
- Kufa: 0.07 [0.04, 0.12]
- Modi: 0.16 [0.10, 0.23]
- Swindells: 0.22 [0.16, 0.28]
- Thit: 0.21 [0.15, 0.28]
Figure S3E - Forest plots of sensitivity and specificity estimates in participants with a CD4 cell count >200 cells/µL

CD4 >200 cells/µL - Forest plot for W4SS

|                | Sensitivity          | Specificity         |
|----------------|----------------------|---------------------|
| Affolabi       | 0.56 [0.39, 0.72]    | 0.60 [0.79, 0.82]   |
| Ahmad          | 0.73 [0.56, 0.86]    | 0.53 [0.48, 0.58]   |
| Al Darraj      | 0.68 [0.53, 0.98]    | 0.34 [0.24, 0.45]   |
| Balcha         | 0.87 [0.74, 0.94]    | 0.25 [0.21, 0.30]   |
| Bjerrum        | 0.90 [0.60, 0.98]    | 0.16 [0.11, 0.24]   |
| Gersh          | 0.12 [0.01, 0.60]    | 0.69 [0.84, 0.92]   |
| Hanifa         | 0.67 [0.21, 0.94]    | 0.07 [0.01, 0.30]   |
| Hoffmann       | 0.23 [0.10, 0.43]    | 0.85 [0.83, 0.87]   |
| Kemper         | 0.83 [0.31, 0.98]    | 0.66 [0.50, 0.79]   |
| Kerkhoff       | 0.88 [0.83, 1.00]    | 0.17 [0.12, 0.24]   |
| Kufa           | 0.90 [0.46, 0.99]    | 0.19 [0.14, 0.25]   |
| LaCourse       | 0.50 [0.19, 0.81]    | 0.79 [0.73, 0.84]   |
| Mbu            | 0.84 [0.71, 0.92]    | 0.19 [0.16, 0.23]   |
| Modi           | 0.50 [0.33, 0.67]    | 0.60 [0.55, 0.64]   |
| Nguyen         | 0.44 [0.23, 0.67]    | 0.65 [0.60, 0.71]   |
| Rangaka        | 0.29 [0.17, 0.46]    | 0.92 [0.90, 0.94]   |
| Reeve          | 0.59 [0.43, 0.72]    | 0.52 [0.48, 0.57]   |
| Shapiro        | 0.87 [0.62, 0.96]    | 0.43 [0.38, 0.49]   |
| Swindells      | 0.90 [0.74, 0.96]    | 0.40 [0.36, 0.45]   |
| Thit           | 0.50 [0.15, 0.85]    | 0.60 [0.54, 0.65]   |
| Yoon           | 0.84 [0.71, 0.92]    | 0.18 [0.15, 0.21]   |
CD4 >200 cells/μL - Forest plot for
Top: CXR (abnormal) and Bottom: CXR (suggests tuberculosis)

**Sensitivity**
- Affolabi: 0.56 [0.39, 0.72]
- Ahmad: 0.71 [0.53, 0.85]
- Hanifa: 0.50 [0.39, 0.61]
- Kerkhoff: 0.70 [0.49, 0.84]
- Kuila: 0.90 [0.46, 0.96]
- Modi: 0.68 [0.48, 0.83]
- Swindells: 0.59 [0.41, 0.75]
- Thil: 0.67 [0.21, 0.94]

**Specificity**
- Affolabi: 0.79 [0.77, 0.80]
- Ahmad: 0.41 [0.36, 0.46]
- Hanifa: 0.40 [0.20, 0.64]
- Kerkhoff: 0.51 [0.43, 0.59]
- Kuila: 0.69 [0.63, 0.75]
- Modi: 0.63 [0.58, 0.68]
- Swindells: 0.82 [0.78, 0.86]
- Thil: 0.70 [0.64, 0.75]

**Sensitivity**
- Affolabi: 0.44 [0.28, 0.61]
- Ahmad: 0.64 [0.46, 0.78]
- Hanifa: 0.50 [0.39, 0.61]
- Kerkhoff: 0.70 [0.49, 0.84]
- Kuila: 0.90 [0.46, 0.96]
- Modi: 0.48 [0.30, 0.67]
- Nguyen: 0.75 [0.51, 0.90]
- Swindells: 0.52 [0.34, 0.66]

**Specificity**
- Affolabi: 0.92 [0.91, 0.93]
- Ahmad: 0.55 [0.50, 0.60]
- Hanifa: 0.60 [0.36, 0.80]
- Kerkhoff: 0.64 [0.56, 0.72]
- Kuila: 0.89 [0.83, 0.92]
- Modi: 0.91 [0.87, 0.93]
- Nguyen: 0.73 [0.68, 0.78]
- Swindells: 0.90 [0.87, 0.93]

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CD4 >200 cells/μL - Forest plot for BMI (<18.5 kg/m²)

### Sensitivity

| Author       | Sensitivity | 95% CI     |
|--------------|-------------|------------|
| Affolabi     | 0.34        | [0.20, 0.52] |
| Ahmad        | 0.11        | [0.04, 0.27] |
| Al Darraj    | 0.06        | [0.01, 0.37] |
| Balcha       | 0.53        | [0.39, 0.67] |
| Bjerrum      | 0.40        | [0.17, 0.69] |
| Gersh        | 0.12        | [0.01, 0.60] |
| Hanifa       | 0.33        | [0.06, 0.79] |
| Kemper       | 0.17        | [0.02, 0.69] |
| Kerkhoff     | 0.12        | [0.04, 0.31] |
| Kufa         | 0.10        | [0.01, 0.54] |
| LaCourse     | 0.07        | [0.01, 0.44] |
| Modi         | 0.35        | [0.19, 0.54] |
| Rangaka      | 0.06        | [0.02, 0.19] |
| Reeve        | 0.20        | [0.10, 0.34] |
| Shapiro      | 0.20        | [0.07, 0.45] |
| Swindells    | 0.17        | [0.08, 0.35] |
| Thit         | 0.25        | [0.05, 0.70] |
| Yoon         | 0.27        | [0.16, 0.41] |

### Specificity

| Author       | Specificity | 95% CI     |
|--------------|-------------|------------|
| Affolabi     | 0.85        | [0.83, 0.87] |
| Ahmad        | 0.94        | [0.91, 0.96] |
| Al Darraj    | 0.93        | [0.86, 0.97] |
| Balcha       | 0.67        | [0.62, 0.72] |
| Bjerrum      | 0.83        | [0.75, 0.88] |
| Gersh        | 0.89        | [0.84, 0.92] |
| Hanifa       | 0.57        | [0.33, 0.79] |
| Kemper       | 0.99        | [0.88, 1.00] |
| Kerkhoff     | 0.98        | [0.94, 0.99] |
| Kufa         | 0.96        | [0.92, 0.98] |
| LaCourse     | 0.97        | [0.93, 0.98] |
| Modi         | 0.84        | [0.80, 0.88] |
| Rangaka      | 0.98        | [0.97, 0.99] |
| Reeve        | 0.94        | [0.92, 0.96] |
| Shapiro      | 0.96        | [0.93, 0.98] |
| Swindells    | 0.88        | [0.85, 0.91] |
| Thit         | 0.84        | [0.80, 0.88] |
| Yoon         | 0.91        | [0.88, 0.93] |
CD4 >200 cells/µL - Forest plot for Lymphadenopathy

**Sensitivity**

| Author    | Value   |
|-----------|---------|
| Balcha    | 0.09 [0.03, 0.20] |
| Bjerrum   | 0.60 [0.31, 0.83] |
| Swindells | 0.59 [0.41, 0.74] |
| Thit      | 0.10 [0.01, 0.54] |

**Specificity**

| Author   | Value     |
|----------|-----------|
| Balcha   | 0.98 [0.96, 0.99] |
| Bjerrum  | 0.75 [0.67, 0.82] |
| Swindells| 0.72 [0.68, 0.76] |
| Thit     | 0.95 [0.91, 0.97] |

0.01 0.42 0.83

0.67 0.83 0.99
CD4 >200 cells/μL - Forest plot for
Top: W4SS with CRP (>=10 mg/L) and Bottom: W4SS then CRP (>=5 mg/L)

**Sensitivity**

| Method | Gersh | Kerkhoff | Reeve | Shapiro | Yoon |
|--------|-------|----------|-------|---------|------|
|        | 0.33  | 0.96     | 0.72  | 0.87    | 0.84 |
|        | [0.06, 0.79] | [0.83, 1.00] | [0.56, 0.83] | [0.62, 0.96] | [0.71, 0.92] |

**Specificity**

| Method | Gersh | Kerkhoff | Reeve | Shapiro | Yoon |
|--------|-------|----------|-------|---------|------|
|        | 0.81  | 0.12     | 0.39  | 0.37    | 0.17 |
|        | [0.76, 0.86] | [0.08, 0.16] | [0.35, 0.44] | [0.31, 0.43] | [0.14, 0.20] |

**Sensitivity**

| Method | Gersh | Kerkhoff | Reeve | Shapiro | Yoon |
|--------|-------|----------|-------|---------|------|
|        | 0.12  | 0.92     | 0.40  | 0.80    | 0.80 |
|        | [0.01, 0.60] | [0.74, 0.98] | [0.34, 0.64] | [0.55, 0.93] | [0.66, 0.89] |

**Specificity**

| Method | Gersh | Kerkhoff | Reeve | Shapiro | Yoon |
|--------|-------|----------|-------|---------|------|
|        | 0.96  | 0.55     | 0.76  | 0.79    | 0.72 |
|        | [0.94, 0.98] | [0.48, 0.63] | [0.72, 0.80] | [0.74, 0.84] | [0.68, 0.76] |
CD4 >200 cells/µL - Forest plot for W4SS with CXR (abnormal)

| Sensitivity     | Specificity    |
|-----------------|----------------|
| Affolabi        | 0.75 [0.58, 0.87] | 0.65 [0.63, 0.67] |
| Ahmad           | 0.93 [0.77, 0.98] | 0.25 [0.21, 0.30] |
| Hanifa          | 0.50 [0.09, 0.91] | 0.07 [0.01, 0.30] |
| Kerkhoff        | 0.98 [0.83, 1.00] | 0.08 [0.05, 0.14] |
| Kufa            | 0.90 [0.46, 0.99] | 0.15 [0.11, 0.21] |
| Modi            | 0.76 [0.57, 0.89] | 0.40 [0.35, 0.45] |
| Swindells       | 0.93 [0.77, 0.98] | 0.36 [0.31, 0.40] |
| Thit            | 0.88 [0.40, 0.99] | 0.44 [0.38, 0.50] |
Figure S3F - Forest plots of sensitivity and specificity estimates in pregnant participants

Pregnant - Forest plot for W4SS
Pregnant - Forest plot for
Top: CRP (>=10 mg/L) and Bottom: CRP (>=5 mg/L)

Sensitivity

Kerkhoff 0.50 [0.05, 0.95]
Yoon 0.63 [0.31, 0.99]

Specificity

Kerkhoff 0.32 [0.16, 0.54]
Yoon 0.73 [0.58, 0.84]
Pregnant - Forest plot for
Top: CXR (abnormal) and Bottom: CXR (suggests tuberculosis)

Sensitivity

Specificity

Modi
0.75 [0.20, 0.97]
0.69 [0.36, 0.90]

0.20   0.78
0.36   0.76

Sensitivity

Specificity

Modi
0.75 [0.20, 0.97]
0.93 [0.56, 0.99]

0.20   0.78
0.56   0.88
Pregnant - Forest plot for
Top: Hb (<10 g/dL) and Bottom: Hb (<8 g/dL)

### Sensitivity

- **Bjerrum**: 0.50 [0.05, 0.05]
- **Hoffmann**: 0.18 [0.08, 0.34]
- **Kerkhoff**: 0.50 [0.05, 0.95]
- **Kuja**: 0.75 [0.20, 0.97]
- **Swindells**: 0.25 [0.03, 0.80]

### Specificity

- **Bjerrum**: 0.50 [0.31, 0.60]
- **Hoffmann**: 0.84 [0.82, 0.86]
- **Kerkhoff**: 0.69 [0.48, 0.85]
- **Kuja**: 0.77 [0.48, 0.93]
- **Swindells**: 0.75 [0.44, 0.92]

### Sensitivity

- **Bjerrum**: 0.50 [0.05, 0.05]
- **Hoffmann**: 0.01 [0.00, 0.13]
- **Kerkhoff**: 0.25 [0.03, 0.80]
- **Kuja**: 0.25 [0.03, 0.80]

### Specificity

- **Bjerrum**: 0.89 [0.70, 0.97]
- **Hoffmann**: 0.96 [0.97, 0.99]
- **Kerkhoff**: 0.95 [0.66, 1.00]
- **Swindells**: 0.95 [0.66, 0.90]
Pregnant - Forest plot for BMI (<18.5 kg/m²)

Sensitivity

| Study   | Sensitivity   |
|---------|---------------|
| Bjerrum | 0.25 [0.03, 0.80] |
| Kufa    | 0.25 [0.03, 0.80] |
| LaCourse| 0.06 [0.01, 0.40] |
| Modi    | 0.17 [0.02, 0.69] |
| Swindells| 0.25 [0.03, 0.80] |
| Yoon    | 0.83 [0.31, 0.98] |

Specificity

| Study   | Specificity   |
|---------|---------------|
| Bjerrum | 0.93 [0.76, 0.98] |
| Kufa    | 0.95 [0.66, 0.99] |
| LaCourse| 0.96 [0.93, 0.98] |
| Modi    | 0.98 [0.92, 1.00] |
| Swindells| 0.75 [0.44, 0.92] |
| Yoon    | 0.94 [0.83, 0.98] |

0.01 0.49 0.98

0.44 0.72 1.00
Pregnant - Forest plot for Lymphadenopathy

Sensitivity

Bjerrum 0.25 [0.03, 0.80]
Swindells 0.25 [0.03, 0.80]

Specificity

Bjerrum 0.90 [0.72, 0.97]
Swindells 0.55 [0.27, 0.80]
Pregnant - Forest plot for
Top: W4SS with CRP (>=10 mg/L) and Bottom: W4SS then CRP (>=5 mg/L)

| Sensitivity          | Specificity          |
|----------------------|----------------------|
| Kerkhoff             | Kerkhoff             |
| 0.50 [0.05, 0.95]    | 0.22 [0.10, 0.44]    |
| Yoon                 | Yoon                 |
| 0.83 [0.31, 0.96]    | 0.18 [0.06, 0.32]    |

Sensitivity

| Sensitivity          | Specificity          |
|----------------------|----------------------|
| Kerkhoff             | Kerkhoff             |
| 0.50 [0.05, 0.95]    | 0.57 [0.36, 0.76]    |
| Yoon                 | Yoon                 |
| 0.83 [0.31, 0.96]    | 0.65 [0.50, 0.78]    |

Specificity
Pregnant - Forest plot for
W4SS with CXR (abnormal)

Sensitivity

Specificity

Modi

0.75 [0.20, 0.97]

0.56 [0.28, 0.83]

0.20 0.59 0.97

0.26 0.54 0.83

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Pregnant - Forest plot for
Top: W4SS then Xpert and Bottom: Xpert alone

Sensitivity

LaCourse 0.31 [0.10, 0.64]
Modi 0.42 [0.14, 0.70]
Yoon 0.50 [0.13, 0.87]

Specificity

LaCourse 1.00 [0.96, 1.00]
Modi 1.00 [0.96, 1.00]
Yoon 0.99 [0.90, 1.00]
Figure S4 - Summary receiver operating characteristics curves in all participants and subgroups (for tests/strategies with >=2 studies available)
Figure S4A - Summary receiver operating characteristics curves comparing each test and WHO four-symptom screen for the detection of tuberculosis in all participants
Figure S4B - Summary receiver operating characteristics curves comparing each test and WHO four-symptom screen for the detection of tuberculosis in outpatients (on ART)
Figure S4C - Summary receiver operating characteristics curves comparing each test and WHO four-symptom screen for the detection of tuberculosis in outpatients (not on ART)
Outpatients (Not on ART) - ROC curve for Xpert alone
Figure S4D: Summary receiver operating characteristics curves comparing each test and WHO four-symptom screen for the detection of tuberculosis in participants with a CD4 cell count $\leq 200$ cells/µL.
CD4 ≤ 200 cells/µL - ROC curve for Xpert alone
Figure S4E - Summary receiver operating characteristics curves comparing each test and WHO four-symptom screen for the detection of tuberculosis in participants with a CD4 cell count >200 cells/µL.
CD4 >200 cells/μL - ROC curve for Hb (<10 g/dL)

CD4 >200 cells/μL - ROC curve for Hb (<8 g/dL)

CD4 >200 cells/μL - ROC curve for BMI (<18.5 kg/m²)

CD4 >200 cells/μL - ROC curve for Lymphadenopathy
CD4 >200 cells/μL - ROC curve for Xpert alone
Figure S4F - Summary receiver operating characteristics curves comparing each test and WHO four-symptom screen for the detection of tuberculosis in pregnant participants.
Pregnant participants - ROC curve for Hb (<8 g/dL)

Pregnant participants - ROC curve for BMI (<18.5 kg/m²)

Pregnant participants - ROC curve for W4SS then Xpert

Pregnant participants - ROC curve for Xpert alone
Figure S5 - Funnel plots (for tests/strategies with >=10 studies available)

Figure S5A - Funnel plots in all participants
Figure S5B - Funnel plots in outpatients (on ART)
Figure S5C - Funnel plots in outpatients (not on ART)
Figure S5D - Funnel plots in participants with a CD4 cell count \( \leq 200 \) cells/\( \mu L \)
Figure S5E - Funnel plots in participants with a CD4 cell count >200 cells/µL
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