SUPPLEMENTARY DATA

Sensitivity analysis and Multiple imputation models

To assess the effect of missing values for the status of infection in the estimation of odds ratios we performed additional analyses.

Firstly, we developed a restricted model (complete case analysis) including only the contacts with a conclusive TST and IGRA result. The results of this analysis are presented in the main manuscript.

Secondly, we used multiple imputation by chained equations to impute missing data for LTBI status[1]. For this we created thirty versions of a complete dataset and combined them for the final inference. The imputation model included all variables associated with the contact status on the restricted analysis, together with variables statistically associated with a missing contact status. See table A1-1 for results.

Thirdly, we made two assumptions that would help us to understand on what range our real estimates would be. We first assumed that all children with an unknown infection-status (no TST and IGRA results, or one non-available and the other negative) would be infected, and secondly, that they would all be non-infected. See table A1-2 for results.

The final imputed multivariable model was consistent with the restricted analysis, with the age-cavities interaction becoming statistically significant. In addition, the findings of the sensitivity analysis assuming all the non-conclusive as infected were the most consistent with the findings of the restricted and imputed models.

Table A1-1. Univariate restricted model and multiple imputation model. (OR: unadjusted odds ratio; CI: confidence interval)

	Analysis restricted to contacts with both tests results available (n=107)			Multiple imputation model (n=147)		
	OR	95% CI	p-value	OR	95% CI	p-value
Female gender	1.15	(0.54 - 2.48)	0.713	1.32	(0.65 - 2.69)	0.440
≥5 years of age[*]	2.00	(0.88 4.55)	0.098	1.24	(0.59 2.59)	0.571
Living in Yerevan	1.16	(0.50 - 2.72)	0.731	1.25	(0.56 - 2.80)	0.593
BCG vaccination scar	1.24	(0.57 - 2.69)	0.582	1.35	(0.65 - 2.78)	0.417
≤ 4 rooms in household[†]	7.87	(2.07 - 29.97)	**0.002**	6.38	(1.87 - 21.78)	**0.003**
> 3 bedrooms in household [‡]	3.73	(0.42 - 33.06)	0.237	1.72	(0.31 - 9.56)	0.536
> 7 people living in household	3.98	(0.83 - 19.14)	0.085	2.28	(0.51 - 10.12)	0.277
≥1.5 person per room[§]	3.12	(1.37 - 7.11)	**0.007**	2.67	(1.24 - 5.75)	**0.012**
Child sleeps in same house as index case	3.06	(1.20 - 7.81)	**0.020**	2.25	(0.97 - 5.24)	0.060
Child sleeps in same room as index case	1.16	(0.50 - 2.72)	0.731	1.10	(0.48 - 2.51)	0.826

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[1] Groenwold RHH, Donders ART, Roes KCB, *et al*. Dealing With Missing Outcome Data in Randomized Trials and Observational Studies. *Am J Epidemiol* 2012;**175**:210–7. doi:10.1093/aje/kwr302

Infant or sibling of index case	3.50	(1.56 - 7.82)	**0.002**	2.81	(1.34 - 5.91)	**0.006**
Children exposed daily to index case	2.33	(0.81 - 6.67)	0.116	1.54	(0.60 - 3.93)	0.369
TST done previously	4.10	(1.82 - 9.21)	**0.001**	2.51	(1.18 - 5.32)	**0.017**
Index case age‖						
<30	0.12	(0.04 - 0.37)	**<0.001**	0.13	(0.05 - 0.38)	**<0.001**
30-50	Ref			Ref		
> 50 years	0.13	(0.05 - 0.35)	**<0.001**	0.16	(0.06 - 0.41)	**<0.001**
Index case smear result ¶						
Neg	Ref			Ref		
<++	3.87	(1.20 - 12.44)	**0.023**	4.02	(1.34 - 12.03)	**0.013**
++/+++	4.72	(1.92 - 11.58)	**0.001**	3.81	(1.61 - 8.98)	**0.002**
Index case with lung cavities	2.95	(0.92 - 9.50)	0.070	2.93	(0.91 - 9.37)	0.070
Index case coughing	1.56	(0.61 - 3.99)	0.355	1.39	(0.54 - 3.60)	0.492
Index case previously treated for TB	2.61	(1.15 - 5.96)	**0.022**	1.76	(0.82 - 3.77)	0.146
MDR-TB source case	1.08	(0.46 - 2.53)	0.854	1.15	(0.49 - 2.69)	0.740
Exposure to other patients with DRTB	3.73	(0.42 - 33.06)	0.237	4.31	(0.94 - 19.80)	0.061

*p for trend: 0.111

† p-trend: 0.149

‡ p-trend: 0.932

§ p-trend: 0.430

‖ p-trend: 0.101

¶ p-trend: 0.001

*p for trend:0.480

† p-trend: 0.214

‡ p-trend: 0.908

§ p-trend: 0.833

‖ p-trend: 0.127

¶ p-trend: 0.001

Table A1-2. Multivariable restricted model, sensitivity analysis and multiple imputation comparison table.

	Analysis restricted to contacts with both tests results available (n=107)			Multiple Imputation model (n=144)*			All non-conclusive/missing as Infected (n=144)*			All non-conclusive/missing as Non-infected (n=147)		
	aOR	95% CI	p-value	aOR	95% CI	p-value	aOR	95% CI	p-value	aOR	95% CI	p-value
≥1.5 person per household room	4.87	(1.44 - 16.45)	**0.011**	3.90	(1.28 - 11.93)	**0.017**	4.20	(1.43 - 12.37)	**0.009**	3.27	(1.35 - 7.91)	**0.009**
IC <50 years old												
<30	0.17	(0.03 - 0.83)	**0.029**	0.14	(0.03 - 0.62)	**0.009**	0.07	(0.02 - 0.31)	**0.001**	0.50	(0.15 - 1.67)	0.264
30-50	Ref			Ref			Ref			Ref		
> 50 years	0.17	(0.05 - 0.61)	**0.006**	0.11	(0.03 - 0.36)	**<0.001**	0.13	(0.04 - 0.41)	**0.001**	0.31	(0.13 - 0.78)	**0.012**
IC smear result												
Neg	Ref			Ref			Ref			Ref		
<++	2.49	(0.49 - 12.74)	0.273	2.98	(0.68 - 13.04)	0.147	2.72	(0.63 - 11.69)	0.179	3.83	(1.01 - 14.50)	**0.048**
++/+++	4.85	(1.35 - 17.45)	**0.015**	4.14	(1.38 - 12.40)	**0.011**	5.40	(1.73 - 16.92)	**0.004**	2.70	(1.05 - 6.98)	**0.040**
Child sleeps in same house as IC	5.50	(1.28 - 23.67)	**0.022**	4.53	(1.36 - 15.15)	**0.014**	5.85	(1.73 - 19.79)	**0.005**	3.78	(1.27 - 11.27)	**0.017**
TST done previously	3.64	(1.08 - 12.28)	**0.037**	.	. .	.	2.29	(0.80 - 6.51)	0.121	2.87	(1.24 - 6.64)	**0.014**
Interaction contact age * cavities	0.03	(0.00 - 1.19)	0.062	0.03	(0.00 - 0.94)	**0.046**	0.01	(0.00 - 0.24)	**0.006**	0.17	(0.01 - 3.46)	0.250
Contact age ≥5 if IC had no cavities	60.39	(1.80 - 2023.06)	**0.022**	26.21	(1.06 - 649.95)	**0.046**	77.90	(2.59 - 2344.97)	**0.012**			
Contact age ≥5 if IC had cavities	1.86	(0.45 - 7.68)	0.390	0.79	(0.25 - 2.47)	0.681	0.53	(0.18 - 1.60)	0.260			
IC with lung cavities if contact age <5	40.85	(2.02 - 825.02)	**0.016**	74.97	(4.82 - 1166.41)	**0.002**	195.08	(10.84 - 3511.27)	**<0.001**			
IC with lung cavities if contact age >5	1.26	(0.15 - 10.40)	0.831	2.25	(0.24 - 21.10)	0.477	1.33	(0.16 - 11.02)	0.793			

aOR: adjusted odds ratio; CI: confidence interval; IC: index case

* Three children had no information regarding the presence of lung cavities on their index case