

Table S1. Strategy used for search database to identify studies for systematic review

1. MEDLINE		Results
1	exp Latent Tuberculosis/ or exp Tuberculin Test/ or exp Tuberculin/ or exp Interferon-gamma Release Tests/ or (latent tuberculosis or tuberculin or Interferon Gamma Release or IGRA or QuantiFERON or t spot).ti,ab,kw.	10021
2	exp Health Personnel/ or exp Students, Medical/ or exp Students, Nursing/ or exp Community Health Workers/ or (Physician* or Nurs*).ti,ab,kw. or ((Health* or Medica*) and (worker* or personnel* or professional* or staff* or student*)).ti,ab,kw.	781514
3	exp Infectious Disease Transmission, Professional-to-Patient/ or exp Infectious Disease Transmission, Patient-to-Professional/ or exp Occupational Exposure/ or exp Occupational Diseases/ or (nosocomial or Occupational Exposure* or Occupational Disease*).ti,ab,kw.	109106
4	2 or 3	857556
9	1 and 4	1231
10	limit 9 to (humans and yr="2005 -Current")	757
2. EMBASE		
1	exp Latent Tuberculosis/ or exp Tuberculin Test/ or exp Tuberculin/ or exp interferon gamma release assay/ or (latent tuberculosis or tuberculin or Interferon Gamma Release or IGRA or QuantiFERON or t spot).ti,ab,kw.	34784
2	exp health care personnel/ or exp medical student/ or exp nursing student/ or (Physician* or Nurs*).ti,ab,kw. or ((Health* or Medica*) and (worker* or personnel* or professional* or staff* or student*)).ti,ab,kw.	1979172
3	exp Occupational Exposure/ or exp Occupational Diseases/ or (nosocomial or Occupational Exposure* or Occupational Disease*).ti,ab,kw.	233519
4	2 or 3	2162720
5	1 and 4	3462
10	limit 9 to (humans and yr="2005 -Current")	2079
3. Web of Science		
1	TOPIC: (latent tuberculosis) <i>OR</i> TOPIC: (tuberculin test) <i>OR</i> TOPIC: (tuberculin) <i>OR</i> TOPIC: (interferon gamma release assay) <i>OR</i> TITLE: (latent tuberculosis) <i>OR</i> TITLE: (tuberculin test) <i>OR</i> TITLE: (tuberculin) <i>OR</i> TITLE: (interferon gamma release assay) <i>OR</i> TITLE: (IGRA) <i>OR</i> TITLE: (QuantiFERON) <i>OR</i> TITLE: (t spot)	8520

	<i>Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=2005-2017</i>	
2	<p>TOPIC: (health care worker*) <i>OR</i> TOPIC: (health personnel*) <i>OR</i> TOPIC: (physician*) <i>OR</i> TOPIC: (nurs*) <i>OR</i> TOPIC: (medical student*) <i>OR</i> TOPIC: (nursing student*) <i>OR</i> TITLE:(health care worker) <i>OR</i> TITLE: (health personnel*) <i>OR</i> TITLE: (physician*) <i>OR</i> TITLE: (nurs*)<i>OR</i> TITLE: (medical student*) <i>OR</i> TITLE: (nursing student*)</p> <p><i>Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=2005-2017</i></p>	356594
3	<p>TOPIC: (Infectious Disease Transmission, Professional-to-Patient) <i>OR</i> TOPIC: (Infectious Disease Transmission, Patient-to-Professional) <i>OR</i> TOPIC: (Occupational Exposure) <i>OR</i> TOPIC: (Occupational Diseases) <i>OR</i> TOPIC: (nosocomial exposure) <i>OR</i> TITLE: (Infectious Disease Transmission, Professional-to-Patient) <i>OR</i> TITLE: (Infectious Disease Transmission, Patient-to-Professional) <i>OR</i> TITLE: (Occupational Exposure) <i>OR</i> TITLE: (Occupational Diseases) <i>OR</i> TITLE: (nosocomial exposure)</p> <p><i>Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=2005-2017</i></p>	29572
4	<p>#3 <i>OR</i> #2</p> <p><i>Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=2005-2017</i></p>	381969
5	<p>#4 <i>AND</i> #2</p> <p><i>Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI, CCR-EXPANDED, IC Timespan=2005-2017</i></p>	701

Table S2. Study quality assessment

Items	Quality	Description/Definition
1. Selection of the participants Sampling strategy?	<input type="checkbox"/> High	Census sampling (total population) or random sampling
	<input type="checkbox"/> Medium	-
	<input type="checkbox"/> Low	Convenience sampling (participants were recruited because they were the easiest to recruit for the study, it can be participants who admitted to the occupational department, medical check up, routine screening, etc.)
	<input type="checkbox"/> Not clear	Not reported/not stated clearly
2. Measurement of the exposure	<input type="checkbox"/> High	For cross-sectional study: Questionnaire verified by medical record/data provided by health facility manager For cohort study: diary or log book or questionnaire verified by medical record/data provided by health facility manager
	<input type="checkbox"/> Medium	For cross-sectional study: Questionnaire not verified by medical record/data provided by health facility manager For cohort study: Questionnaire not verified by medical record/data provided by health facility manager and any serial questionnaire for serial testing
	<input type="checkbox"/> Low	No questionnaire provided and data only based on job type, location, other proxies
	<input type="checkbox"/> Not clear	Not reported/not stated clearly
3. Measurement of the outcome	<input type="checkbox"/> High	Used the standard methods for TST or commercial assays for IGRA and definition based on the protocol or manufacturer
	<input type="checkbox"/> Medium	Used the standard methods for TST or commercial assays for IGRA BUT definition not based on the protocol or manufacturer
	<input type="checkbox"/> Low	-
	<input type="checkbox"/> Not clear	Not reported/not stated clearly
4.1. Response rate (for prevalence)	<input type="checkbox"/> High	More than 80%
	<input type="checkbox"/> Medium	50-80%
	<input type="checkbox"/> Low	Less than 50%

Items	Quality	Description/Definition
	<input type="checkbox"/> Not clear	Not reported/not stated clearly
4.2. Retention rate (for incidence)	<input type="checkbox"/> High	More than 90%
	<input type="checkbox"/> Medium	50-90%
	<input type="checkbox"/> Low	Less than 50%
	<input type="checkbox"/> Not clear	Not reported/not stated clearly
5. Results	<input type="checkbox"/> High	For cross-sectional study: reported prevalence with 95% CI and adjusted POR with 95% CI For cohort study: reported incidence with 95% CI and adjusted IRR/OR/RR/HR with 95% CI
	<input type="checkbox"/> Medium	For cross-sectional study: reported prevalence with 95% CI and not adjusted (crude) POR with 95% CI For cohort study: reported incidence with 95% CI and not adjusted (crude) IRR/OR/RR/HR with 95% CI
	<input type="checkbox"/> Low	-
	<input type="checkbox"/> Not clear	Not reported/not stated clearly
SUMMARY	<input type="checkbox"/> High quality	<ul style="list-style-type: none"> - Sampling strategy: census or random sampling AND - Participation rate: response rate >80% for prevalence or retention rate >90% for incidence
	<input type="checkbox"/> Medium quality	<ul style="list-style-type: none"> - Sampling strategy: census or random sampling AND - Participation rate: response rate between 50%-80% for prevalence or retention rate between 50%-90% for incidence
	<input type="checkbox"/> Low quality	<ul style="list-style-type: none"> - Sampling strategy: convenience sampling or not clear AND/OR - Participation rate: <50% or not clear

Table S2a. Quality assessment of cross-sectional studies

Author	Year	Type of test	1. Selection of the participants	2. Measurement of the exposure	3. Measurement of the outcome	4. Response rate	5. Reported results	SUMMARY
Agaya	2015	TST	High	Medium	High	Medium	High	Medium
Babayigit	2014	TST & IGRA	Not clear	Medium	High	Not clear	Medium	Low
Bandyopadhyay	2010	IGRA	Not clear	Not clear	High	Not clear	Medium	Low
Belo	2017	TST	High	Medium	High	Medium	High	Medium
Bozkanat	2016	TST & IGRA	Not clear	Medium	High	Not clear	Medium	Low
Caglayan	2011	TST & IGRA	Not clear	Medium	High	Not clear	Medium	Low
Christopher	2010	TST	High	High	High	High	High	High
Da Costa	2006	TST	Not clear	Not clear	High	Not clear	Medium	Low
Dagnew	2012	TST & IGRA	Low	Medium	High	High	High	Low
de Oliveira	2007	TST	High	Medium	High	Not clear	Medium	Low
de Souza	2014	TST & IGRA	Not clear	Medium	High	Not clear	High	Low
Drobniewski	2007	IGRA	High	Medium	High	High	High	High
El-Sokkary	2015	TST & IGRA	High	Medium	High	High	Medium	High
Encinales	2010	TST	Not clear	Not clear	High	Not clear	Medium	Low
Franco	2006	TST	High	Medium	High	High	Medium	High
Gupta	2015	IGRA	Low	Medium	High	Not clear	Medium	Low
He	2010	TST	High	Medium	High	High	High	High
He	2012	TST & IGRA	High	Medium	High	Medium	High	Medium
Hefzy	2016	TST & IGRA	Not clear	Medium	High	Not clear	Medium	Low
Islam	2014	TST	High	Medium	High	High	Medium	High
Kargi	2017	TST & IGRA	Not clear	Medium	High	Not clear	Medium	Low

Author	Year	Type of test	1. Selection of the participants	2. Measurement of the exposure	3. Measurement of the outcome	4. Response rate	5. Reported results	SUMMARY
Khawcharoenporn	2009	TST	High	Medium	High	Medium	High	Medium
Kwacharoenporn	2016	TST & IGRA	Low	High	High	High	Medium	Low
Lien	2009	TST & IGRA	High	Medium	High	High	High	High
Liu	2015	IGRA	Not clear	Not clear	High	Not clear	Medium	Low
Lou	2015	TST	High	Medium	High	High	High	High
Maciel	2007	TST	High	Medium	High	High	Medium	High
Mirtskulava	2008	TST & IGRA	Not clear	Medium	High	Not clear	High	Low
Mostafavi	2016	TST & IGRA	High	Medium	High	High	Medium	High
Munisamy	2017	TST	High	Medium	High	High	Medium	High
Nasehi	2017	TST	High	Medium	High	High	High	High
Nikokar	2010	TST	Not clear	Medium	High	Not clear	Medium	Low
Nikolova	2013	IGRA	Not clear	Not clear	High	Not clear	Medium	Low
Nonghanphithak	2016	IGRA	Not clear	Medium	High	Not clear	High	Low
Ozdemir	2006	TST	Not clear	Not clear	High	Low	Medium	Low
Ozdemir	2007	TST & IGRA	High	Medium	High	Medium	High	Medium
Ozsoy	2010	TST	Not clear	Not clear	High	Not clear	Medium	Low
Powell	2011	TST	High	Medium	High	Medium	High	Medium
Rafiza	2011	TST & IGRA	High	Medium	High	High	High	High
Ratnatunga	2015	TST & IGRA	High	Medium	High	Medium	Medium	Medium
Rodrigues	2009	TST	High	Medium	High	Medium	Medium	Medium
Rogério	2013	TST	High	Medium	High	High	Medium	High
Rogério	2015	TST	High	Medium	High	High	High	High
Rutanga	2015	TST	High	Medium	High	Medium	High	Medium

Author	Year	Type of test	1. Selection of the participants	2. Measurement of the exposure	3. Measurement of the outcome	4. Response rate	5. Reported results	SUMMARY
Salmanzadeh	2016	TST & IGRA	Not clear	Medium	High	Not clear	Medium	Low
Sawhney	2015	TST	Not clear	Not clear	High	Not clear	Medium	Low
Severo	2011	TST	High	Medium	High	High	Medium	High
Sharifi-Mood	2006	TST	Not clear	Not clear	High	Not clear	Not clear	Low
Siddiqi	2012	IGRA	Not clear	Not clear	High	Not clear	Medium	Low
Taheri	2013	TST	Not clear	High	High	Not clear	Medium	Low
Talebi-Taher	2011	TST & IGRA	Not clear	Medium	High	Not clear	Medium	Low
Thuong	2016	IGRA	Not clear	Medium	High	Not clear	High	Low
Topic	2009	TST & IGRA	Low	Not clear	High	Not clear	Medium	Low
van Rie	2013	TST & IGRA	Not clear	Medium	High	Not clear	High	Low
Wei	2013	TST & IGRA	Low	Medium	High	Not clear	High	Low
Yalcin	2005	TST	High	Not clear	High	Medium	Medium	Medium
Zhang	2013	IGRA	High	High	High	High	High	High
Zhou	2014	TST	High	Medium	High	Medium	High	Medium
Zhu	2014	IGRA	Not clear	Not clear	High	Not clear	Medium	Low

Table S2b. Quality assessment of cohort studies

Author	Year	Type of test	1. Selection of the participants	2. Measurement of the exposure	3. Measurement of the outcome	4. A. Response rate for prevalence	4. B. Retention rate for incidence	5. A. Results for prevalence	5. B. Results for incidence	SUMMARY for Prevalence	SUMMARY for Incidence
Adams	2015	TST & IGRA	High	Medium	High	Medium	Medium	Medium	High	Medium	Medium
Borroto	2011	TST	High	Medium	High	High	Medium	High	Medium	High	Medium
Calixto-Aguilar	2016	TST	High	Medium	High	Medium	High	Medium	Medium	Medium	High
Christopher	2011	TST	High	High	High	Reported in other paper	Medium	Reported in other paper	High	Reported in other paper	Medium
Chung-Delgado	2012	TST	High	High	High	Medium	High	High	High	Medium	High
Corbett	2007	TST	High	High	High	High	High	Medium	High	High	High
da Costa	2009	TST	Not clear	Medium	High	Not clear	Not clear	Not clear	High	Low	Low
de Miranda	2012	TST	High	High	High	High	Low	Medium	Medium	High	Low
Emadi-Koochak	2009	TST	Not clear	Low	High	Not clear	Medium	Not clear	Medium	Low	Low
Escombe	2010	IGRA	High	High	High	Not clear	Medium	Medium	Medium	Low	Medium
Gonzalez	2011	TST	Not clear	Low	High	NA	Medium	Low	Low	NA	Low
Gutierrez	2012	TST	High	Medium	High	Medium	Medium	Medium	Medium	Medium	Medium
He	2015	TST & IGRA	High	Medium	High	High	Medium	High	High	High	Medium
Hohmuth	2006	TST	High	Not clear	High	High	Low	Medium	Medium	High	Low
Kiertiburanakul	2012	TST	High	Not clear	High	Not clear	Medium	High	Medium	Low	Medium
Li-fan	2013	TST & IGRA	High	Medium	High	High	No data on incidence	High	No data on incidence	High	NA

Author	Year	Type of test	1. Selection of the participants	2. Measurement of the exposure	3. Measurement of the outcome	4. A. Response rate for prevalence	4. B. Retention rate for incidence	5. A. Results for prevalence	5. B. Results for incidence	SUMMARY for Prevalence	SUMMARY for Incidence
Lopes	2008	TST	High	Medium	High	Medium	Medium	High	Medium	Medium	Medium
McCarthy	2015	TST & IGRA	High	High	High	Reported in other paper	Medium	Reported in other paper	High	Reported in other paper	Medium
Moreira	2010	TST	High	High	High	High	High	Medium	Medium	High	High
Pai	2006	TST & IGRA	High	Not clear	High	Reported in other paper	Medium	Reported in other paper	Medium	Reported in other paper	Medium
Perez-Lu	2013	TST	Low	Medium	High	High	High	Medium	High	Low	Low
Rabahi	2007	TST	High	Medium	High	Not clear	Medium	Medium	Medium	Low	Medium
Rafiza	2015	IGRA	High	Medium	High	Reported in other paper	Medium	Reported in other paper	High	Reported in other paper	Medium
Sawanyawisuth	2012	TST	Low	Low	High	Not clear	Low	Not clear	High	Low	Low
Whitaker	2013	TST & IGRA	Low	Medium	High	Not clear	Medium	High	High	Low	Low
Zwerling	2013	IGRA	Not clear	High	High	Not clear	Not clear	Medium	High	Low	Low

NA, Not applicable

Table S3. Characteristics of studies included in the systematic review

Author, Year	Country	Study year	TB Incidence at the study year ^a	Type of study	Type of setting	Type of participant	Test used	Number of participants	Quality Summary
Adams, 2015	South Africa	2009-2011	946	Cohort, prospective	Hospital and Primary health center	All types of HCWs	TST & IGRA	505	P: Medium, I: Medium
Agaya, 2015	Kenya	2013	443	Cross-sectional	Hospital, Dispensary, Health centers	All types of HCWs	TST	898	P: Medium
Babayigit, 2014	Turkey	Not stated	20	Cross-sectional	General Hospital, TB control dispensary	All types of HCWs	TST & IGRA	96	P: Low
Bandyopadhyay, 2010	India	2004-2005	281	Cross-sectional	General Hospital	Nursing and medical students	IGRA	50	P: Low
Belo, 2017	Mozambique	2014-2015	551	Cross-sectional	Hospital	All types of HCWs	TST	209	P: Medium
Borroto, 2011	Cuba	2007	7.8	Cohort, prospective	Hospital	All types of HCWs	TST	350	P: High, I: Medium
Bozkanat, 2016	Turkey	2008	29	Cross-sectional	TB Hospital	All types of HCWs	TST & IGRA	34	P: Low
Caglayan, 2011	Turkey	2005	33	Cross-sectional	TB Hospital	All types of HCWs	TST & IGRA	78	P: Low
Calixto-Aguilar, 2016	Peru (article in Spanish)	2013	122	Cohort, prospective	University hospital	Medical students	TST	548	P: Medium, I: High
Christopher, 2010	India	2007	268	Cross-sectional	Hospital	Nursing students	TST	436	P: High

Author, Year	Country	Study year	TB Incidence at the study year ^a	Type of study	Type of setting	Type of participant	Test used	Number of participants	Quality Summary
Christopher, 2011	India	2007-2008	265	Cohort, prospective	Hospital	Nursing students	TST	436	P: -, I: Medium
Chung-Delgado, 2012	Peru (article in Spanish)	2007-2010	138	Cohort, retrospective	University hospital	Medical students	TST	547	P: Medium, I: High
Corbett, 2007	Zimbabwe	2004-2005	598	Cohort, prospective	Hospital	Nursing students	TST	351	P: High, I: High
Da Costa, 2006	Brazil	2002	52	Cross-sectional	Psychiatric Hospital	All types of HCWs	TST	31	P: Low
da Costa, 2009	Brazil	1999-2003	51	Cohort, prospective	Hospital	All types of HCWs	TST	Not clear	P: -, I: Low
Dagnew, 2012	Ethiopia	2008-2009	289	Cross-sectional	University, Faculty of Medicine	Medical, Paramedical students	TST & IGRA	107	P: Low
de Miranda, 2012	Brazil	2006-2008	46	Cohort, prospective	Clinics	All types of HCWs	TST	251	P: High, I: Low
de Oliveira, 2007	Brazil	2004	54	Cross-sectional	University hospital	All types of HCWs	TST	194	P: Low
de Souza, 2014	Brazil	2011-2012	43	Cross-sectional	Health centers	All types of HCWs	TST & IGRA	632	P: Low
Drobniewski, 2007	Russia	2004-2005	87	Cross-sectional	Clinics, Health centres; Medical University	HCWs and medical students	IGRA	500	P: High
El-Sokkary, 2015	Egypt	2012-2013	17	Cross-sectional	General Hospital, TB Hospital	Nurses and Lab personnel	TST & IGRA	132	P: High

Author, Year	Country	Study year	TB Incidence at the study year ^a	Type of study	Type of setting	Type of participant	Test used	Number of participants	Quality Summary
Emadi-Koochak, 2009	Iran	2003-2006	18	Cohort, prospective	Hospital	Medical students and pharmacy students	TST	256	P: Low, I: Low
Encinales, 2010	Colombia	1999-2006	34	Cross-sectional	TB hospital	All types of HCWs	TST	150	P: Low
Escombe, 2010	Peru	2005-2006	153	Cohort, prospective	Hospital	All types of HCWs	IGRA	70	P: Low, I: Medium
Franco, 2006	Brazil	2001-2002	50	Cross-sectional	Hospital	Nurses	TST	169	P: High
Gonzalez, 2011	Argentina (article in Spanish)	2008-2009	24	Cohort, prospective	General hospital	All types of HCWs and students	TST	275	P: -, I: Low
Gupta, 2015	India	2012	234	Cross-sectional	General Hospital	All types of HCWs	IGRA	40	P: Low
Gutierrez, 2012	Cuba (article in Spanish)	2007-2008	7.8	Cohort, prospective	University hospital	All types of HCWs	TST	183	P: Medium, I: Medium
He, 2010	China	2005	92	Cross-sectional	TB center with TB clinic	All types of HCWs	TST	2153	P: High
He, 2012	China	2010	77	Cross-sectional	Hospital	All types of HCWs	TST & IGRA	999	P: Medium
He, 2015	China	2011-2012	75	Cohort, prospective	Community health center, village clinic, community clinic	Village doctor	TST & IGRA	704	P: High, I: Medium

Author, Year	Country	Study year	TB Incidence at the study year ^a	Type of study	Type of setting	Type of participant	Test used	Number of participants	Quality Summary
Hefzy, 2016	Egypt	2015-2016	15	Cross-sectional	General Hospital	Physicians, housekeeper	TST & IGRA	44	P: Low
Hohmuth, 2006	Peru	2002-2003	160	Cohort, prospective	Hospital	All types of HCSs: nursing, medical, pharmacy and lab technician students	TST	559	P: High, I: Low
Islam, 2014	Bangladesh	2013	221	Cross-sectional	Chest disease hospital	All types of HCWs	TST	449	P: High
Kargi, 2017	Turkey	Not stated	18	Cross-sectional	General Hospital	All types of HCWs	TST & IGRA	100	P: Low
Khawcharoenporn, 2009	Thailand	2006-2007	210	Cross-sectional	Hospital	Medical students	TST	166	P: Medium
Khawcharoenporn, 2016	Thailand	2014	171	Cross-sectional	General Hospital	All types of HCWs	TST & IGRA	260	P: Low
Kiertiburanakul, 2012	Thailand	2005-2008	210	Cohort, prospective	Hospital	Nurses, nursing and medical students	TST	1438	P: Low, I: Medium
Li-fan, 2013	China	2005-2011	84	Cohort, prospective	Hospital	All types of HCWs	TST & IGRA	104	P: High, I: NA
Lien, 2009	Viet Nam	2007	168	Cross-sectional	General Hospital, TB Hospital	All types of HCWs	TST & IGRA	300	P: High
Liu, 2015	China	2010-2011	77	Cross-sectional	General Hospital	All types of HCWs	IGRA	115	P: Low

Author, Year	Country	Study year	TB Incidence at the study year ^a	Type of study	Type of setting	Type of participant	Test used	Number of participants	Quality Summary
Lopes, 2008	Brazil	2001-2004	52	Cohort, prospective	Hospital	Nurses	TST	128	P: Medium, I: Medium
Lou, 2015	Uganda	2009	213	Cross-sectional	Hospital	All types of HCSs: medicine and surgery, dental surgery, and nursing students	TST	288	P: High
Maciel, 2007	Brazil	1999-2002	50	Cross-sectional	Hospital	Nursing and medical students	TST	605	P: High
McCarthy, 2015	South Africa	2008-2009	972	Cohort, prospective	Hospital, TB-HIV clinic	HCWs and medical students	TST & IGRA	199	P: -, I: Medium
Mirtskulava, 2008	Georgia	2006	161	Cross-sectional	Health care facilities which part of the NTP	All types of HCWs	TST & IGRA	265	P: Low
Moreira, 2010	Brazil	2007-2008	46	Cohort, prospective	Primary health care	Community Health Agents	TST	72	P: High, I: High
Mostafavi, 2016	Iran	2013-2014	17	Cross-sectional	Laboratory facility	Lab personnel	TST & IGRA	177	P: High
Munisamy, 2017	Malaysia	2014	92	Cross-sectional	Hospital	All types of HCWs	TST	399	P: High
Nasehi, 2017	Iran	2013	18	Cross-sectional	Laboratory facility and Low risk HCWs	Lab personnel	TST	1006	P: High
Nikokar, 2010	Iran	Not stated	17	Cross-sectional	Hospital	All types of HCWs	TST	185	P: Low

Author, Year	Country	Study year	TB Incidence at the study year ^a	Type of study	Type of setting	Type of participant	Test used	Number of participants	Quality Summary
Nikolova, 2013	Bulgaria	2009	45	Cross-sectional	Dispensary	All types of HCWs	IGRA	21	P: Low
Nonghanphithak, 2016	Thailand	2013-2015	171	Cross-sectional	General Hospital	All types of HCWs	IGRA	112	P: Low
Ozdemir, 2006	Turkey	2005	33	Cross-sectional	Hospital	All types of HCWs	TST	39	P: Low
Ozdemir, 2007	Turkey	2005	33	Cross-sectional	General Hospital	All types of HCWs	TST & IGRA	76	P: Medium
Ozsoy, 2010	Turkey	Not stated	25	Cross-sectional	Autopsy facility	All types of HCWs	TST	31	P: Low
Pai, 2006	India	2004-2005	281	Cohort, prospective	Hospital	Nursing and medical students	TST & IGRA	147	P: -, I: Medium
Perez-Lu, 2013	Peru	2002-2009	150	Cohort, retrospective	University hospital	All types of HCSs: veterinary, dentistry, nursing, medical technology, medicine, education, sciences, and health administrator	TST	4842	P: Low, I: Low
Powell, 2011	Viet Nam	2009	159	Cross-sectional	Hospital	All types of HCWs	TST	956	P: Medium

Author, Year	Country	Study year	TB Incidence at the study year ^a	Type of study	Type of setting	Type of participant	Test used	Number of participants	Quality Summary
Rabahi, 2007	Brazil	2001-2004	52	Cohort, prospective	Hospital	All types of HCWs	TST	437	P: Low, I: Medium
Rafiza, 2011	Malaysia	2008-2009	73	Cross-sectional	Hospital	All types of HCWs	TST & IGRA	953	P: High
Rafiza, 2012	Malaysia	2008-2009	73	Cohort, prospective	Hospital	All types of HCWs	IGRA	954	P: -, I: Medium
Ratnatunga, 2015	Sri Lanka	2013	66	Cross-sectional	Chest clinic	All types of HCWs	TST & IGRA	36	P: Medium
Rodrigues, 2009	Brazil	2007	45	Cross-sectional	Community and within the national TB control plan	Community health workers	TST	30	P: Medium
Rogério, 2013	Brazil (article in Portuguese)	2010-2011	44	Cross-sectional	University Hospital	Medical and Nursing students	TST	225	P: High
Rogério, 2015	Brazil (article in Portuguese)	2011-2012	43	Cross-sectional	Primary care unit	Community health workers	TST	307	P: High
Rutanga, 2015	Rwanda	2010	88	Cross-sectional	Hospital, Health centers	All types of HCWs	TST	1023	P: Medium
Salmanzadeh, 2016	Iran	Not stated	14	Cross-sectional	General Hospital	Nurses	TST & IGRA	87	P: Low
Sawanyawisuth, 2012	Thailand	2001-2009	221	Cohort, retrospective	Hospital	All types of HCWs	TST	1025	P: -, I: Low
Sawhney, 2015	India	2011-2013	234	Cross-sectional	General Hospital	All types of HCWs	TST	100	P: Low

Author, Year	Country	Study year	TB Incidence at the study year ^a	Type of study	Type of setting	Type of participant	Test used	Number of participants	Quality Summary
Severo, 2011	Brazil	2009-2010	45	Cross-sectional	Hospital	Nurses	TST	55	P: High
Sharifi-Mood, 2006	Iran	2005	16	Cross-sectional	Hospital	All types of HCWs	TST	100	P: Low
Siddiqi, 2012	Philippines	2010	531	Cross-sectional	General Hospital	All types of HCWs	IGRA	31	P: Low
Taheri, 2013	Iran	2009-2010	17	Cross-sectional	General Hospital	Lab personnel & radiographers	TST	89	P: Low
Talebi-Taher, 2011	Iran	2009-2010	17	Cross-sectional	General Hospital	All types of HCWs	TST & IGRA	200	P: Low
Thuong, 2016	Vietnam	Not stated	133	Cross-sectional	TB Hospital and TB centers	All types of HCWs	IGRA	109	P: Low
Topic, 2009	Croatia	2007	25	Cross-sectional	Children Hospital	All types of HCWs	TST & IGRA	54	P: Low
van Rie, 2013	South Africa	2008	977	Cross-sectional	General Hospital	HCWs and medical students	TST & IGRA	199	P: Low
Wei, 2013	China	2009	82	Cross-sectional	Thoracic Hospital	All types of HCWs	TST & IGRA	210	P: Low
Whitaker, 2013	Georgia	2009-2011	127	Cohort, prospective	Clinic	All types of HCWs	TST & IGRA	320	P: Low, I: Low
Yalcin, 2005	Turkey	Not stated	33	Cross-sectional	Not stated	All types of HCWs	TST	89	P: Medium

Author, Year	Country	Study year	TB Incidence at the study year ^a	Type of study	Type of setting	Type of participant	Test used	Number of participants	Quality Summary
Zhang, 2013	China	2012	74	Cross-sectional	TB Hospital, TB and Thoracic Research Institute	All types of HCWs	IGRA	755	P: High
Zhou, 2014	China	2011	76	Cross-sectional	Hospital	All types of HCWs	TST	529	P: Medium
Zhu, 2014	China	2005-2008	88	Cross-sectional	Pulmonary Hospital	All types of HCWs	IGRA	20	P: Low
Zwerling, 2013	India	2007-2009	261	Cohort, prospective	Hospital	Nursing and medical students	IGRA	226	P: Low, P: Low

^a All figures were taken for the year of the study or the average if several years from WHO estimation for incidence of all forms of TB, in general population, in the country per 100,000 population per year. If the study years were not reported, we use year when the study published

HCWs, health care workers

HCSs, health care students

P, prevalence

I, Incidence

NTP, National TB program

Table S4a. Prevalence of LTBI in HCWs measured by TST

Study (Author, Year, Country)	Type of participants	TST Cut-off/induration size	TST positivity rate				Proportion of BCG scar or history of BCG vaccination (%)
			Number tested	Number positive	%	95% CI	
Adams, 2015, South Africa	All types of HCWs	10 mm in non HIV and 5 mm in HIV participants	147	123	83.7	76.9-88.8	98
Agaya, 2015, Kenya	All types of HCWs	10 mm	898	534	59.5	56.2-62.6	-
Babayigit, 2014, Turkey	All types of HCWs	15 mm	96	32	33.3	24.0-43.7	100
Belo, 2017, Mozambique	All types of HCWs	10 mm	209	72	34.4	28.0-41.3	72.7
Borroto, 2011, Cuba	All types of HCWs	10 mm	350	54	15.4	11.9-19.5	76.3
Bozkanat, 2016, Turkey	All types of HCWs	15 mm	34	20	58.8	40.7-75.4	94.1
Caglayan, 2011, Turkey	All types of HCWs	15 mm	78	57	73.1	61.8-82.5	-
Calixto-Aguilar, 2016, Cuba	Medical students	10 mm	548	37	6.7	47.9-91.9	-
Christopher, 2010, India	Nursing students	10 mm	436	219	50.2	45.4-55.0	76.9
Chung-Delgado, 2012, Peru	Medical students	10 mm	547	79	14.4	11.5-17.4	-
Corbett, 2007, Zimbabwe	Nursing students	10 mm	351	183	52.1	46.9-57.3	-
Da Costa, 2006, Brazil	All types of HCWs	10 mm	31	13	41.9	24.5-60.9	-
Dagnew, 2012, Ethiopia	Medical, Paramedical students	10 mm	107	50	46.7	37.0-56.6	44.9

Study (Author, Year, Country)	Type of participants	TST Cut-off/induration size	TST positivity rate				Proportion of BCG scar or history of BCG vaccination (%)
			Number tested	Number positive	%	95% CI	
de Miranda, 2012, Brazil	All types of HCWs	10 mm	251	129	51.4	45.2-57.7	40.2
de Oliveira, 2007, Brazil	All types of HCWs	10 mm	194	75	38.7	31.8-45.9	-
de Souza, 2014, Brazil	All types of HCWs	5 mm	632	384	60.8	56.8-64.6	86.4
de Souza, 2014, Brazil	All types of HCWs	10 mm	632	252	39.9	36.0-43.8	-
El-Sokkary, 2015, Egypt	Nurses and Lab personnel	10 mm	132	78	59.1	50.2-67.6	92.4
Emadi-Koochak, 2009, Iran	Medical students and pharmacy students	10 mm	256	17	7	4.2-10.4	-
Encinales, 2010, Colombia	All types of HCWs	5 mm	150	77	51.3	43.0-59.6	90
Franco, 2006, Brazil	Nurses	10 mm	169	101	59.8	51.9-67.2	80
Gutierrez, 2012, Cuba	All types of HCWs	10 mm	183	93	50.8	43.4-58.2	-
He, 2010, China	All types of HCWs	10 mm	2153	1106	51.4	49.2-53.5	36.1
He, 2012, China	All types of HCWs	5 mm	924	637	69	65.8-71.9	34
He, 2012, China	All types of HCWs	10 mm	924	499	54	50.7-57.3	-
He, 2015, China	Village doctor	10 mm	875	171	19.5	17.1-22.3	89

Study (Author, Year, Country)	Type of participants	TST Cut-off/induration size	TST positivity rate				Proportion of BCG scar or history of BCG vaccination (%)
			Number tested	Number positive	%	95% CI	
Hefzy, 2016, Egypt	Physicians, nurse, and housekeeper	10 mm	44	6	13.6	5.2-27.4	100
Hohmuth, 2006, Peru	All types of HCSs	10 mm	559	117	20.9	17.8-24.5	-
Islam, 2014, Bangladesh	All types of HCWs	10 mm	449	242	53.9	49.2-58.6	82
Kargi, 2017, Turkey	All types of HCWs	10 mm	100	42	42	32.2-52.3	42
Khawcharoenporn, 2009, Thailand	Medical students	10 mm	166	123	74.1	66.7-80.6	58.2
Kiertiburanakul, 2012, Thailand	Nurses, Nursing assistants	10 mm	373	258	69.2	63.8-68.7	81.4
Kiertiburanakul, 2012, Thailand	Nursing and medical students	10 mm	1065	695	65.3	62.3-68.1	-
Khawcharoenporn, 2016, Thailand	All types of HCWs	13 mm	260	114	43.8	37.7-50.1	78
Li-fan, 2013, China	All types of HCWs	10 mm	96	53	55.2	45.3-64.8	-
Li-fan, 2013, China	All types of HCWs	5 mm	96	70	72.9	63.3-80.8	-
Lien, 2009, Viet Nam	All types of HCWs	10 mm	288	176	61.1	55.2-66.8	95
Lien, 2009, Viet Nam	All types of HCWs	10 mm	288	191	66.3	60.5-71.8	95
Lopes, 2008, Brazil	Nurses	10 mm	128	89	69.5	60.7-77.2	-
Lou, 2015, Uganda	All types of HCSs	10 mm	288	130	45.1	39.3-51.1	71.2

Study (Author, Year, Country)	Type of participants	TST Cut-off/induration size	TST positivity rate				Proportion of BCG scar or history of BCG vaccination (%)
			Number tested	Number positive	%	95% CI	
Maciel, 2007, Brazil	Nursing and medical students	10 mm	605	114	18.8	15.8-22.2	98.7
Mirtskulava, 2008, Georgia	All types of HCWs	10 mm	265	177	66.8	60.8-72.4	92
Moreira, 2010, Brazil	Community health workers	10 mm	72	11	15.3	8.8-25.3	-
Mostafavi, 2016, Iran	Lab personnel	10 mm	177	25	14.1	9.4-20.1	89.8
Munisamy, 2017, Malaysia	All types of HCWs	15 mm	399	184	46.1	41.1-51.1	-
Nasehi, 2017, Iran	Lab personnel	10 mm	689	168	24.4	21.3-27.7	-
Nasehi, 2017, Iran	Low risk HCWs	10 mm	317	47	14.8	11.3-19.2	-
Nikokar, 2010, Iran	All types of HCWs	10 mm	185	125	67.6	60.3-74.3	-
Ozdemir, 2006, Turkey	All types of HCWs	15 mm	39	28	71.8	55.1-84.9	100
Ozdemir, 2007, Turkey	All types of HCWs	15 mm	76	41	53.9	42.1-65.5	-
Ozsoy, 2010, Turkey	All types of HCWs	15 mm with BCG scar and 10 mm with no BCG scar	31	26	83.9	66.3-94.5	93.5
Perez-Lu, 2013, Peru	All types of HCWs	10 mm	4842	49	1	0.6-1.3	70.9
Powell, 2011, Viet nam	All types of HCWs	10 mm	956	380	39.7	36.6-42.9	31

Study (Author, Year, Country)	Type of participants	TST Cut-off/induration size	TST positivity rate				Proportion of BCG scar or history of BCG vaccination (%)
			Number tested	Number positive	%	95% CI	
Rabahi, 2007, Brazil	All types of HCWs	10 mm	437	211	48.3	43.6-53.0	-
Rafiza, 2011, Malaysia	All types of HCWs	10 mm	95	56	58.9	48.4-68.9	99.7
Rafiza, 2011, Malaysia	All types of HCWs	15 mm	95	16	16.8	9.9-25.9	99.7
Ratnatunga, 2015, Sri Lanka	All types of HCWs	10 mm	36	17	47.2	30.4-64.5	-
Rodrigues, 2009, Brazil	Community health workers	10 mm	30	8	26.7	12.3-45.9	93.3
Rogério, 2013, Brazil	Medical and Nursing students	10 mm	225	54	24	18.6-30.1	97.8
Rogério, 2015, Brazil	Community health workers	10 mm	307	116	37.3	31.0-42.0	89.2
Rogério, 2015, Brazil	Community health workers	5 mm	307	180	57.8	52.0-63.0	-
Rutanga, 2015, Rwanda	All types of HCWs	10 mm	1023	635	62.1	59.0-65.1	-
Salmanzadeh, 2016, Iran	Nurses	Not stated	87	31	35.6	25.6-46.6	-
Sawhney, 2015, India	All types of HCWs	10 mm	100	20	20	12.7-29.2	92
Severo, 2011, Brazil	Nurses	10 mm	55	26	47.3	33.7-61.2	98.2

Study (Author, Year, Country)	Type of participants	TST Cut-off/induration size	TST positivity rate				Proportion of BCG scar or history of BCG vaccination (%)
			Number tested	Number positive	%	95% CI	
Sharifi-Mood, 2006, Iran	All types of HCWs	Not stated	100	55	55	44.7-64.9	-
Taheri, 2013, Iran	Lab personnel & radiographers	10 mm	89	7	7.9	5.52-19.7	100
Talebi-Taher, 2011, Iran	All types of HCWs	10 mm	200	105	52.5	45.3-59.6	100
Topic, 2009, Croatia	All types of HCWs	10 mm	54	34	62.9	48.7-75.7	100
Topic, 2009, Croatia	All types of HCWs	5 mm	54	45	83.3	70.7-92.1	100
Topic, 2009, Croatia	All types of HCWs	15 mm	54	19	35.2	22.7-49.4	100
van Rie, 2013, South Africa	HCWs	10 mm	120	68	56.7	47.3-65.7	-
van Rie, 2013, South Africa	Medical students	10 mm	79	21	26.6	17.3-27.7	-
Wei, 2013, China	All types of HCWs	10 mm	85	83	97.6	91.7-99.7	94.3
Whitaker, 2013, Georgia	All types of HCWs and medical students	10 mm	308	193	62.7	57.1-67.9	-
Yalcin, 2005, Turkey	All types of HCWs	10 mm	89	21	23.6	15.2-33.8	-
Zhou, 2014, China	All types of HCWs	10 mm	529	232	43.8	39.6-48.2	66.7

HCWs, health care workers

HCSs, health care students

Table S4b. Prevalence of LTBI in HCWs measured by IGRA

Study (Author, Year, Country)	Type of participants	IGRA used	IGRA positivity rate				Proportion of BCG scar or history of BCG vaccination (%)
			Number of tested	Number of positive	%	95% CI	
Adams, 2015, South Africa	All types of HCWs	QFT-GIT	335	231	68.9	63.7-73.9	92
Adams, 2015, South Africa	All types of HCWs	T-SPOT.TB	317	198	62.5	56.9-67.8	-
Babayigit, 2014, Turkey	All types of HCWs	QFT-Gold	96	19	19.8	12.4-29.2	100
Bandyopadhyay, 2010, India	Nursing and medical students	QFT-Gold	50	0	0	-	-
Bozkanat, 2016, Turkey	All types of HCWs	QFT-Gold	34	7	20.6	8.7-37.9	94.1
Caglayan, 2011, Turkey	All types of HCWs	QFT-Gold	78	34	43.6	32.4-55.3	-
Dagnew, 2012, Ethiopia	Medical and paramedical students	QFT-Gold	107	47	43.9	34.3-53.9	44.9
de Souza, 2014, Brazil	All types of HCWs	QFT-Gold	632	252	27.2	23.8-30.9	86.4
Drobniewski, 2007, Russia	All type of HCWs	QFT-Gold	262	107	40.8	35.0-46.9	81.3
Drobniewski, 2007, Russia	Medical students	QFT-Gold	238	24	10.1	6.7-14.4	87.8
El-Sokkary, 2015, Egypt	Nurses and Lab personnel	QFT-Gold	132	38	28.8	21.2-37.3	92.4
Escombe, 2010, Peru	All types of HCWs	QFT-GIT	70	39	56	43.3-67.6	-
Gupta, 2015, India	All types of HCWs	T-SPOT	40	18	45	29.3-61.5	-
He, 2012, China	All types of HCWs	QFT-Gold	999	679	68	64.9-70.9	34
He, 2015, China	Village doctor	QFT-GIT	866	398	45.9	42.6-49.3	36.4
Hefzy, 2016, Egypt	Physicians, nurses, and housekeeper	QFT-Gold	39	4	10.2	2.9-24.2	100
Kargi, 2017, Turkey	All types of HCWs	QFT-Gold	100	23	23	15.2-32.5	42
Khawcharoenporn, 2016, Thailand	All types of HCWs	QFT-Gold	260	52	20	15.3-25.4	78
Li-fan, 2013, China	All types of HCWs	T-SPOT.TB	101	29	28.7	19.9-37.5	98
Lien, 2009, Viet Nam	All types of HCWs	QFT-Gold	300	142	47.3	41.6-53.2	95

Study (Author, Year, Country)	Type of participants	IGRA used	IGRA positivity rate				Proportion of BCG scar or history of BCG vaccination (%)
			Number of tested	Number of positive	%	95% CI	
Liu, 2015, China	All types of HCWs	QFT-Gold	115	48	41.7	32.6-51.3	-
Mirtskulava, 2008, Georgia	All types of HCWs	QFT-Gold	265	159	60	53.8-65.9	92
Mostafavi, 2016, Iran	Lab personnel	QFT-Gold	177	33	18.6	13.2-25.2	89.8
Nikolova, 2013, Bulgaria	All types of HCWs	QFT-Gold	21	10	47.6	25.7-70.2	100
Nonghanphithak, 2016, Thailand	All types of HCWs	QFT-Gold	112	21	18.8	11.5-25.9	65.2
Ozdemir, 2007, Turkey	All types of HCWs	QFT-Gold	76	65	85.5	75.6-92.5	-
Rafiza, 2011, Malaysia	All types of HCWs	QFT-Gold	953	101	10.6	8.6-12.6	99.7
Ratnatunga, 2015, Sri Lanka	All types of HCWs	T-SPOT	38	6	15.8	6.0-31.2	-
Salmanzadeh, 2016, Iran	Nurses	QFT-Gold	87	27	31	21.5-41.9	-
Siddiqi, 2012, Philippines	All types of HCWs	QFT-Gold	31	15	48.4	30.2-66.9	-
Talebi-Taher, 2011, Iran	All types of HCWs	QFT-Gold	200	17	8.5	5.0-13.2	100
Thuong, 2016, Vietnam	All types of HCWs	QFT-Gold	109	41	37.6	28.5-47.4	49.5
Topic, 2009, Croatia	All types of HCWs	QFT-Gold	54	17	31.5	19.5-45.6	100
van Rie, 2013, South Africa	All types of HCWs	QFT-Gold	120	83	69.2	60.0-72.3	-
van Rie, 2013, South Africa	Medical students	QFT-Gold	79	12	15.2	8.1-25.0	-
Wei, 2013, China	All types of HCWs	QFT-Gold	210	161	76.7	70.4-82.2	94.3
Whitaker, 2013, Georgia	All types of HCWs and medical students	QFT-GIT	319	146	45.8	40.2-51.4	89
Zhang, 2013, China	All types of HCWs	T-SPOT	755	254	33.6	30.2-37.0	100
Zhu, 2014, China	All types of HCWs	T-SPOT	20	6	30	11.9-54.3	-
Zwerling, 2013, India	Nursing and medical students	QFT-GIT	226	64	28.3	22.5-34.7	75.6

HCWs, health care workers

HCSs, health care students

Table S4c. Prevalence of LTBI measured by TST and by IGRA (Stratified by type of participants and TB incidence per 100,000)

Study description	Prevalence of LTBI - all studies				Prevalence of LTBI - high and medium quality studies			
	Study data		Pooled estimates		Study data		Pooled estimates	
	Number of studies	IQ range for prevalence estimates	Prevalence (%)	95% confidence interval	Number of studies	IQ range for prevalence estimates	Prevalence (%)	95% confidence interval
Prevalence of LTBI measured by TST								
Health care workers								
≥ 300	4	51-66	59	41-77	3	47-72	59	36-82
200-299	3	37-62	48	24-72	1	-	54	44-49
100-199	4	43-66	54	39-69	2	46-60	46	44-49
25-99	29	46-62	53	46-61	18	44-59	48	40-56
0-24	13	15-53	36	26-47	5	15-51	32	19-46
Physicians								
≥ 300	0	-	-	-	0	-	-	-
200-299	1	-	58	39-74	1	-	58	39-74
100-199	1	-	67	54-77	0	-	-	-
25-99	4	40-56	49	11-87	3	33-63	49	2-95
0-24	5	41-48	40	29-52	2	30-45	31	22-40
Nurses								
≥ 300	1	-	35	25-47	1	-	35	25-47
200-299	2	59-73	65	59-70	1	-	52	45-65
100-199	1	-	68	57-77	0	-	-	-
25-99	9	49-67	60	53-66	5	60-70	63	56-70
0-24	7	33-55	44	30-57	3	39-62	47	16-78

Study description	Prevalence of LTBI - all studies				Prevalence of LTBI - high and medium quality studies			
	Study data		Pooled estimates		Study data		Pooled estimates	
	Number of studies	IQ range for prevalence estimates	Prevalence (%)	95% confidence interval	Number of studies	IQ range for prevalence estimates	Prevalence (%)	95% confidence interval
Prevalence of LTBI measured by TST								
Allied health professionals								
≥ 300	2	38-47	37	29-44	1	-	34	26-42
200-299	2	61-64	64	59-69	1	-	59	47-70
100-199	1	-	66	47-80	0	-	-	-
25-99	8	31-64	50	39-62	8	29-64	46	30-61
0-24	8	22-44	31	21-41	5	14-40	25	14-36
General services								
≥ 300	0	-	-		0	-	-	
200-299	1	-	53	45-61	1	-	53	45-61
100-199	0	-	-	-	0	-	-	-
25-99	3	40-54	50	40-60	2	52-55	55	50-60
0-24	3	33-53	39	10-69	2	24-43	23	17-28
Health care students								
≥ 300	2	33-46	46	42-51	1	-	52	47-57
200-299	5	47-65	56	46-67	3	48-62	56	41-72
100-199	4	5-16	11	2-19	3	11-18	14	6-22
25-99	2	20-23	20	17-23	2	20-23	20	17-23
0-24	1	-	7	4-10	0	-	-	-

Study description	Prevalence of LTBI - all studies				Prevalence of LTBI - high and medium quality studies			
	Study data		Pooled estimates		Study data		Pooled estimates	
	Number of studies	IQ range for prevalence estimates	Prevalence (%)	95% confidence interval	Number of studies	IQ range for prevalence estimates	Prevalence (%)	95% confidence interval
Prevalence of LTBI measured by IGRA								
Health care workers								
≥ 300	3	59-69	66	58-74	1	-	69	64-74
200-299	1	-	45	31-60	0	-	-	-
100-199	6	24-54	40	25-55	1	-	47	42-53
25-99	16	28-46	41	29-54	8	25-51	41	22-60
0-24	7	14-26	20	13-26	2	21-26	22	118-27
Physicians								
≥ 300	0	-	-	-	0	-	-	-
200-299	0	-	-	-	0	-	-	-
100-199	4	42-58	45	18-71	1	-	58	46-69
25-99	6	27-44	40	23-56	5	34-46	45	29-61
0-24	3	12-22	15	1-29	0	-	-	-
Nurses								
≥ 300	0	-	-	-	0	-	-	-
200-299	0	-	-	-	0	-	-	-
100-199	5	39-46	41	22-60	1	-	46	36-56
25-99	8	23-41	37	16-57	5	32-33	35	12-58
0-24	5	21-29	22	12-33	1	-	29	22-38

Study description	Prevalence of LTBI - all studies				Prevalence of LTBI - high and medium quality studies			
	Study data		Pooled estimates		Study data		Pooled estimates	
	Number of studies	IQ range for prevalence estimates	Prevalence (%)	95% confidence interval	Number of studies	IQ range for prevalence estimates	Prevalence (%)	95% confidence interval
Prevalence of LTBI measured by IGRA								
Allied health professionals								
≥ 300	1	-	67	48-81	0	-	-	-
200-299	1	-	62	36-82	0	-	-	-
100-199	5	23-38	33	15-52	1	-	58	49-68
25-99	9	25-35	32	17-47	6	12-55	34	11-56
0-24	5	15-19	16	12-21	2	20-23	19	14-25
General services								
≥ 300	0	-	-	-	0	-	-	-
200-299	0	-	-	-	0	-	-	-
100-199	0	-	-	-	0	-	-	-
25-99	1	-	74	66-80	1	-	74	66-80
0-24	1	-	14	6-31	0	-	-	-
Health care students								
≥ 300	1	-	15	9-25	0	-	-	-
200-299	2	32-40	33	28-38	0	-	-	-
100-199	0	-	-	-	0	-	-	-
25-99	1	-	10	7-15	1	-	10	7-15
0-24	0	-	-	-	0	-	-	-

Table S4d. Results of meta-regression for the prevalence of LTBI in HCWs included all variables (n=5) in the analysis

Covariates	Odds Ratio	95% CI		P-value
Type of test (ref IGRA)	1			
TST	1.2	0.8	2.0	0.368
TB incidence (ref 0-24/100,000 population)	1			
25-99	1.9	0.8	4.3	0.137
100-199	0.9	0.4	2.3	0.910
200-299	8.4	3.3	2.2	0.00001
≥ 300	2.9	1.1	8.2	0.0399
Type of participants (ref Allied health professionals)	1			
Physicians	0.9	0.5	1.7	0.809
Nurses	1.2	0.8	1.8	0.399
General services	1.2	0.7	2.1	0.407
Health care students	0.3	0.1	0.6	0.003
Others (combination)	1.5	0.9	2.6	0.145
Type of settings (ref tertiary/university/general hospital)	1			
Clinics/health centers	1.2	0.4	3.1	0.730
TB/Chest disease hospital	0.9	0.4	1.9	0.836
Specialized hospital	1.0	0.4	2.5	0.980
Others (combination)	1.2	0.5	2.8	0.616
Study quality (ref low)	1			
High and medium	1.0	0.7	1.5	0.944

Table S5. Risk factors associated with prevalence of LTBI measured by TST and IGRA

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
Risk Factors for Positive TST						
Agaya, 2015	All types of HCWs	898	Active TB contact, Facility type, Duration worked in health care, Job type, Job location	Active TB contact (ref no): yes; 1.8 (1.3-2.4) Duration worked in health care (ref <2 y): >10 y; 2.3 (1.3-4.0)	Sex, HIV status, Number of persons per room in household	Male sex; 1.8 (1.3-2.4)
Belo, 2017	All types of HCWs	209	Administrative control measures, Contact with TB patients at workplace, Working time, Employment setting, Occupational category, Co-workers TB positive	Not significant	Age, Sex, Perceived health status, Immunosuppression, People living at same house (> 6), Contact with TB at home, BCG vaccination, Current smoking	Immunosuppression: yes; 5.82 (1.84-18.39)
Borroto	All types of HCWs	350	Occupation at risk, Contact with TB patient	Contact with TB patient; Prevalence risk ratio 1.72 (1.1-2.8) ^a	Sex, BCG scar	Not clear

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
Christopher, 2010	Nursing students	436	Worked in health care prior to current training program, time (years) spent in health care work after entry, Worked together with a TB patients (previously or during current training, Conversational distance contact with a pulmonary TB patient, Number of days spent working in medium or high risk ward, Patient-days caring for active TB	Time (years) spent in health care work after entry; 1.19 (1.10-1.28)	Age (years), Age at entry (years) (Age-years in health care), Sex, Body mass index, Highest education achieved, Current nursing course, Average household monthly income, BCG scar, Past history of TST, Previous TB assessment	Not significant
Chung-Delgado, 2012	Medical students	547	Not determined	Not determined	Sex, Age, Year of university entry, Previous TB, Smoking, Alcohol consumption, BMI	Year of university entry: 2009-2010; 0.47 (0.29-0.77) Previous TB: yes; 12.47 (2.02-77.03)
Dagnew, 2012	Medical, Paramedical students,	107	Department, Year of study	Not significant	Age, Place of birth, Religion, Khat consumption, BCG scar, BMI	Age; 1.6 (1.11-2.20) Khat consumption: yes; 9.2 (1.41-59.69)
de Oliveira, 2007	All types of HCWs	194	Not determined	Not determined	Gender, Age, Drinker, Smoker	Smoker: Yes; RR 1.72 (1.20-2.45) ^a

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
de Souza, 2014	All types of HCWs,	632	Professional category, Work only at primary health care, Years served in health care profession at primary health care	Years served in health care profession at primary health care (ref < 5): ≥ 5 ; 1.66 (1.12-2.47)	Gender, Age, Presence of BCG scar, Contact with a household member with TB, Alcohol abuse, Prior TST, Smoker, Comorbidity	Age group (ref 19-30 y): 36-40 y; 41-45 y; 2.11 (1.13-3.93), 46-64 y; 2.02 (1.14-3.58) Presence of BCG scar: yes; 1.78 (1.09-2.90)
He, 2010	All types of HCWs	2153	Position, Job location, Duration of employment (years), Inpatient ward, Size of clinic (no. of staff), Level	Job location (ref administrative/logistic): TB outpatient clinic; 1.9 (1.4-2.6), Supervision and monitoring; 1.6 (1.2-2.3), X-ray department; 1.8 (1.1-2.9) Duration of employment (ref < 1 y): 5-9 y; 2.3 (1.6-3.1), ≥ 10 y; 3.0 (2.2-4.1) Inpatient ward: yes; 2.3 (1.9-2.9)	Gender and smoking, Age group, BCG scar, Income, Education,	Age (ref 18-29 y): 30-39 y; 1.6 (1.2-2.1), 40-49 y; 1.8 (1.3-2.5), ≥ 50 y; 2.6 (1.7-4.0) BCG scar: yes; 1.4 (1.1-1.7)
He, 2012	All types of HCWs	924	Hospital, Job category, Years in health care, Cared for TB patient in last year, Average daily time in patient last year, Ever had co-worker with TB, Aware of TB	Years in health care (ref < 1): > 15 ; 3.43 (2.08-5.66) Cared for TB patient in last year: yes; 1.72 (1.06-2.78)	Age, Sex, Education, Self-report having BCG, Household contact with TB, Smoking status, Density of household	Male sex; 1.84 (1.25-2.70) Household contact with TB: yes; 1.92 (1.01-3.65)

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
			infection control guidelines, Had infection control training ever			
He, 2015	Village doctor	875	Working duration, Minutes spend on diagnosing one patient, Whether referred suspected TB patient in recent three years, Density of clinical areas (m ² per staff)	Not significant	Gender, Age, Education, BCG scar, Smoking status, Average yearly income, Density of household	Male gender: NS BCG scar: yes; 1.45 (1.03-2.04) Smoking status: yes; 1.67 (1.17-2.44)
Kargi, 2017	All types of HCWs	100	Occupation, Duration of work	Not determined	Age, gender, BCG positivity	Not significant ^a
Khawcharoenporn, 2009	Medical students	166	History of TB exposure	Not significant	BCG scar, Age, Sex	BCG scar: yes; associated with an initial TST 1.97 (1.05-3.66), associated with a booster effect 3.97 (1.25-12.46)
Kiertiburanakul, 2012	Nurses, Nursing assistants, Nursing students and medical students	1438	Type of Health care personnel	Not significant	Age, Gender, Positive BCG scar, Year of TST	Age; NS Male gender; 1.82 (1.33-2.49) Positive BCG scar; 1.46 (1.12-1.91) Year of TST; 0.76 (0.69-0.84)

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
Li-fan, 2013	All types of HCWs	96	Job category, Years served in the health care profession, Exposure to sputum smear positive TB patient	Not significant	Age, gender, BCG vaccine scar	Not significant
Lopes, 2008	Nurses	128	Length of professional activity, Last professional contact with pulmonary TB patients	Length of professional activity (ref ≤ 5 y): > 5 y; 6.3 (1.5-26.3) Last professional contact with pulmonary TB patients (ref < 2 y): ≥ 2 y; 11.3 (1.2-106.3)	Not determined	Not determined
Lou, 2015	All types of HCSs	288	Contact with a case of TB	Contact with a case of TB: yes; 1.86 (p-value 0.022)	Age, Sex, Course, Student categorization, History of smoking, History of alcohol intake, HIV status, BCG vaccination scar, Knowledge of TB transmission	Male sex; 2.23 (p-value 0.004) Course (ref bachelor's degrees in Medicine and Surgery): Dental Surgery; 3.17 (p-value 0.014)
Mirtskulava, 2008	All types of HCWs	265	Occupation, Length of employment as a HCW, Has routine direct contact with TB patients	Length of employment as a HCW (ref ≤ 5 y): > 5 y; 5.09 (2.77-9.33)	Age, Gender, Education level, Positive history of BCG	Not significant
Mostafavi, 2016	Lab personnel	177	Job group, History of work (year), Contact with TB patients	Not significant	Sex, Age, Education level, BCG vaccination	Not significant

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
Munisamy, 2017	All types of HCWs	399	Occupation category, Time worked in current position, Total time working in health care, Current workplace	Occupation category (ref management): health professional; 2.07 (1.34-3.55), allied health staff; 2.03 (1.02-2.78), support staff; 2.21 (1.19-3.89) Time worked in current position (ref < 5 y): 5-9 y; 1.77 (1.04-4.67), > 10 y: 1.59 (1.12-3.93) Current workplace (ref non-clinical areas): outpatient areas; 1.51 (1.07-4.46), inpatient wards 1.67 (1.10-4.32), intensive care unit/operation theater 1.36 (1.09-3.94) ^a	Age, Ethnicity, Gender, Marital status, Chronic disease, Diabetes mellitus, Hypertension, Ischemic heart disease, Dyslipidemia, Lung disease	Chronic disease: any (one or more); 1.19 (1.03-2.14) Diabetes mellitus: yes; 1.38 (1.11-2.85) ^a
Nasehi, 2017	Lab personnel and low risk HCWs	1006	Group, Length of employment, Contact with TB patients	Group (ref low risk HCWs): TB lab staff; 2.06 (1.35-3.17)	Sex, Age, Education level, History of smoking, Chronic disease	Education level (ref elementary): associate's degree; 0.50 (0.28-0.80), license; 0.40 (0.23-0.69) Chronic disease: yes; 1.82 (1.13-2.95)
Powell, 2011	All types of HCWs	956	Department assignment, Work setting, Job assignment	Not significant	Age, Sex	Age (ref 20-28 y): 29-40 y; 1.9 (1.3-2.9), 41-45 y; 2.2 (1.5-3.3), ≥ 45 y; 2.1 (1.3-3.1)

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
						Male sex; 1.5 (1.1-2.1)
Rogério, 2015	Community health workers	307	Working in a primary care unit that had implemented a TB control program, Media duration of employment, Working in facility with high risk of TB, Frequency of using personal protective equipment, Easy access to personal protective equipment, Received any training on TB, How good training for the clinical practice, Frequency on get information on TB	Working in a primary care unit that had implemented a TB control program: yes; 1.9 (1.1-3.4)	Sex, Age, Education level, District classification (high or medium prevalence), Taking immunosuppressant treatment, BCG vaccination, History of household contact with TB, Previous TST result	History of household contact with TB: yes; 1.7 (1.1-3.0) Level of education: University; 3.6 (1.1-11.9)
Rutanga, 2015	All types of HCWs	1023	Facility type, Years worked in health care, Department assignment, Work setting, Job assignment	Years worked in health care: each additional year; 1.01 (1.01-1.06)	Age, Gender, HIV status	Not significant

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
Severo, 2011	Nurses	55	Occupation, Duration of employment, Workplace	Not significant	Gender, Skin color, Age, BCG scar, Smoker,	Not significant
van Rie, 2013 (Medical Students)	Medical students	79	Not determined	Not determined	Age, Gender, Non-occupational TB contact, TB knowledge score	TB knowledge score (ref > 8): ≤ 8 ; 0.29 (0.09-0.98)
van Rie, 2013 (HCWs)	HCWs	120	Job category	Not significant	Age, Gender, HIV status, Non-occupational TB contact, TB knowledge score	Not significant
Whitaker, 2013	All types of HCWs and medical students	308	Contact with TB patients, Years in healthcare, Occupation	Occupation (ref admin): Nurse; 2.77 (1.01-7.55)	Gender, Age, BCG vaccine history	Age in years; 1.05 (1.01-1.10)
Zhou, 2014	All types of HCWs	529	Duration of healthcare profession, Type of hospital, Department of hospital work, Had ever worked in TB clinic or ward, Had ever worked in HIV clinic or ward, Contact with blood or other body fluid in work, Work hours everyday, Consistent mask use in professional	Duration of healthcare profession (ref ≤ 5 y): 6-10 y; 1.89 (1.10-3.25), > 10 y; 1.80 (1.20-2.68) Type of hospital (ref general hospital): infectious disease hospital; 2.40 (1.59-3.62) Had ever worked in HIV clinic or ward: yes; 1.87 (1.08-3.26)	Sex, Age, Han Ethnic, Education status, Profession qualification, Monthly income, Residential area, Live status, Average per-capita living space, Smoking, Drinking, Calcium/vitamin supplement, Physical exercise (times per week), Self-reported using BCG	Not significant

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
			work, Kind of mask used in medical work, Wash hands, Attending regular physical examination every time, Attending infection control training, Intimate contact with TB patients, Knowledge of TB prevention and control, Policy of TB treatment and care			
Risk Factors for Positive IGRA						
Babayigit, 2014	All types of HCWs	96	Health care facility, Working duration	Health care facility (ref university hospital): TB control dispensary; 22.05 (1.35-358.85) Working duration (months); 1.017 (1.002-1.033) ^a	Age	Not determined
Dagnew, 2012	Medical and paramedical students	107	Department, Year of study	Not significant	Age, Place of birth, Religion, Khat consumption, BCG scar, BMI	Age; 1.7 (1.17-2.35) Khat consumption: yes; 9.6 (1.36-68.13)

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
de Souza, 2014	All types of HCWs	632	Professional category, Work only at primary health care, Years served in health care profession at primary health care	Years served in health care profession at primary health care (ref < 5): ≥ 5 ; 1.70 (1.07-2.71)	Gender, Age, Presence of NCG scar, Contact with a household member with TB, Alcohol abuse, Prior TST, Smoker, Comorbidity	Female gender; 0.47 (0.26-0.85) Presence of BCG scar: yes; 0.54 (0.32-0.90)
Drobniewski, 2007	Medical students	238	Not stated clearly	Not significant	Not stated clearly	Not significant
Drobniewski, 2007	All type of HCWs	262	Work in a TB clinic, More than 5 years in medical practice	Work in a TB clinic; 1.9 (1.1-3.5)	Age, TB in the past, Gender	Not significant
El-Sokkary, 2015	Nurses and Lab personnel,	132	Profession, Duration of work	Profession (p= 0.01) Duration of work (p=0.032)	Age, Sex, BCG vaccination, HCV, Smoking, Family history of TB, Diabetes mellitus	Family history of TB (p=0.042), Diabetes mellitus (p=0.024)
He, 2012	All types of HCWs	999	Hospital, Job category, Years in health care, Cared for TB patient in last year, Average daily time in patient last year, Ever had co-worker with TB, Aware of TB infection control guidelines, Had infection control training ever	Years in health care (ref < 1): > 15 ; 1.94 (1.13-3.32) Average daily time in patient last year (ref 0): > 4 hours; 1.87 (1.21-2.89) Ever had co-worker with TB: yes; 1.86 (1.01-3.42)	Age, Sex, Education, Self-report having BCG, Household contact with TB, Smoking status, Density of household	Age (ref 18-29): 30-39 y; NS, 40-49 y; 1.93 (1.15-3.24), ≥ 50 y; 3.21 (1.77-5.82) Self-report having BCG: yes; 0.61 (0.42-0.88)

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
He, 2015	Village doctor	866	Working duration, Minutes spend on diagnosing one patient, Whether referred suspected TB patient in recent three years, Density of clinical areas (m ² per staff)	Working duration (ref < 15 y): >25 y; 1.64 (1.12-2.39)	Gender, Age, Education, BCG scar, Smoking status, Average yearly income, Density of household	Male gender; 2.69 (2.02-3.58) Education (ref college or above): below college; 1.42 (1.01-1.97)
Kargi, 2017	All types of HCWs	100	Occupation, Duration of work	Not significant	Age, gender, BCG positivity	Not determined
Li-fan, 2013	All types of HCWs	101	Job category, Years served in the health care profession, Exposure to sputum smear positive TB patient	Exposure to sputum smear positive TB patients: yes; 5.76 (1.38-24.00)	Age, gender, BCG vaccine scar	Not significant
Lien, 2009	All types of HCWs	300	Hospital, Job, Working years, Mask use	Hospital: TB; 1.94 (1.04-3.64)	Age, Sex, BMI, Education	BMI (ref 18.5-25.0): ≥ 25 ; 4.18 (1.14-15.36) Education (ref university and higher): high school and lower; 4.28 (1.28-14.27), Pre-university; 3.54 (1.18-10.59)
Mirtskulava, 2008	All types of HCWs	265	Occupation, Length of employment as a HCW, Has routine direct contact with	Length of employment as a HCW (ref ≤ 5 y): > 5 y; 2.26 (1.27-4.01)	Age, Gender, Education level, Positive history of BCG	Age (ref ≤ 30 y): > 30 y; 2.91 (1.32-6.43)

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
			TB patients			
Mostafavi, 2016	Lab personnel	177	Job group, History of work (year), Contact with TB patients	Not significant	Sex, Age, Education level, BCG vaccination	Not significant
Nonghanphithak, 2016	All types of HCWs	112	Occupation, Work location, Employment length in years, Hours worked per day, Known TB exposure in the hospital, Type of exposure, Frequency of handling TB specimens or patients per week	Occupation (ref housekeepers/general duties): Nurse; 2.78 (1.19-6.49) Employment length in years (ref < 10 y): ≥ 10 y: 8.78 (1.26-62.29) Known TB exposure in the hospital: yes; 13.32 (1.61-110.04)	Gender, Age, BMI, BCG vaccination, Education	Age (ref < 30 y): ≥ 30 y; 18.880 (1.52-234.36)
Ozdemir, 2007	All types of HCWs	76	Working duration	Not significant	Gender, Age, BCG status, TB history	Not significant
Rafiza, 2011	All types of HCWs	953	Duration of employment, Risk group, Job category, Workplace, Clinical base	Job category (ref others): Nurse; 4.65 (1.10-19.65)	Age, Sex, Marital status, Race, Level of education, Income group, Body mass index, Lived in same house with friend/family with active TB, Co-morbid condition, Previous	Age group (ref ≤ 24 y): ≥ 35 y; 9.49 (2.22-40.50) Male sex; 3.70 (1.36-10.02) Lived in same house with friend/family with active TB: yes; 8.69 (3.00-25.18)

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
					active TB, Had received TB treatment, Substance abuse	
Thuong, 2016	All types of HCWs	109	Job, Working place	Not significant	Age, Sex, BMI, Granulysin concentration (by ng/ml)	BMI (ref 18.5-24.9): ≥ 25.0 ; 8.43 (1.37-51.75) Granulysin concentration; 0.55 (0.31-0.98)
van Rie, 2013 (Medical students)	All types of HCWs	79	Not determined	Not determined	Age, Gender, Non-occupational TB contact, TB knowledge score	Not significant
van Rie, 2013 (HCWs)	Medical students	120	Job category	Not significant	Age, Gender, HIV status, Non-occupational TB contact, TB knowledge score	Not significant
Wei, 2013	All types of HCWs	210	Nurse, Length of work	Nurse: yes; 2.43 (1.08-5.44)	Age, BCG vaccination	Age (ref < 30 y): ≥ 30 y; 6.15 (1.88-20.15)
Whitaker, 2013	All types of HCWs and medical students	319	Contact with TB patients, Years in healthcare, Occupation	Contact with TB patients (ref rare): frequent; 3.04 (1.79-5.14)	Gender, Age, BCG vaccine history	Age in years; 1.05 (1.01-1.09)

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
Zhang, 2013	All types of HCWs	755	Working years, Job, Workplace, Laboratory staff	Working years (ref ≤ 2 y): 11-20 y; 3.57 (1.46-8.71), > 20 y; 3.41 (1.28-9.11) Job (ref admin staff): technician staff; 2.02 (1.12-3.64), laboratory staff; 2.76 (1.36-5.60)	Age, Gender, Education, The history of household TB contact	The history of household TB contact: yes; 2.47 (1.15-5.33)
Zwerling, 2013	Nursing and medical students	226	Number days spent working on medical wards	Not significant	Not determined	Not determined

^aSignificant risk factors in univariate analysis for all studies where multivariate analysis was not done or reported

HCWs, health care workers

HCSs, health care students

Table S6a. Incidence of LTBI in HCWs as measured by TST conversion

Study (Author, Year, Country)	Type of participants	Period of follow up	TST conversion definition ^a	Number of total initially tested	Number of negative at initial	Number of retested	Number of conversions	TST conversion rate		Annual incidence rate (%; 95% CI) ^b
								%	95% CI	
Adams, 2015, South Africa	All types of HCWs	One year	B	147	34	34	13	38.2	22-56	38.2 (22-56)
Borrito, 2011, Cuba	All types of HCWs	One year	A	350	296	220	3	1.4	0.3-3.9	1.4 (0.3-3.9)
Calixto-Aguilar, 2016, Cuba	Medical students	Maximum two years	A	548	511	548	61	11.1	8.6-14.1	5.6 (4.3-7.1)
Christopher, 2011, India	Nursing students	One year	B	436	217	179	14	7.8	4.3-12.8	7.8 (4.3-12.8)
Chung-Delgado, 2012, Peru	Medical students	One year	B	547	468	505	24	4.7	3.1-6.9	4.7 (3.1-6.9)
Corbett, 2007, Zimbabwe	Nursing students	6-12-18 months	B	351	159	148	30	20.3	14.1-27.7	-

Study (Author, Year, Country)	Type of participants	Period of follow up	TST conversion definition ^a	Number of total initially tested	Number of negative at initial	Number of retested	Number of conversions	TST conversion rate		Annual incidence rate (%; 95% CI) ^b
								%	95% CI	
de Miranda, 2012, Brazil	All types of HCWs	One year	B	251	122	39	2	5.1	0.6-17.3	5.1 (0.6-17.3)
Emadi-Koochak, 2009, Brazil	Medical students and pharmacy students	Three years	B	256	239	212	24	11.3	7.4-16.4	3.8 (2.4-5.6)
Gonzalez, 2011, Argentina	All types of HCWs and medical students	Within two years	A	1549	544	275	23	8.3	5.4-12.3	4.2 (2.7-6.2)
He, 2015, China	Village doctor	One year	A	618	465	465	53	11.4	8.6-14.6	11.4 (8.6-14.6)
			C	618	465	465	45	9.7	7.1-12.7	9.7 (7.1-12.7)
			B	618	465	465	37	7.9	5.7-10.8	7.9 (5.7-10.8)
Kiertiburanakul, 2012, Thailand	Nurses, nursing assistance, nursing and medical students	One year	C	1438	485	369	42	11.4	8.3-15.1	11.4 (8.3-15.1)
Lopes, 2008, Brazil	Nurses, Nursing aids	One year	A	128	49	32	7	21.9	9.3-39.9	21.9 (9.3-39.9)
McCarthy, 2015, South Africa	All types of HCWs and medical students	6 months and one year	A	196	107	93	25	26.7	18.2-37.1	-
Moreira, 2010, Brazil	Community Health Agents	One year	B	72	61	61	15	24.5	14.5-37.3	24.5 (14.5-37.3)
Pai, 2006, India	Nursing and medical students	1,5 year	B	353	168	147	6	4.1	1.5-8.7	2.7 (1.0-5.8)
			C	353	168	147	14	9.5	5.3-15.5	6.3 (3.5-10.4)
Perez-Lu, 2013, Peru	All types of HCSs	One year	A	4842	Not clear	Not clear	Not clear			-
Rabahi, 2007, Brazil	All types of HCWs	One year	B	437	257	131	28	21.3	14.7-29.4	21.3 (14.7-29.4)

Study (Author, Year, Country)	Type of participants	Period of follow up	TST conversion definition ^a	Number of total initially tested	Number of negative at initial	Number of retested	Number of conversions	TST conversion rate		Annual incidence rate (%; 95% CI) ^b
								%	95% CI	
		Two years	B	-	103	90	12	13.3	7.1-22.1	-
		Three years	B	-	78	40	3	7.5	1.5-20.4	-
Sawanyawisuth, 2012, Thailand	All types of HCWs	One year	B	Not clear	Not clear	1025	203	19.8	17.4-22.4	19.8 (17.4-22.4)
Whitaker, 2013, Georgia	All types of HCWs and medical students	6-26 months	B	308	135	48	11	22.9	12.0-37.3	-

^aTST conversion definition:

A: A newly positive TST (induration >10 mm) after a documented negative-baseline TST (induration of <10 mm) at any time after a negative two-step baseline, or more than 1 year after a negative single TST

B: Baseline TST <10 mm and a follow up TST >10 mm and a 10 mm increase over the baseline

C: Baseline TST <10 mm and a follow up TST >10 mm and a 6 mm increase over the baseline

^bAll incidence were converted to an annual incidence or equivalent to an annual incidence

Table S6b. Incidence of LTBI in HCWs as measured by IGRA conversion

Study (Author, Year, Country)	Type of participants	IGRA used	Period of follow up	IGRA conversion definition ^a	Number of total initially tested	Number of negative at initial	Number of retested	Number of conversions	IGRA conversion rate		Annual incidence rate (%; 95% CI) ^b
									%	95% CI	
Adams, 2015, South Africa	All types of HCWs	QFT-GIT	One year	A	332	113	113	25	22.1	14.9-30.9	22.1 (14.9-30.9)
				B	332	113	113	20	17.7	11.2-26.0	17.7 (11.2-26.0)
				C	332	113	113	16	14.2	8.3-21.9	14.2

											(8.3-21.9)
				D	332	113	113	15	13.3	7.6-20.9	13.3 (7.6-20.9)
		T- SPOT.TB	One year	A	292	115	115	25	21.7	14.6-30.4	21.7 (14.6-30.4)
				B	292	115	115	23	20	13.1-28.5	20 (13.1-28.5)
Escombe, 2010, Peru	All types of HCWs	QFT-GIT	One year	A	70	39	27	8	30	13.7-50.2	30 (13.7-50.2)
He, 2015, China	Village doctors	QFT-GIT	One year	A	613	361	361	69	19.1	15.2-23.6	19.1 (15.2-23.6)
				B	613	361	361	68	18.8	14.9-23.2	18.8 (14.9-23.2)
				C	613	361	361	63	17.5	13.7-21.8	17.5 (13.7-21.8)
				D	613	361	361	52	14.4	10.9-18.5	14.4 (10.9-18.5)
McCarthy, 2015, South Africa	All types of HCWs and Medical students	QFT-GIT	6 months & one year	A	196	97	97	25	25.8	17.4-35.7	-
Pai, 2006, India	Nursing and medical students	QFT-GIT	1,5 year	A	353	208	147	17	11.6	6.9-17.9	7.7 (4.5-12.0)
				D	353	208	147	11	7.5	3.8-13.0	4.9 (2.5-8.7)
Rafiza, 2012, Malaysia	All types of HCWs	QFT-GIT	One year	A	954	704	704	69	9.8	7.7-12.2	9.8 (7.7-12.2)
Whitaker, 2013, Georgia	All types of HCWs and Medical students	QFT-GIT	6-26 months	A	319	173	77	23	29.9	19.9-41.4	-
Zwerling, 2013, India	Nursing and medical students	QFT-GIT	Every 6 months for 18 months	A	270	162	441 ^c	63	14.3	11.1-17.9	-

^aQFT-GIT conversion definition:

A: baseline TB antigen-Nil <0.35 IU/ml and follow up TB antigen-Nil ≥0.35 IU/ml

B: baseline TB antigen-Nil <0.35IU/ml and follow up TB antigen-Nil ≥0.35IU/ml, plus a 30% increase over the baseline
C: baseline TB antigen-Nil <0.35IU/ml and follow up TB antigen-Nil ≥0.35IU/ml, plus an absolute increase of 0.35IU/ml over the baseline
D: baseline TB antigen-Nil<0.35IU/ml and follow up TB antigen-Nil ≥0.70IU/ml
T-SPOT.TB conversion definition:
A: baseline TSPOT.TB negative and follow-up positive using the ≥6 spot increment
B: baseline T-SPOT.TB negative and follow-up positive using the ≥8 spot increment
^bAll incidence were converted to an annual incidence or equivalent to an annual incidence
^cTreating each period as an independent observation

Table S6c. IGRA reversion rates (annual)

Study (Author, Year, Country)	Type of participants	IGRA used	Period of follow up	Number of positive at initial and retested	Number of reversions	IGRA reversion rate	
						%	95% CI
Adams, 2015, South Africa	All types of HCWs	QFT-GIT	One year	219	15	6.8	3.9-11.0
Escombe, 2010, Peru	All types of HCWs	QFT-GIT	One year	20	1	5	1.3-24.9
He, 2015, China	Village doctors	QFT-GIT	One year	252	53	21.0	16.2-26.6

Pai, 2006, India	Nursing and medical students	QFT-GIT	1,5 year	38	9	23.7	11.4-40.2
Rafiza, 2012, Malaysia	All types of HCWs	QFT-GIT	One year	64	19	29.7	18.9-42.4

Table S7. Risk factors associated with LTBI incidence measured TST and IGRA conversion

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
Risk Factors for TST Conversion						
Adams, 2015	All types of HCWs	34	Employment sector, Formal health qualification, Occupational tasks, Facility factors, Employment in health care	Engaged in counseling TB patients; 0.12 (0.15–0.92)	Diabetes, Current alcohol consumption, Smoking history, BCG vaccination, HIV positive status, TB symptom screen positive, Interval Referral for TB/HIV, History of TB Treatment (ever TB)	Not significant
Chung-Delgado, 2012	Medical students	505	Not determined	Not determined	Sex, Age, Year of university entry, Previous TB, Smoking, Alcohol consumption, BMI	Year of university entry: 2009-2010; 2.53 (1.11-5.76)
Christopher, 2011	Nursing students	179	Nursing course currently enrolled, Total time spent in health care, Direct contact with sputum positive TB patients, Days spent caring for pulmonary TB patients, Ever performed or assisted in sputum collection, Days spent working on isolation wards, Days spent working on	Days spent caring for pulmonary TB patients; 1.12 (1.04-1.20) Ever performed or assisted in sputum collection; 4.57 (1.11-18.86)	Age, BCG vaccination, BMI, Highest level of education completed, Average household monthly income, QFT positive, Continuous IGRA result	QFT positive; 5.89 (1.72-20.23)

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
			pulmonary medicine wards			
Corbett, 2007	Nursing students	148	Not determined	Not determined	Age, Sex, Crowding in the family home, type of student accommodation, Community contact with TB patient during study, Having parents who were HCWs, HIV infection status, BCG vaccination, Previous TST	Not significant
da Costa, 2009	All types of HCWs	Not clear	Occupation, Work location, Ward with respiratory isolation room, Exposure to pulmonary TB case in hospital	Exposure to pulmonary TB case in hospital: yes; 0.31 (0.13-0.73)	Sex, BCG scar	Not significant
He, 2015	Village doctor	465	Working duration, Minutes spend on diagnosing one patient, Whether referred suspected TB patient in recent three years, Density of clinical areas (m ² per staff)	Working duration (ref < 15 y): 15-25 y; 0.46 (0.22-0.96)	Gender, Age, Education, BCG scar, Smoking status, Average yearly income, Density of household	Not significant

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
McCarthy, 2015	All types of HCWs and medical students	93	Occupation, TB exposure, TB knowledge score, TB infection control training, TB infection control practiced by participant, TB infection control practice	Not significant	Sex, HIV status, Age	Not significant
Perez-Lu, 2013	All types of HCSs	Not clear	TB contact history, Careers, Internship year	Careers (ref admin, science, and education): dentistry: 1.28 (1.05-1.54), nursing; 1.61(1.35-1.92), medical technology; 1.51 (1.27-1.78) Internship year; 1.94 (1.64-2.30)	Age, Sex, BMI,	Age (ref under 18 y): 18 y: 2.97 (2.29-3.84), between 18-21 y; 3.92 (3.09-4.96), 21 y or more; 4.00 (3.16-5.06)
Sawanyawisuth, 2012	All types of HCWs	1025	Job	Job (ref office staff): nurses; 2.3 (1.3-4.1), nurse assistants; 2.3 (1.3-4.7), ward workers; 3.0 (1.8-5.0), technicians; 1.2 (0.5-2.6)	Gender, BCG scar	Male gender; 3.0 (1.9-4.6) BCG scar; 1,5 (1.0-2.3)
Risk factors associated with LTBI incidence measured IGRA conversion						

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
Adams, 2015	All types of HCWs	113	Employment sector, Formal health qualification, Occupational tasks, Facility factors, Employment in health care	Using QFT-GIT: Engaged in counseling TB patients; 3.04 (1.01–9.15) Using T-SPOT.TB: Employment sector, individuals in local authority employment working for the provincial health department (OR 14.19, 95% CI 1.28–157.75), and having a positive TST at baseline (OR 3.40, 95% CI 1.02–11.34).	Diabetes, Current alcohol consumption, Smoking history, BCG vaccination, HIV positive status, TB symptom screen positive, Interval Referral for TB/HIV, History of TB Treatment (ever TB)	Not significant
He, 2015	Village doctors	361	Working duration, Minutes spend on diagnosing one patient, Whether referred suspected TB patient in recent three years, Density of clinical areas (m ² per staff)	Minutes spend on diagnosing one patient (ref < 15 minutes): ≥ 15 minutes; 2.62 (1.39–4.97)	Gender, Age, Education, BCG scar, Smoking status, Average yearly income, Density of household	Not significant
McCarthy, 2015	All types of HCWs and Medical students	97	Occupation, TB exposure, TB knowledge score, TB infection control training, TB infection control practiced by participant, TB	Occupation (ref medical student): HCW; 7.7 (1.6–36.9)	Sex, HIV status, Age	Not significant

Study	Type of participants	Number of participants	Occupational		Non Occupational	
			Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)	Risk factors assessed	Significant risk factors in multivariate analysis; Adjusted OR (95% CI)
			infection control practice			
Rafiza, 2012	All types of HCWs	704	Duration of employment, Job category, Workplace	Workplace (ref other): emergency department; RR 2.18 (1.07-4.43)	Sex, Age	Not significant
Whitaker, 2013	All types of HCWs and Medical students	77	Contact with TB patients, Years in healthcare, Occupation	Not significant	Gender, Age, BCG vaccine history	Increasing age per year; 1.07 (1.01-1.13)
Zwerling, 2013	Nursing and medical students	270	Occupational exposure	Not significant	Not determined	Not determined

Table S8. TB infection control (IC) measures in health care facilities

Author, Year, Reference	Any TB IC measures at health care setting	TB IC policy, plan, assessment, and TB surveillance	Staff capacity building	Patient triage and management	Sputum management	Staff protection (personal respiratory protection)	Environmental controls	TB IC practices adequate	How they measured TB IC practice in their health facility
Christopher, 2010	Yes	Yes	Not stated	Yes	Not stated	Yes	Not stated	No	Not stated
Christopher, 2011	Yes	Yes	Not stated	No	Not stated	Not stated	No	No	Not stated
da Costa, 2009	Yes	Yes	Yes	Yes	Not stated	Yes	Yes	Not clear	Not stated
de Miranda, 2012	Yes	Not stated	Not stated	No	Not stated	Yes	Not stated	Not clear	Not stated
Escombe, 2010	Yes	Not stated	Not stated	No	Not stated	No	No	No	Not stated
Franco, 2006	Yes	Not stated	Not stated	Not stated	Not stated	Yes	Yes	No	Not stated
He, 2010	Yes	Yes	Not stated	Yes	Not stated	No	Yes	No	Not stated
Hohmuth, 2006	Yes	Not stated	Not stated	No	Not stated	No	Not stated	Not clear	Not stated
Kiertiburanakul, 2012	Yes	Not stated	Not stated	Not stated	Not stated	Not stated	Yes	Not clear	Not stated
Lopes, 2008	Yes	Not stated	Not stated	Not stated	Not stated	Not stated	Not stated	No	CDC guidelines
McCarthy, 2015	Yes	No	Not stated	Not stated	Not stated	Not stated	Not stated	Not clear	Not stated
Powell, 2011	Yes	No	Not stated	Yes	Yes	No	Yes	No	WHO guidelines
Rutanga, 2015	Yes	Yes	No	Yes	Not stated	Not stated	Yes	Not clear	Not stated
Ratnatunga, 2015	Yes	No	Not stated	Yes	Not stated	Not stated	No	No	Not stated
Zwerling, 2013	Yes	Not stated	Not stated	Not stated	Not stated	No	Not stated	No	Not stated

Table S9. Summary of non-English studies where an English abstract was available

First Author	Year	Journal	Language (Country)	Study type	Type of participants	No of participants	Principle findings
Cesur	2010	Mikrobiyoloji Bulteni	Turkish (Turkey)	Cross-sectional TST and QFT-GIT	HCWs	19	TST positivity rate 36.8% QFT-GIT positivity rate 47.4%
Demir	2014	Anatolian Journal of Clinical Investigation	Turkish (Turkey)	Cohort TST	HCWs	201	Prevalence of LTBI 31.8% (64/201)
Karaman	2011	Duzce Medical Journal	Turkish (Turkey)	Cross-sectional TST	Hospital cleaning staff	106	The prevalence of LTBI 74.5%
Ozturk	2007	Mikrobiyoloji Bulteni	Turkish (Turkey)	Cross-sectional TST and QFT-GIT	HCWs	74	No data
Yilmaz	2013	Asim, Allerji, Immunoloji	Turkish (Turkey)	Cross-sectional TST	HCWs	60	TST was found over 10 mm in all subjects TST was found over 15 mm in 65% of the subjects