

Parameter	Value (95% interval)	Prior distribution	Source
Parameter values for main analysis			
Prevalence of TB among individuals with presumptive TB (p^{tb})	5 – 50% (main analysis: 25%)	---	Assumption
Smear microscopy			
Specificity ($sp_{1,1}^{t1}, sp_{2,1}^{t1}$)	0.98 (0.96, 0.99)	Beta(318, 6.50)	1
Sensitivity, HIV-negative ($se_{1,1}^{t1}$)*	0.63 (0.52, 0.70)	Beta(68.7, 40.4)	1
Sensitivity, HIV-positive ($se_{2,1}^{t1}$)*	0.51 (0.43–0.59)	Beta(75.7, 72.8)	2
Rapid diagnostic test (Xpert Ultra)			
Specificity ($sp_{1,2}^{t1}, sp_{2,2}^{t1}$)	0.96 (0.93, 0.97)	Beta(349, 14.5)	3
Sensitivity, HIV-negative ($se_{1,2}^{t1}$)*	0.91 (0.86, 0.95)	Beta(139, 13.7)	3
Sensitivity, HIV-positive ($se_{2,2}^{t1}$)*	0.88 (0.75, 0.94)	Beta(37.5, 5.11)	3
Fraction culture-negative ($p^{cult-neg}$) [‡]	0.15 (0.10, 0.25)	Beta(12.7, 72.2)	4
Clinical diagnosis (Binormal model)			
Specificity (sp^{t2})	0.50 (0.025, 0.975)	Beta(1.0, 1.0)	Uninformative prior
Sensitivity [§] (se^{t2})	See Fig. S2, blue line	Multivariate Normal: Mu = [1.288 0.880] VCV = $\begin{bmatrix} 0.015 & 0.011 \\ 0.011 & 0.010 \end{bmatrix}$	5-16
Log-odds of clinical diagnosis, HIV-positive vs. HIV-negative	0.52 (0.21, 0.84)	Normal(0.519, 0.163)	17
Log-odds of clinical diagnosis, RDT vs. smear microscopy	-0.56 (-1.20, 0.08)	Normal(-0.562, 0.326)	17
Parameter values for sensitivity analyses			
Sensitivity of clinical diagnosis, optimistic assumption	See Fig. S2, purple line	Multivariate Normal: Mu = [2.210 1.116] VCV = $\begin{bmatrix} 0.010 & 0.008 \\ 0.008 & 0.009 \end{bmatrix}$	Assumption
Sensitivity of clinical diagnosis, pessimistic assumption	See Fig. S2, grey line	Multivariate Normal: Mu = [0.521 0.685] VCV = $\begin{bmatrix} 0.043 & 0.026 \\ 0.026 & 0.017 \end{bmatrix}$	Assumption
Rapid diagnostic test (Xpert MTB RIF)			
Specificity	0.98 (0.97, 0.99)	Beta(728, 14.9)	18
Sensitivity, HIV-negative*	0.88 (0.83, 0.92)	Beta(174, 23.8)	18
Sensitivity, HIV-positive*	0.81 (0.75, 0.86)	Beta(157, 36.8)	18
Fraction not receiving initial bacteriological test (κ , assumed = 0.0 in main analysis)	0.25 (0.10, 0.40)	Beta(7.58, 22.7)	Assumption
Log-odds of clinical diagnosis, [§] no bacteriological test vs. smear microscopy (used in sensitivity analysis)	0.69 (0.41, 1.10)	Normal(0.916, 0.178)	Assumption