Is screening for tuberculosis acceptable to immigrants? 
A qualitative study

P. Brewin¹, A. Jones², M. Kelly³, M. McDonald⁴, E. Beasley⁴, P. Sturdy⁵, G. Bothamley¹, C. Griffiths⁵

¹Department of Respiratory Medicine, Homerton University Hospital, Homerton Row, London E9 6SR, UK
²Communicable Disease Surveillance Centre, Health Protection Agency, 61 Colindale Avenue, London NW9 5EQ, UK
³Centre for Human Sciences and Medical Ethics, Queen Mary, University of London, London E1 2AT, UK
⁴Lower Clapton Health Centre, Hackney, London E5 OPD, UK
⁵Centre for Health Sciences, 2 Newark Street, London E1 2AT, UK
Address correspondence to Chris Griffiths, E-mail: c.j.grifiths@qmul.ac.uk

ABSTRACT

Background Screening of immigrants has been a widespread response to the global resurgence of tuberculosis but has been criticized as discriminatory and stigmatising. Acceptability is an essential but neglected ethical prerequisite of screening programmes, particularly those targeting vulnerable groups such as refugees. No data exist concerning acceptability of tuberculosis screening. We therefore examined the responses of immigrants to screening for tuberculosis in a range of settings.

Methods We carried out a qualitative interview study of a maximum diversity sample of 53 immigrants offered screening for tuberculosis in east London. We recruited people screened in three settings: a social service centre for asylum seekers, a hospital clinic for new entrants and primary care. We confirmed validity of our findings at a focus group of asylum seekers.

Results The opportunity to be screened for tuberculosis was valued highly by recipients. Moreover, many saw being screened as a socially responsible activity. Of the minority raising concerns, few mentioned the possibility of discrimination. Acceptability was high irrespective of setting, with respondents expressing preference for their chosen place of screening.

Conclusion Screening for tuberculosis was highly acceptable to recipients in these settings. Screening should be offered in a range of settings.

Keywords public health, screening, tuberculosis

Introduction

One-third of the world’s population is infected with Mycobacterium tuberculosis, and an estimated 2 million people die from tuberculosis each year, largely in the developing world.¹ Migration,²,³ drug resistance⁴ and HIV infection⁵ have contributed to the re-emergence of tuberculosis as a major public health problem in Europe and North America.⁶,⁷ Numbers of international migrants have more than doubled in the last 35 years to 175 million; one in every 35 people is an international migrant.⁸

Screening immigrants for tuberculosis is controversial, generating considerable media, political and public health interest.⁹–¹¹ Compulsory screening is a common policy.¹² Screening is widespread in Europe, North America and Australia¹³ and is a prominent recommendation in guidelines,¹⁴–¹⁶ but has been criticized as being ineffective,¹²,¹⁶–¹⁸ poor value,¹⁹ discriminatory, stigmatising,²⁰ racist and divisive.²¹ In the UK, tuberculosis screening is currently voluntary and takes place in port health units, hospital new entrant clinics, social services centres and primary care. Uptake of screening in hospital new entrant clinics is poor, with only one in five invited attending.²²

The debate on the role of tuberculosis screening of immigrants is poorly informed by data.²³ Limited randomized trial data are available on the effectiveness of screening immigrants,²⁴ with only observational and theoretical modelling...
studies guiding policy. Acceptability to recipients is universally acknowledged as an ethical prerequisite for any screening programme, the more so for programmes which may be compulsory and which target potentially vulnerable groups. Screening of immigrants for tuberculosis has been carried out for at least 50 years; yet, the views of recipients about acceptability remain unknown.

We addressed this omission by carrying out a qualitative interview study. Our aims were (i) to determine the acceptability of tuberculosis screening in immigrants attending for screening in different settings and (ii) to explore recipients’ understanding of the disease and its relation to uptake of screening.

We considered ‘acceptability’ in this context to mean that the concept of being screened and the process, including the setting and procedure, were considered beneficial and tolerable by recipients. The setting for our study was east London, an area with an incidence of tuberculosis of 100/100 000 population, the highest in the UK.

Methods

Participants, settings and screening procedures

We carried out semi-structured interviews with 53 adult immigrants who had been offered screening for tuberculosis as part of voluntary programmes in three settings in east London: (i) a social services centre, providing benefits and advice for asylum seekers (n = 24), (ii) a hospital clinic, screening new entrants (i.e. entry within 3 years) to the UK (n = 15) and (iii) a primary health care centre, screening people registering (n = 14, all born outside UK, eight of whom were new entrants).

The social services centre used posters and leaflets to advertise that screening would be offered to asylum seekers attending for benefits and advice. The primary care centre offered screening to all new patients during their registration health check. The hospital clinic sent written invitations for screening by post to addresses given by new entrants identified by port health teams at recent entry to the UK. All three programmes had been in place for at least 2 years. Uptake of screening was almost universal in the social service centre and primary care but was poor in the hospital new entrants clinic. Screening in each setting followed a modified national protocol consisting of verbal screening proceeding to tuberculin testing if appropriate. We sought a purposive maximum diversity sample to reflect the wide range of countries of origin of people targeted for screening (Table 1).

Interviews

Researchers (P.B., A.J. and M.K.) directly approached people offered screening in each setting. Few (less than one in five) of those approached declined interviews. Interviews were conducted in private rooms after obtaining written consent. Interviewers introduced themselves as researchers and not as clinicians. All interviews were recorded and transcribed verbatim. We carried out 44 interviews in English, where fluency was adequate (English was a commonly used language in many of the participants’ countries of origin), and nine with the assistance of translation either from a professional advocate, family member or friend. Fluency and any need for a translator were assessed informally by the researcher when introducing the study to respondents. Interviews were piloted and guided by a topic guide covering reason for attendance, knowledge of tuberculosis, attitudes towards screening, screening environment and accessibility. We stopped recruiting when
we achieved data saturation, that is no new information emerged from new interviews. Broadly speaking, those attending the hospital had entered the UK within the last 6 months, whereas those visiting primary care and the social services centre had been in the UK for longer periods.

Analysis
A multidisciplinary team (anthropology, specialist nursing, primary care nursing, social science, public health medicine and academic primary care) met frequently during and after the interviewing phase to analyse data. We used a constant comparison approach, comparing new transcripts with existing data to guide diversity of our sampling and the interview content and process. We analysed data using the framework method, involving five key stages: familiarization, identifying a thematic framework, indexing, charting, mapping and interpretation. We agreed a coding framework following initial reading and discussion of transcripts. We specifically looked for dissonant cases: informants who gave views contrary to the majority. Two researchers (P.B. and A.J.) independently coded transcripts and resolved discrepancies. We systematically tabulated data under seven themes to facilitate comparison and interpretation: attitudes to screening, perception of risk, rationale for screening, process and setting, experience of health care and explanatory models of tuberculosis. We used MAXqda software to handle data.

To assess validity, we presented our analysis at a focus group comprising a users group of four patients (three females, one male, all of African origin and mean age 42 years) who met monthly at a primary health care centre for refugees and asylum seekers. We also presented study findings as vignettes to stimulate discussion.

Approval was given by the local research ethics committee. The funding sources had no involvement in the design, analysis or presentation of results.

Results

Acceptability of screening
The overwhelming majority of informants welcomed screening and felt reassured by the process. This was expressed as a sense of security or relief, particularly after a negative screening result. Others saw screening as a ‘privilege’ and ‘a good idea’. Being screened was seen as a socially responsible activity, reducing the chances of tuberculosis becoming a problem for the host country. Some felt that the wider settled population should also have access to screening. Others, interviewed with their families, felt that screening should be particularly promoted for children (Table 2).

Because uptake of screening was almost universal at the social services and primary health care centres, and those attending the hospital new entrants clinic had already accepted a postal invitation to attend for screening, we identified only four people who had declined screening during the study. Even these four were not averse to screening per se: two thought it unnecessary, because they had been vaccinated with bacillus calmette-guérin (BCG) or screened with tuberculin in their own countries, and two preferred to be screened by their general practitioners. Of the latter, one had multiple health problems and thought tuberculin testing

Table 2 Positive views of acceptability of screening for tuberculosis

<table>
<thead>
<tr>
<th>Good for people being screened</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘I was looking forward to get the results to know I am okay and happy because it allow me to be sure I am not suffering from this disease’</td>
</tr>
<tr>
<td>30-year-old black African male, primary care setting</td>
</tr>
<tr>
<td>‘I would never have actually thought of going so I thought it was a good idea’</td>
</tr>
<tr>
<td>32-year-old Kenyan female, social services setting</td>
</tr>
<tr>
<td>Good for public health in the host country</td>
</tr>
<tr>
<td>‘Actually it is a good idea because if you do it, you know you have it then you can cure it. If you don’t cure it you can carry on giving it to other people and then that is another problem to the country’</td>
</tr>
<tr>
<td>26-year-old Ghanaian male, hospital setting</td>
</tr>
<tr>
<td>Good for settled and migrant populations</td>
</tr>
<tr>
<td>‘But it is a good idea actually, good for everybody not just Algerian people. You should test everyone not just the foreign people’</td>
</tr>
<tr>
<td>35-year-old Algerian male, social services setting</td>
</tr>
<tr>
<td>‘I think every people should have this, because you never know’</td>
</tr>
<tr>
<td>30-year-old black African male, primary care setting</td>
</tr>
<tr>
<td>Good for children</td>
</tr>
<tr>
<td>‘Is better they should do for the children, the test tuberculosis’</td>
</tr>
<tr>
<td>28-year-old Polish female, social services setting</td>
</tr>
</tbody>
</table>
might adversely affect his health and the other felt ‘singled out’ at the social services and felt that the general population should also get the protection of screening, not just asylum seekers (Table 3).

Only two informants commented that they were selected for screening, because they were immigrants (one accepted, commenting that everyone should be screened, the other declined); both understood the invitation to reflect the high incidence of tuberculosis in their country of origin (Tables 3 and 4). None raised the possibility of a diagnosis of tuberculosis compromising an asylum application.

Although informants were positive about the purpose of screening, few expressed anxieties about the process of screening itself (Table 4). These comments reflected insufficient explanation by screening staff. For one woman, screening raised anxieties about the lack of public health information.

### Table 3 Reasons for declining screening

<table>
<thead>
<tr>
<th>Reason for declining screening</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belief that BCG vaccination provided complete protection</td>
<td>‘Oh I didn’t want it because when I was in my country they gave me already the vaccination’</td>
</tr>
<tr>
<td>32-year-old female from Burundi, social services setting</td>
<td></td>
</tr>
<tr>
<td>Previous screening</td>
<td>‘He said it is good to have the test but he has already had a test in Poland so he doesn’t really need it’</td>
</tr>
<tr>
<td>23-year-old Polish male via interpreter, social services setting</td>
<td></td>
</tr>
<tr>
<td>Desire for health care to be provided by own general practitioner</td>
<td>‘I think an injection [Heaf test] is bad for my kidneys. It is better at the GP. I go to my GP if I have problems’… ‘I think it [screening] is good but it is not 100%; it is good for those that worry’</td>
</tr>
<tr>
<td>35-year-old Algerian male, social services setting</td>
<td></td>
</tr>
<tr>
<td>Being singled out</td>
<td>‘I think all of us [should be screened], they should start with the kids, we don’t mind having it…[but] I am scared of it, it is like they are calling us, they are pushing us, we are being singled out’</td>
</tr>
<tr>
<td>26-year-old African female, social services setting</td>
<td></td>
</tr>
</tbody>
</table>

### Screening setting

Informants were positive about the setting in which they had been seen, but not all settings were acceptable to all participants, suggesting that limiting the service to a single setting would reduce uptake. Primary care was ‘easy’, ‘local’ and appropriate, because screening was seen as less serious than treating the disease itself, which would be a matter of concern for the hospital. Some saw the general practice (GP) surgery as ‘safer and cleaner’, and another commented that they felt safer at the GP ‘because you are familiar with him and the way [the surgery] works’.

The hospital was a good place to screen, because it was ‘better equipped, with everything’ with ‘very specialized’ staff. One respondent was more confident about being screened in hospital, because it was safer—in GP ‘anything could happen’ and there is ‘only the doctor and they don’t really know nothing’. Another pointed out that ‘they have to transfer you’ so going direct to the specialist was better.

### Table 4 Anxieties about the process of screening

<table>
<thead>
<tr>
<th>Anxieties about the process of screening</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety about a positive Heaf test</td>
<td>‘She was anxious as it was her first time of having it. She said I haven’t got it have I? Why was it [a grade 3 Heaf reaction] itching so much?’</td>
</tr>
<tr>
<td>19-year-old Turkish female, primary care setting via translator</td>
<td></td>
</tr>
<tr>
<td>Lack of explanation by screening nurse</td>
<td>‘She didn’t know quite what was going on so she was worried. She thought something serious was happening but when the nurse explained what was happening, she calmed down’</td>
</tr>
<tr>
<td>35-year-old Polish female, social services setting via translator</td>
<td></td>
</tr>
<tr>
<td>Lack of prior information</td>
<td>‘She only say me I have to take my blood pressure and my urine from me, she haven’t mentioned the tuberculosis test but when I came and she saw perhaps I am a black person, or something like that. I am not saying she is racist or something like that, I don’t say that, but I think it is because I am African’</td>
</tr>
<tr>
<td>[interviewer: are there people who should or shouldn’t be screened?]</td>
<td></td>
</tr>
<tr>
<td>‘I think every people should have this, because you never know’</td>
<td></td>
</tr>
<tr>
<td>30-year-old black African male, primary care setting (accepted screening)</td>
<td></td>
</tr>
</tbody>
</table>
Social services were ‘easy and quick’, because benefits (such as food vouchers) and screening were under one roof, and unlike the GP and hospital, there were no queues. One man saw the benefits people were receiving at the centre as a useful way of increasing uptake of screening for a condition he thought people knew little about. Two were clear that they would not attend other settings: ‘if you have to go to the GP for screening, we don’t go’. A woman said she had no time to attend the hospital because of childcare responsibilities.

**Lay understandings of tuberculosis and their relationship to uptake of screening**

Explanatory models of tuberculosis held by our informants generally reflected notions about germs and infection. Most understood tuberculosis to be a disease affecting the chest; several identified it as one of a number of ‘killer’ diseases. Although many were unsure, most considered tuberculosis an infection that could affect the lungs. Understanding of transmission varied enormously. Ways of contracting tuberculosis included smoking cigarettes and hemp, touching people, sharing plates, glasses or cigarettes, mothers putting moistened food from their own mouths into their children’s mouths, coughing, sexual contact (when tuberculosis developed from gonorrhoea), generally neglecting your health and not washing fruits and vegetables (Table 5). Risk was raised at two levels, in relation to populations and individuals. Some population groups, such as the homeless or those in prison, were perceived to be at particular risk. Immunization was frequently cited as a preventive measure. Some informants were unclear about the distinction between BCG immunization and tuberculin testing; this may have been a factor in the decisions of the small number of those who declined screening. Most viewed tuberculosis as being treatable with long courses of medicine or injections.

Although several had heard that there were many cases in east London—either from word of mouth or from local newspapers—many highlighted the lack of information and education available in the media when compared with their country of origin and stated that their knowledge of the disease was based on what they had learnt from personal experience before entering the UK (Table 6).

Responses of the participants at the focus group confirmed our interpretation of screening procedures in the three settings as being acceptable. Some commented that

---

**Table 5 Lay understandings of tuberculosis**

<table>
<thead>
<tr>
<th>Lay understandings of tuberculosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Yes, I know it is one of the six killer diseases and you can be vaccinated against it’</td>
</tr>
<tr>
<td>25-year-old West African male, primary care setting</td>
</tr>
<tr>
<td>‘Tuberculosis is like, I don’t know, normally attacks like an infection, growing in your lungs. Actually I don’t know exactly what causes the tuberculosis, or exactly how it works but what I know a bit is most people who have tuberculosis they cough blood maybe’</td>
</tr>
<tr>
<td>26-year-old Ghanaian female, hospital setting</td>
</tr>
<tr>
<td>‘We know about tuberculosis, it is to do with a black spot on your lungs, we do know about that.’</td>
</tr>
<tr>
<td>21-year-old Indian female, hospital setting</td>
</tr>
<tr>
<td>Ways of contracting tuberculosis</td>
</tr>
<tr>
<td>‘I think you can get tuberculosis from the skin. You can have it on the skin and you can transmit it, transmission to other people’</td>
</tr>
<tr>
<td>30-year-old African male, primary care setting</td>
</tr>
<tr>
<td>‘It comes from touching foods’</td>
</tr>
<tr>
<td>30-year-old Polish Male, social services setting</td>
</tr>
<tr>
<td>‘But back home my mum said it is a dangerous sickness because when you have the other sickness gonorrhoea, if you don’t look about it soon it turns out to be tuberculosis, it leads up to that sickness’</td>
</tr>
<tr>
<td>Jamaican female, primary care setting</td>
</tr>
<tr>
<td>‘You can catch it everywhere – in open air, in contact with infected person, I don’t know if you share plates, glasses as well’</td>
</tr>
<tr>
<td>37-year-old Lithuanian female, Social Services setting</td>
</tr>
<tr>
<td>‘No, I don’t know what it affects but I know you get it through smoking and sharing with someone who has it, if they cough and you share a cigarette or something, you can get it that way. I know it is to do with the lungs or something, that’s about all’</td>
</tr>
<tr>
<td>24-year-old African male, hospital setting</td>
</tr>
<tr>
<td>‘It is a hygienic thing, if you are dirty and don’t care about your health you will get not only tuberculosis but other things as well, that’s all I can say’</td>
</tr>
<tr>
<td>21-year-old Indian male, hospital setting</td>
</tr>
<tr>
<td>‘For example, like from my own point of view I think smoking causes tuberculosis, people who smoke Indian hemp or smoke cigarettes, people can get it from that’</td>
</tr>
<tr>
<td>21-year-old Nigerian male, hospital setting</td>
</tr>
</tbody>
</table>
recipients might interpret screening that involved venesec-
tion as covert testing for HIV infection.

Discussion

Main finding of this study
We found acceptability of screening for tuberculosis to be
high amongst this diverse sample of immigrants offered vol-
untary screening in three different settings in east London.
Even the few respondents who declined screening thought it
a rational policy. This reflected high levels of awareness or
personal experience of tuberculosis, particularly in people
who were from countries of high tuberculosis incidence.
Screening was acceptable in each of the three settings:
respondents identified the advantages of tuberculosis screen-
ing in the location where they were approached and also rea-
sons for not being screened in other settings.

The widespread understanding among our respondents of
tuberculosis as a serious but preventable and treatable condi-
tion contributed to attendance for screening. The view that
screening was unfairly targeted at immigrants was rare, even
though we sought this in interviews.

What is already known on this topic
Our findings are novel. We could not identify any reports on
acceptability of screening for tuberculosis.

What this study adds
Our findings make four contributions to the debate about
tuberculosis screening.

First, our data provide some reassurance that screening in
these settings is viewed positively by recipients. Caution
should be exercised in generalizing qualitative data. How-
ever, we recruited a diverse sample of respondents from a
range of settings, and it seems reasonable to expect that the
views of our sample might reflect those of other immigrants
to the UK. We did not sample people being screened at port
of entry; acceptability may differ in this setting.

Second, our data reinforce the importance of ensuring
screening is as acceptable as possible to recipients. Resolving
anxieties about the process and safety of screening by
improving communication and information may increase
acceptability further in few attenders. Improving the accepta-
bility of any screening programme is not only a moral aim,
but it may improve uptake and hence the cost-effectiveness
of the screening.

Third, although people were generally happy with the set-
ing in which they were screened, all settings were not accept-
able to all recipients, suggesting that screening should be
offered in a range of settings to maximize uptake.

Fourth, our data underline the need for and potential of
more information for the general public about tuberculosis.
Ideas about transmission of tuberculosis were highly varied,
often superficial, and sometimes erroneous. It was striking
that most informants had learned what they knew of tuber-
culosis from personal experience or public health campaigns
in their countries of origin rather than in the UK.

Limitations of this study
Screening in our study was voluntary. Acceptability may dif-
fer if screening were compulsory. Further work should
address this.

We recruited few participants who had declined screening.
Although this reflected excellent uptake in the primary care
and social services settings, we can make limited judgements
on why people do not attend.

Qualitative methods are viewed by some as lacking rigour.
We ensured the reliability of our findings in many ways: (i) we
reviewed our sample of respondents as the study progressed
to ensure we achieved the sample of maximum diversity with
respect to age and country of origin, (ii) we constantly compared new with existing interview data, (iii) data were coded by two researchers who compared and resolved discrepancies and (iv) analysis was carried out by a multidisciplinary group. We used qualitative software to improve handling and sharing of data. Validity of our findings is supported by triangulation: we found similar views both across the three recruitment settings and in our feedback to a focus group of immigrants. We sought to understand dissonant cases, such as the few who expressed concerns about screening. Furthermore, our findings on acceptability are consistent with the excellent uptake of screening in convenient settings of primary care and social services.

**Summary**

Even in the absence of good evidence of effectiveness, screening immigrants is likely to continue, partly for political reasons, as part of national tuberculosis control policies.

Our data suggest that acceptability of tuberculosis screening in these settings is high among immigrants in the UK and that screening should be offered in a range of settings.

**Acknowledgements**

We thank all the respondents and staff who took part or assisted with this work, in particular Angela Burnett and Miriam Beeks. Funding was from ELENoR (East London Network of Researchers), NELCRAD (North East London Consortium for Research and Development) and the North East London TB Network.

**Contributors**

C.G. had the original idea for the study. The design was elaborated by all the authors. Interviews were carried out by P.B., A.J. and M.K. A.J. and P.B. wrote the first draft that was commented on by all authors. C.G. is the guarantor.

**References**


