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Contacts of underserved tuberculosis patients have higher odds of TB disease in North West England: a cohort study

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SUMMARY

OBJECTIVE: To investigate the association between patients' social risk factors and the risk of tuberculous infection and TB disease among their contacts in England.

DESIGN: This was a cohort study of all TB cases from North West England diagnosed between 27 March 2012 and 28 June 2016. The social risk factors of TB cases were evaluated to estimate their need for enhanced case management (ECM), from 0 (standard of care) to 3 (intensive social support).

RESULTS: A total of 2139 cases and their 10 019 contacts met the eligibility criteria. Being a contact of a patient with smear-positive TB with high ECM or being of Black Caribbean ethnicity was independently associated with greater odds of active TB disease (smear-positive vs. smear-negative, OR 5.3, 95%CI 3.2–8.7; ECM-3 vs. ECM-0, OR 2.2, 95%CI 1.01–5.0; Black Caribbean vs. White, OR 7.4, 95%CI 2.1–25). Being a contact of a patient with smear-positive TB or of Black Caribbean ethnicity was also independently associated with greater odds of tuberculous infection (smear-positive vs. smear-negative, OR 5.3, 95%CI 3.8–7.3; and Black Caribbean vs. White, OR 6.7, 95%CI 2.0–25).

CONCLUSIONS: The social complexity and ethnicity of patients were associated with tuberculous infection and TB disease in their contacts.

KEY WORDS: TB; contact screening; TB prevention; TB control; enhanced case management; social and clinical complexity; public health

DESPITE DECLINING TUBERCULOSIS (TB) rates in England,[1,2] there has been an increase in the proportion of TB cases with complex clinical and social needs.[2] Identifying cases and their household contacts, and providing enhanced TB care where appropriate, are key components of the Public Health England and National Health Service England Collaborative Tuberculosis Strategy 2015–2020.[2] Evaluating clinical and social needs by assessment of the enhanced case management (ECM) level is one method of identifying high-risk TB cases.[3]

In North West England, TB specialist nurses evaluate the clinical and social needs of TB patients and assign an ECM level from 0 (standard case management) to 3 (complex needs requiring the highest level of intensive support), which is subsequently reassessed during multidisciplinary TB cohort review (known as TB cohort audit [TBCA] in North West England).[4] The ECM offered varies according to the needs of each household, but can include intensive support from ancillary services and partner organisations, more frequent clinic or home visits, and transport vouchers or translation services to overcome language barriers. Table 1 provides a summary of the guide to the classification of patients to ECM levels used in TB cohort reviews. As a general rule, a patient's overall ECM level will be classified according to his/her highest level of need across three domains: clinical factors, TB-specific factors and social factors (Table 1). For example, if a patient's social factors are scored as ECM level 3 and his/her clinical and TB-specific factors are scored as ECM level 2, the patient's overall ECM level will be 3.

Close contacts of TB patients are known to have an increased risk of prevalent latent tuberculous infection

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Table 1 Guide to classification of patients to ECM levels used in the TB Cohort Review[4]

ECM	Clinical factors	TB-specific	Social factors
0	Physically able to self-medicate No CNS impairment Positive IsoScreen* at reviews Correct tablet count at reviews	Contact tracing requirements limited to adults in the same household No stigma-related issues	No language barriers No housing or finance issues impacting on treatment
1	Elderly requiring monitoring for side effects Children requiring monitoring to ensure compliance of child and parent/carer Requires GP or community pharmacy input for blister packs to check correct doses Taking complex medications e.g., HIV medications Disease site e.g., smear-positive pulmonary or central nervous system disease	Contact tracing requirements in various areas and/or settings e.g., patient out of area, workplace, community group settings Stigma that can be dealt with through one-to-one education	Requires interpreter for first visit but has some understanding of English Requires signposting for benefits and/or financial issues Patient difficult to reach, e.g., no front door bell, more than one address, problems getting time off work/college, refusal of home visits
2	Having complex side effects requiring LFT monitoring Needs more regular prompting with medications, e.g., blister packs, regular IsoScreen testing, tablet counts HIV and TB co-infection and starting both antiretroviral and anti-tuberculosis medications at a similar time Single drug resistance	Transmission within contacts or children who are contacts Stigma that requires more formal education, e.g., through community centres or workplaces	Financial difficulties that may affect treatment compliance, e.g., attending clinic, poor nutrition, poor heating Language barriers throughout treatment requiring easily accessible interpreter at each visit either face to face or by phone Alcohol and/or drug dependency without LFT derangement Patient difficult to reach, e.g., do not attend clinics, not home for reviews
3	More than one drug resistance Needs reintroduction of medications, e.g., due to deranged LFTs	Complex contact tracing, e.g., transmission to children, vulnerable groups, extensive transmission Involvement of PHE for workplace or community screening	Difficult language barriers throughout treatment Homelessness or housing issues due to finance Illegal immigrants, difficulty accessing benefits Potentially dangerous patients, where more than one person is required to visit Children who do not attend, and where social service input is required Patient difficult to reach, e.g., consistent failure to attend at clinics, consistently not home for reviews

* Urine test used to detect isoniazid for assessing patient adherence to anti-tuberculosis treatment. ECM = enhanced case management; TB = tuberculosis; CNS = central nervous system; GP = general practitioner; HIV = human immunodeficiency virus; LFT = liver function test; PHE = Public Health England.

(LTBI) and active TB disease.[1] Contact tracing and preventive therapy are well-established, important tools in TB prevention, particularly for underserved households in which patients and contacts share similar social and/or clinical risk factors.[5] However, there is minimal evidence concerning whether patients' social or clinical risk factors, including ECM level and ethnicity, can predict rates of prevalent LTBI and active TB disease in their household contacts. We aimed to fill this knowledge gap.

METHODS

Study design

A retrospective cohort study in North West England.

Data source

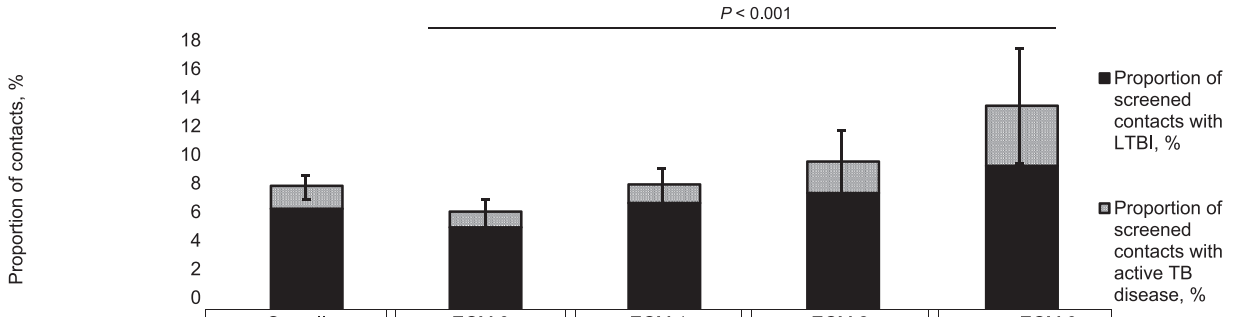
Patient data were collected using Public Health England's national Enhanced TB Surveillance (ETS) system and supplemented by complementary North West TBCA data. Neither ETS nor TBCA contains individual-level data about patients' contacts. The contact data entered into ETS include the total number of contacts identified per patient and, among these, the number of contacts who were screened for LTBI or active TB disease, diagnosed with LTBI or active TB disease, started on preventive therapy for LTBI, and those who completed preventive therapy for LTBI. Data were not available concerning the treatment or treatment outcomes of contacts diagnosed with active TB disease, or the contact screening and LTBI diagnostic methods used (e.g., symptom screening, chest radiograph, microbiological testing of sputum samples, the tuberculin skin test and interferon-gamma release assay).

Eligibility

Participants were TB cases of any age from North West England with microbiologically or clinically confirmed pulmonary or extra-pulmonary TB disease notified to ETS between 27 March 2012 and 28 June 2016, with a defined ECM level, and at least one identified contact.

Outcomes

The primary outcome was the prevalence of LTBI or of active TB disease and a positive screening outcome (sum of LTBI and active TB disease) in the contacts of



	Overall (*n* = 2139)		ECM 0 (*n* = 949)		ECM 1 (*n* = 660)		ECM 2 (*n* = 303)		ECM 3 (*n* = 227)	
	% (95%CI)	NNS	% (95%CI)	NNS	% (95%CI)	NNS	% (95%CI)	NNS	% (95%CI)	NNS
Active TB disease	1.6 (1.3–2.0)	63	1.1 (0.1–1.2)	91	1.3 (0.7–1.8)	67	2.2 (0.1–3.4)	45	4.2 (2.4–6.0)	24
LTBI	7.0 (6.2–7.8)	14	5.7 (4.6–6.8)	19	7.4 (5.9–8.8)	14	8.1 (6.1–10)	12	10 (7.0–13)	10
Positive screening outcome	8.6 (7.7–9.5)	12	6.8 (5.5–7.9)	15	8.7 (7.0–10)	11	10 (8.0–13)	10	14 (10–17)	7

Figure 1 Association of patients' (*n* = 2139) ECM level with LTBI or active TB disease and positive screening outcomes in their contacts. *P* values represent χ^2 test for trend across ECM levels, which was $P < 0.001$ for LTBI, active TB disease and positive screening outcome respectively. Error bars are the 95%CIs for the proportion of contacts with positive screening outcome across ECM levels. A sensitivity analysis was performed excluding patients in whom ECM levels were calculated on the basis of poor adherence or having child contacts. Proportions of assessed contacts with LTBI in the sensitivity analysis were as follows: total (*n* = 860) 5.9% (95%CI 4.5–7.2); ECM 0 (*n* = 391) 6.3% (95%CI 4.2–8.4); ECM 1 (*n* = 255) 6.5% (95%CI 3.8–9.1); ECM 2 (*n* = 132) 3.3% (95%CI 1.1–5.6); ECM 3 (*n* = 82) 6.0% (95%CI 1.8–10); *P* = 0.9. Proportions of assessed contacts with active TB disease in the sensitivity analysis were: total (*n* = 860) 1.4% (95%CI 0.70–2.1); ECM 0 (*n* = 391) 1.1% (95%CI 0.11–2.0); ECM 1 (*n* = 255) 0.78% (95%CI 0.0–1.7); ECM 2 (*n* = 132) 2.4% (95%CI 1.6–4.7); ECM 3 (*n* = 82) 3.3% (95%CI 0.0–6.4); *P* = 0.003. ECM = enhanced case management; CI = confidence interval; NNS = number needed to screen; TB = tuberculosis; LTBI = latent tuberculous infection.

patients as entered into the ETS database. The secondary outcome was identification of the specific social and clinical risk factors of patients who were independently associated with LTBI and active TB disease in their contacts.

Analysis

For the primary outcome, prevalence of LTBI or of active TB disease and a positive screening outcome in contacts were calculated and compared across their index patients' ECM levels using the χ^2 test for trend and between each ECM level using the χ^2 test. The number of contacts needed to screen (NNS) to detect one case of LTBI or active TB disease, or a positive screening outcome was also calculated.

For the secondary outcome, we used a multivariable logistic regression model to estimate odds ratios adjusted for potential confounders of contacts' LTBI and active TB disease prevalence according to their index patient's social and clinical risk factors (sex, age, ECM level, ethnicity, sputum smear positivity and postcode-associated index of multiple deprivation score).

Statistical analyses were performed using Stata v 12 (StataCorp, College Station, TX, USA) and R v 3.5.0 (R Foundation for Statistical Computing, Vienna, Austria).

Ethics

As anonymised, routinely collected public health surveillance data were used, participant consent was not sought. This study is part of wider evaluations approved by the UK North West TB Cohort Audit Steering Group, which reports to the UK North West TB Control Board.

RESULTS

During the study period, 2139 TB cases met eligibility criteria, and had 10 019 household contacts screened (median 4, interquartile range [IQR] 2–6, range 1–24). Of 2139 TB cases, 949 (44%) were categorised as ECM-0, 660 (31%) as ECM-1, 303 (14%) as ECM-2 and 227 (11%) as ECM-3. Patients with higher ECM levels were more likely to: have smear-positive pulmonary TB, be White and UK-born, be unemployed, and have more contacts identified per patient (Table 2). The most prevalent social and clinical risk factors contributing to higher ECM levels were being clinically complex, having a language barrier and being considered at risk of poor adherence to TB medications (Table 2). Contacts of patients with higher ECM levels were less likely to complete preventive therapy once initiated (Table 2).

Compared with the contacts of ECM-0 patients, contacts of patients with higher ECM levels were significantly more likely to have prevalent active TB disease (ECM-3: 4.2%, 95%CI 2.4–6.0 vs. ECM-0: 1.1%, 95%CI 0.1–1.16, $P < 0.001$ test for trend), LTBI (ECM-3: 10%, 95%CI 7.0–13 vs. ECM-0: 5.7%, 95%CI 4.6–6.8; $P < 0.001$) and a positive screening outcome (ECM-3: 14%, 95%CI 10–17 vs.

Table 2 Patients' sociodemographic features and their contacts' outcomes according to ECM level

	Total *n* (%)	ECM 0 *n* (%)	ECM 1 *n* (%)	ECM 2 *n* (%)	ECM 3 *n* (%)	*P* value*
Patients	2 139 (100)	949 (44)	660 (31)	303 (14)	227 (11)	—
Age group, years						
0–15	69 (3)	21 (2)	26 (4)	16 (5)	6 (3)	0.1
16–30	495 (23)	236 (25)	135 (20.5)	77 (25.5)	47 (21)	
31–45	683 (32)	327 (35)	200 (30)	85 (28)	71 (31)	
46–65	533 (25)	228 (24)	171 (26)	68 (22.5)	66 (29)	
>65	359 (17)	137 (14)	128 (19.5)	57 (19)	37 (16)	
Sex						0.2
Male	1 199 (56)	516 (54)	381 (58)	169 (56)	133 (59)	
Female	940 (44)	433 (46)	279 (42)	134 (44)	94 (41)	
Site of TB disease						<0.001
Extra-pulmonary	1 077 (50)	544 (58)	310 (47)	137 (45)	76 (33)	
Pulmonary, smear−	598 (28)	256 (27)	195 (30)	90 (30)	57 (25)	
Pulmonary, smear+	464 (22)	139 (15)	155 (23)	76 (25)	94 (41)	
Ethnic group ($n = 2083$)						<0.001†
White	559 (27)	206 (22.5)	165 (26)	82 (27.5)	106 (47)	
Black, African	241 (11.5)	100 (11)	90 (14)	30 (10)	21 (9)	
Black, Caribbean	11 (0.5)	5 (0.5)	1 (0.5)	2 (0.5)	3 (1)	
Black, Other	8 (0.5)	4 (0.5)	3 (0.5)	1 (0.5)	0 (0)	
Chinese	34 (2)	11 (1)	16 (2)	5 (1.5)	2 (1)	
Indian	338 (16)	188 (20.5)	69 (11)	60 (20)	21 (9)	
Bangladeshi	54 (2.5)	25 (3)	20 (3)	5 (2.5)	4 (2)	
Pakistani	711 (34)	325 (35)	242 (38)	93 (31)	51 (23)	
Mixed/Other	127 (6)	57 (6)	33 (5)	20 (6.5)	17 (8)	
UK-born ($n = 2081$)						<0.001
Yes	700 (34)	262 (28)	218 (34)	107 (36)	113 (51)	
No	1 381 (66)	660 (72)	422 (66)	192 (64)	107 (49)	
Time in UK, years, median [IQR] ($n = 1288$)	8 [3–20]	8 [4–16]	9 [3–23]	7.5 [2–22]	10 [2–21]	
Poverty level ($n = 2113$)						0.3
1 (most poor)	1 305 (62)	579 (62)	411 (63)	183 (62)	132 (59)	
2	356 (17)	162 (17)	115 (18)	47 (16)	32 (14)	
3	203 (9.5)	90 (9.5)	53 (8)	30 (10)	30 (13.5)	
4	141 (6.5)	65 (7)	45 (7)	20 (6.5)	11 (5)	
5 (least poor)	108 (5)	43 (4.5)	29 (4)	17 (5.5)	19 (8.5)	
Employment						<0.001
Employed	1 882 (88)	863 (91)	591 (90)	266 (88)	162 (71)	
Unemployed	257 (12)	86 (9)	69 (10)	37 (12)	65 (29)	
ECM factor						<0.001‡
Alcohol use	64 (3.0)	6 (0.63)	13 (2.0)	8 (2.6)	37 (16)	
Drug use	52 (2.4)	4 (0.42)	12 (1.8)	8 (2.6)	28 (12)	
Homelessness	42 (2.0)	3 (0.32)	12 (1.8)	10 (3.3)	17 (7.5)	
Previous TB	118 (5.5)	34 (3.6)	38 (5.8)	16 (5.3)	30 (13)	
Clinically complex	320 (15)	10 (1.1)	92 (14)	105 (35)	113 (50)	
Mental illness	68 (3.2)	3 (0.32)	23 (3.5)	17 (5.6)	25 (11)	
Hard-to-reach group	50 (2.3)	2 (0.21)	12 (1.8)	11 (3.6)	25 (11)	
Poor adherence	106 (5.0)	4 (0.42)	20 (3.0)	17 (5.6)	65 (29)	
Incarceration	58 (2.7)	9 (1.0)	18 (2.7)	10 (3.3)	21 (9.3)	
Gipsy traveller	3 (0.14)	0	0	0	3 (1.3)	
Child protection issues	15 (0.70)	0	2 (0.30)	3 (1.0)	10 (4.4)	
Language barrier	405 (19)	27 (2.9)	224 (34)	96 (32)	58 (26)	
Contacts identified§						NA
Contacts	10 019 (100)	3 998 (40)	3 223 (32)	1 526 (15)	1 272 (13)	
Child contacts	3 266 (100)	1 362 (42)	1 123 (34)	475 (15)	306 (9)	
Contacts identified per patient, mean ± SD¶						<0.001
Contacts	4.7 ± 3.8	4.2 ± 3.5	4.9 ± 3.8	5.0 ± 4.3	5.6 ± 4.2	0.02
Child contacts	1.5 ± 1.9	1.4 ± 1.7	1.7 ± 2.0	1.6 ± 2.1	1.3 ± 1.9	
Contacts assessed and diagnosed with LTBI#						
Assessed	9 201 (92)	3 711 (93)	2 985 (93)	1 368 (90)	1 137 (89)	<0.001
Diagnosed LTBI	690 (7.5)	217 (5.7)	224 (7.4)	132 (8.1)	117 (10)	<0.001
Started LTBI treatment	611 (89)	194 (89)	195 (87)	120 (91)	96 (82)	<0.001
Completed LTBI treatment	517 (85)	171 (88)	166 (85)	103 (86)	77 (80)	0.03
Child contacts assessed and diagnosed with LTBI						
Assessed	3 171 (97)	1 329 (98)	1 084 (97)	461 (97)	297 (96)	0.06
Diagnosed LTBI	277 (8.7)	68 (5.0)	108 (9.6)	58 (12)	43 (14)	<0.001

Table 2 (*continued*)

	Total *n* (%)	ECM 0 *n* (%)	ECM 1 *n* (%)	ECM 2 *n* (%)	ECM 3 *n* (%)	*P* value*
Started LTBI treatment	270 (97)	67 (99)	103 (95)	58 (100)	42 (98)	0.8
Completed LTBI treatment	224 (83)	59 (88)	84 (82)	48 (83)	33 (79)	0.5

* χ^2 test for trend (dichotomous variables) or Pearson's χ^2 test (other categorical variables) across ECM levels 0–3.
† χ^2 test for trend of White vs. non-White ethnic group across ECM levels 0–3.
‡ Each separate ECM variable had $P < 0.001$ on χ^2 test for trend across ECM levels 0–3.
§ Percentages indicate the proportion of contacts of patients at each ECM level.
¶ Analysis of variance was used to compare means of contacts identified per patient across ECM level.
# Percentage assessed = proportion of identified contacts assessed; proportion diagnosed LTBI = proportion of assessed contacts diagnosed with LTBI; proportion started LTBI treatment = proportion of those diagnosed with LTBI who started LTBI treatment; proportion completed LTBI treatment = proportion of those who started LTBI treatment who completed LTBI treatment.
ECM = enhanced case management; TB = tuberculosis; IQR = interquartile range; SD = standard deviation; LTBI = latent tuberculous infection.

ECM-0: 6.8%, 95%CI 5.5–7.9; $P < 0.001$; Figure 1). Comparing ECM-3 with ECM-0, NNS to identify one case of active TB disease was respectively 24 vs. 91, to identify one case of LTBI was 10 vs. 19 and to identify one positive screening outcome was 7 vs. 15 (Figure 1).

Multivariable logistic regression showed that sputum smear positivity, higher ECM level or Black Caribbean ethnicity of patients were independently associated with their contacts' risk of active TB disease (smear-positive vs. smear-negative: OR 5.3, 95%CI 3.2–8.7; ECM-3 vs. ECM-0: OR 2.2, 95%CI 1.01–5.0; Black Caribbean vs. White: OR 7.4, 95%CI 2.1–25; Figure 2). Sputum smear positivity and Black Caribbean origin of patients were also independently associated with their contacts' risk of LTBI (smear-positive vs. smear-negative: OR 5.3, 95%CI 3.8–7.3; and Black Caribbean vs. White: OR 6.7, 95%CI 2.0–25).

DISCUSSION

A simple risk stratification score generated by the TB multidisciplinary team at TBCA was implemented in North West England to estimate the ECM need of TB cases. Contacts of TB patients with a higher ECM level—and therefore, greater clinical and social complexity—and/or Black Caribbean ethnicity were more likely to have LTBI and active TB disease. Evaluation of the social and clinical risk factors of TB patients and estimation of their ECM level can be useful indicators of risk of a positive TB screening outcome among their contacts. Such evaluation could be used to prioritise contact tracing resources towards high-risk households to potentially enhance the effectiveness of TB prevention measures.

In high-income countries, ECM in high-risk TB patients, including those who use drugs and/or are homeless, has been shown to reduce poor adherence, loss to follow-up and death.[6,7] Our previous research

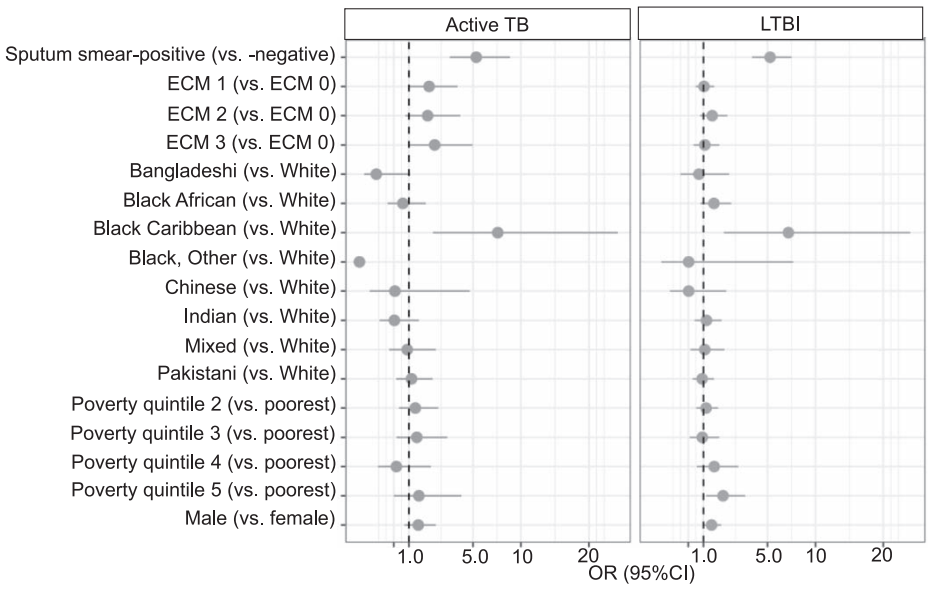


Figure 2 Multivariable logistic regression of patients' ($n = 2139$) characteristics and social/clinical risk factors and their association with LTBI and active TB disease in their contacts. The model was adjusted for clustering of contacts by the index patient. Due to a non-linear relationship between patient age and risk of LTBI and active TB disease among contacts, a restricted cubic splines term for age with 3 knots was included in the model. TB = tuberculosis; LTBI = latent tuberculous infection; ECM = enhanced case management; OR = odds ratio; CI = confidence interval.

from North West England has shown that patients with higher ECM levels are more likely to have adverse TB treatment outcomes, despite the mitigating effects of enhanced TB care.[4]

Our new findings suggest that not only may TBCA and ECM be vital in identifying patients who require additional support to achieve TB treatment success, but that these can also be used to indirectly estimate the needs of the close contacts of these patients. This is important because contact tracing and provision of preventive therapy are well-established, important tools in TB prevention, and enhanced support is required not only for high-risk TB patients but also for their households.[2,5]

Multiple scoring systems have been developed to estimate the risk of LTBI and active TB disease in the close contacts of TB patients. In Taiwan, an eight-point contact risk assessment scoring system was developed and validated to identify child contacts at risk of developing active TB disease.[8] In Peru, social and clinical risk factors such as body mass index, previous TB, level of exposure, poverty, indoor air pollution and ventilation were used to derive and validate a scoring system to estimate the risk of developing TB disease in adult contacts.[9] In Uganda, a modified version of the World Health Organization's pragmatic screening algorithm for the child (age <16 years) contacts of adult TB cases was used to identify children at high risk of asymptomatic, subclinical TB disease.[10]

However, these risk scores all rely on individual-level data on each contact's risk factors, which are not currently collected by England's ETS system or the North West's regional TBCA. The results of our analysis of ECM are the first to show that patients' ECM risk stratification and other patient characteristics, including ethnicity, can be applied to estimate the risk of LTBI and active TB disease in their household contacts.

Our study had several limitations. First, TBCA mostly occurred following treatment initiation, and variables contributing to ECM classification include confounding factors such as patients having poor adherence to anti-tuberculosis treatment or having child contacts, both of which are known to be associated with a higher risk of LTBI and active TB disease.[9] To overcome this limitation, we performed a sensitivity analysis in which we excluded those patients assigned ECM levels 1–3 with poor adherence to anti-tuberculosis treatment or a child contact. The sensitivity analysis was broadly consistent with the original analysis and is shown in Figure 1. Second, the ETS and TBCA data used for analysis were limited to patients from North West England. Findings may thus not be generalisable to other regions of England or worldwide. Third, ETS and TBCA data concerning contacts were limited to aggregate data because individual-level data (e.g., sociodemographic variables, and screening and LTBI preventive therapy outcomes of each individual contact) were not recorded. The lack of such contact data is a weakness of the current ETS and TBCA system, and it will be important to consider inclusion of more detailed (and individualised) TB prevention and control activities in future iterations of both as England and the United Kingdom progress towards TB elimination. Fourth, we could not elucidate whether the LTBI or active TB disease identified in household contacts was attributable to recent transmission of TB from the index case because no longitudinal tuberculin skin test or interferon-gamma release assay results were available and no genotyping data used. Finally, the number of TB cases with Black Caribbean ethnicity in the region was small ($n = 11$). Although statistically significant, the association found between Black Caribbean ethnicity and likelihood of LTBI or active TB disease therefore has a high degree of uncertainty (reflected by the wide CIs, seen in Figure 2) and should be interpreted with caution. Further studies with a larger cohort of TB cases are necessary to confirm this finding.

CONCLUSION

In North West England, the contacts of TB patients with higher social and clinical complexity, measured using a simple ECM evaluation or having Black Caribbean ethnicity, had greater odds of LTBI and active TB disease prevalence. These findings support the role of TBCA and ECM evaluation in North West England and can contribute to pragmatic prioritisation of the TB multidisciplinary workforce to reach TB-affected households with the greatest need. As England progresses towards the goal of TB elimination, such prioritisation could enhance the efficiency of constrained TB prevention resources.[11]

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Conflicts of interest: none declared.

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RÉSUMÉ

OBJECTIF : Etudier l'association entre les facteurs de risque sociaux et les risques d'infection tuberculeuse et de maladie chez leurs contacts en Angleterre.

SCHÉMA : Ceci a été une étude de cohorte de tous les cas de tuberculose (TB) du Nord-Ouest de l'Angleterre diagnostiqués entre le 27 mars 2012 et le 28 juin 2016. Les données ont été recueillies à partir du système national amélioré de surveillance de la TB (ETS) et de la revue de la cohorte du North West TB, au cours de laquelle les facteurs de risque sociaux des cas de TB sont évalués afin d'estimer leurs besoins de prise en charge améliorée des cas (ECM), d'ECM-0 (norme de soins) à ECM-3 (soutien social intensif).

RÉSULTATS : Un total des 2139 cas et leurs 10 019 contacts ont répondu aux critères d'éligibilité. Etre un contact d'un patient avec une TB à frottis positif, un ECM élevé, ou être d'origine ethnique noire des Caraïbes a été indépendamment associé à des risques plus élevés de TB active (frottis positif contre frottis négatif : OR 5,3 ; IC95% 3,2–8,7 ; ECM-3 contre ECM-0 : OR 2,2 ; IC95% 1,01–5,0 ; ethnie noir des Caraïbes contre blanche : OR 7,4 ; IC95% 2,1-25). Etre un contact d'un patient atteint de TB à frottis positif ou d'origine noire des Caraïbes a également été indépendamment associé à des risques plus élevés d'infection TB (frottis positif contre frottis négatif : OR 5,3 ; IC95% 3,8–7,3 ; et noir des Caraïbes contre blanc : OR 6,7 ; IC95% 2,0–25).

CONCLUSION : La complexité sociale et ethnique des patients a été associée à l'infection TB et à la TB maladie parmi leurs contacts.

RESUMEN

OBJETIVO: Investigar la asociación entre los determinantes sociales de los pacientes y el riesgo de sus contactos de contraer la infección tuberculosa y la enfermedad activa en Inglaterra.

MÉTODO: Fue este un estudio de cohortes de todos los casos de tuberculosis (TB) de la Región del Noroeste de la Inglaterra diagnosticados del 27 de marzo del 2012 al 28 de junio del 2016. Se obtuvieron datos a partir del sistema nacional de vigilancia reforzada de la TB (ETS) y del examen de la cohorte de TB de la Región del Noroeste, durante el cual se evaluaron los factores de riesgo sociales de los casos de TB, con el fin de estimar las necesidades para la iniciativa de reforzar la gestión de casos (ECM), desde el nivel ECM 0 (normas asistenciales corrientes) hasta el nivel ECM 3 (apoyo social intensivo).

RESULTADOS: Cumplieron los criterios de selección 2139 casos y sus 10 019 contactos. Los factores asociados de manera independiente con una mayor probabilidad de padecer TB activa fueron el hecho de ser contacto de un paciente tuberculoso con baciloscopia positiva (baciloscopia positiva contra baciloscopia negativa: OR 5,3; IC95% 3,2–8,7); asignado a un ECM de alto nivel (ECM 3 contra ECM 0: OR 2,2; IC95% 1,01–5,0); o perteneciente a la etnia afrocaribeña (afrocaribeña contra blanca: OR 7,4; IC95% 2,1–25). Se asociaron con una mayor probabilidad de contraer la infección tuberculosa el hecho de ser contacto de un paciente tuberculoso con baciloscopia positiva (baciloscopia positiva contra baciloscopia negativa: OR 5,3; IC95% 3,8–7,3); o de origen afrocaribeño (etnia afrocaribeña contra blanca: OR 6,7; IC95% 2,0–25).

CONCLUSIONES: La complejidad de la situación social de los pacientes y su etnia se asociaron con la aparición de infección tuberculosa y enfermedad activa en sus contactos.