Reviewer's report

Title: Tuberculosis Contact Tracing: effectiveness of community health workers in a city with massive recent immigration

Version: 2 Date: 21 October 2011

Reviewer: Graham H Bothamley

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This paper examines whether community health workers have improved the uptake of contact tracing in immigrants. The historical comparison is inevitable and the data indicate that if there were any bias, this would be in the opposite direction of the hypothesis (there were more immigrants and therefore contact tracing should have been more difficult in the more recent time period). The conclusion is therefore valid.

Major compulsory revisions

The abstract could be improved. The background should note that immigration of those from countries with a high to a low incidence of tuberculosis is being considered. I would not abbreviate contact tracing (here and throughout), as the term CT interrupts the flow of the text. Rather than use “hospital B” I would use a more descriptive term e.g. “a hospital without a TB service” or similar.

The definition of effective contact tracing should be reconsidered. Some individuals do not have any contacts, and this is especially true of the homeless and those with mental illness. Others may have a large number of contacts but only some of these can be traced. The reason behind using 70% is presumably that of the WHO target for the diagnosis of TB. This should then be applied to the percentage of contacts who could be traced.

The number of community health workers employed should be given, with an estimate of their case load. This permits extrapolation of this study to other cities.

The services provided by the different hospitals should be described in such a way as to be able to understand why hospitals B and D performed less well compared to the other hospitals.

The second paragraph of the discussion needs to be rewritten for clarity. Language skills may be more important than cultural barriers and access to health care can be limited by both and the health care services themselves. To mention “unknown residence” in the same context as HIV infection is confusing. Without an address it is unsurprising that contact tracing could not be performed – although a comment on the actions of the community health workers in contacting individuals outside the usual context of a residence might be helpful if this occurred.
The tables should be clarified. The p-values for the age geographical area of origin differences need to be explained in the text (did the age or origin of immigrants change, so the p-value relates to the denominator and not the intervention? Both Table 1 and Table 3). The title of Table 2 needs to be changed to demonstrate that a comparison of the two periods is being made, otherwise the use of odds ratios for "yes/no" options does not make sense. The significant values in Table 3 require comment - were more individuals in one time period HIV+, with a history of prison? Table 3 should add "Type of TB of index case".

Minor compulsory revisions
The title could be more helpful to the reader, e.g. Community health workers improve contact tracing in immigrants in Barcelona.

The second sentence of the background should begin “The incidence of TB….”.

In the third sentence of the background, the term “South-Eastern Asia” is problematic for readers to relate this to the immigrants who were from India and Pakistan, rather than from China.

The figure of percentage increase in immigrants in paragraph 2 must be wrong, unless the population of Spain has fallen from 166 million to 46.7 million.

Third paragraph, 1st sentence: “…on TB in Barcelona”.

Third paragraph, 2nd sentence: “Barcelona TB Control Program”

The sentence “However CT was under 50% among immigrants” is difficult to understand and the third paragraph of the Background should be rewritten.

Results paragraph 1: “Almost half lived in an inner city, socioeconomically-deprived district”.

The text needs to make clear that failure to trace contacts was associated with an index who had culture-negative or extra-pulmonary tuberculosis or had a normal chest x-ray (last paragraph of results).

Discussion – 2nd paragraph: “normal CXR”

4th paragraph – has “significantly affected the epidemiology of TB” “..even to those who had no right of residence”

Paragraph 6 – who were “from a different culture” ; “agents” for “actors”

Discussion, penultimate paragraph. The sentence “We believe that these differences didn’t affect the results”. This needs to be explained as above, noting that the increase in immigration should have worsened the coverage of contact tracing, so emphasizing that the improvement was real.

Conclusion. “approached in a familiar way” This sentence needs to be revised for clarity.
Use English in the figures.

Discretionary revisions
Delete “notably to become a highly relevant socio-demographic phenomenon” in paragraph 2 of the background.

Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests