Author's response to reviews

Title: Tuberculosis case finding based on symptom screening among immigrants, refugees and asylum seekers in Rome

Authors:

Monica Sañé Schepisi (monica.saneschepisi@inmi.it)
Gina Gualano (gualano@inmi.it)
Claudia Fellus (CLAUDIAFELLUS@ALCE.IT)
Nazario Bevilacqua (bevilacqua@inmi.it)
Marco Vecchi (mv7110@gmail.com)
Pierluca Piselli (pierluca.piselli@inmi.it)
Giuliana Battagin (batgin@yahoo.com)
Giulia Silvestrini (silvestrinigiulia@gmail.com)
Andrea Attanasio (andreattanasio@hotmail.com)
Alberto Vela (A.Vela@aslromah.it)
Giorgia Rocca (giorgia_rocca@hotmail.com)
Alessandro Rinaldi (a.rinaldi28@virgilio.it)
Pietro Benedetti (pbenedetti74@gmail.com)
Salvatore Geraci (s.geraci@areasanitaria.it)
Francesco N Lauria (lauria@inmi.it)
Enrico Girardi (enrico.girardi@inmi.it)

Version: 3 Date: 1 August 2013

Author's response to reviews: see over
Dear Editor,

Thanks for your email regarding our manuscript entitled: “Tuberculosis case finding based on symptom screening among immigrants, refugees and asylum seekers in Rome” (MS: 8696677968937012)

We did appreciate the reviewers’ comments and we modified the manuscript accordingly as detailed below.

We hope you will find this revised version suitable for publication in BMC Public Health

With best regards
Enrico Girardi, MD

Reviewer 1

- In general this is a real life project that could have been repeated other places and this makes it interesting. But to get a better understanding about how the project was performed, some more information on certain topics is needed.

We thank the reviewer for this comment

Major Compulsory Revisions:

- 1: Why did you choose verbal screening? Could you mention some more previous research (more than one), also make some references on why exactly these questions were asked. (See also line 82-83)
As suggested we mentioned in the introduction previous studies on the use of symptom screening for TB case finding and we provided justification for choosing these 5 symptoms

**Introduction, lines 53-57:** “Moreover there is evidence that eliciting the presence of the main tuberculosis symptoms (fever of more than one week duration, cough of more than two weeks duration, night sweating, weight loss and haemoptysis) may represent a simple and sensitive method for screening of active TB although this approach may have a low specificity.(8,9)”

**Methods, lines 86-87:** “These symptoms were chosen because previous studies had shown that the presence of any of them provided good sensitivity in active tuberculosis screening programmes. (9)”

- **2:** Line 86: individuals--were referred; but how much information did they get, did they have to pay for costs, have a free ride to the clinic, --. Please give a more extensive explanation how this was done.

We provided more information in the methods section

**Methods, lines 91-94:** “They were given instructions verbally and in writing on when and how to reach the tuberculosis clinic and they were informed that all examinations were free of charge; no support such as free transportation or monetary incentives was provided.”

- **3:** Line 100-101: printed leaflets in 11 languages: were these leaflets read to the patients or did they read the leaflets themselves?
- **4:** Were the interviews read to them by translators in each (11 different) language?

We addressed these two issues by providing information on how (and in which language) information on the study was provided and the interview was conducted in the Methods section

**Methods, lines 108-111:** “The leaflets were handed to all participating individuals. Further information about the study was provided by cultural mediators, that also performed the interviews, in the patient’s own language for 8 (Romanian, Bulgarian, Hindi, Amharic, Tigrinya, Farsi, Dari, Arabic) languages. Otherwise Italian, French or English were used as vehicular languages.”
- **5:** In methods line 75: “all individuals were considered for inclusion”, but in results line—117 “We enrolled 2142” - but how many were considered for inclusion altogether?

As suggested, we provided in the results section the overall number of eligible individuals cared for in the participating centers during the study period

**Results, lines 127:** “During the study period 3350 individuals were seen at the three primary care centres. Among them, 2142 (63.9%) persons completed the interview and were enrolled in the study.”

- **6:** Line 165: what was done to find those patients that did not appear for further examinations? This is a crucial step in this kind of screening. Discuss what could be done-

- **7:** Line 177 “additional strategies are needed” additional to what? What has been done already to stimulate the patients to do further examinations?

We provided information on what was done and discussed what else could be done to increase the rate of completion of screening in the Discussion section

**Discussion, lines 197-200.** “To try to increase completion of screening the tuberculosis clinic staff tried to contact directly by phone individuals which did not show up for diagnostic evaluation and provided information of non attendance to the participating centres who could in turn reinforce the invitation to adhere to their clinic appointment. These data suggest that additional strategies are needed to increase the effectiveness of this intervention. These may include being interviewed by a health care worker in the same native language (17), active involvement of peers (18,19), brief educational programmes (20,21,22) and the provision of small monetary incentives that have proven effective in favouring the acceptance of tuberculosis screening in other population groups. (23,24)”

**Minor essential revision**
- 8: Line 208: do you think repeated symptom screening could work as health education for a susceptible population, thus increase awareness of TB symptoms and increase the likeliness of patients seeking care for TB?

We agree that repeated screening may increase awareness of symptoms and we commented on this issue in the Discussion section

Discussion, lines 234-236: “It can be also hypothesised that repeated screening may increase awareness of tuberculosis symptoms and the likelihood of seeking care for tuberculosis among those developing tuberculosis related symptoms.”

Discretionary revision

- 9: Line 195: “that a rule based on the presence of at least-” add “of”

We corrected as suggested

- 10: Line 92: no sputum: did everybody have and induced sputum or bronchoscopy or was this up to the physician?

The decision about further investigations, that were performed only in some patients who could not provide a sputum sample was up to the physician. This was clarified in the Methods section

Methods, line 98: “and further investigations were performed in selected cases if deemed necessary by the attending physician to confirm or rule out the diagnosis of tuberculosis.”
Reviewer 2

- The manuscript was well written, and the findings may be important on identifying TB cases in some migrant populations.

Thanks for this kind comment

Major Compulsory Revisions:

- 1) The authors divided the study population into two groups: 1) persons with "at least one symptom suggestive of active TB, and 2) persons with "no symptoms". When the authors presented the results of TB cases diagnosed by the symptom screening, they combined the results of these two groups. What was the reason for doing so? If the authors wanted to evaluate the effectiveness of symptom screening, the 5 referred persons from the "No symptoms" group should not be included.

As suggested by the reviewer, we did not combine the data about the two groups in the revised manuscript, and we focused the attention on the group of patients referred because of the presence of protocol defined symptoms.

To this end we modified figure 1, which now contains data only on the flow of patients with symptoms, and the figures in the abstract and in the results section.

- 2) There was 45% of referred persons with at least one symptom of suggestive of active TB did not attend diagnostic evaluation. The low participation rate might cause bias on the results of the analysis, especially with a small number of people attended diagnostic evaluation. Did the authors compared some factors (e.g., age, gender, birth country, year of stay in Italy, etc) between those who attended the diagnostic evaluation and those who did not attended the diagnostic evaluation?

We agree that this analysis is potentially relevant and we reported it in the results section and in Table 2.
Results, lines 152-156: “We compared some factors (e.g., age, gender, birth country, length of stay in Italy) between those who attended the diagnostic evaluation and those who did not attend it. In multivariable analysis (table 2), the probability of non attending tuberculosis clinic for diagnostic evaluation among symptomatic patients was higher in younger individuals and in irregular migrants or asylum seekers compared to regular migrants, and it also varied for patients seen in different primary care centres.”

Discretionary Revisions

1) Before the foreign-born persons participated this study, did any of them undergo TB screening?

Unfortunately, the information on previous tuberculosis screening was not collected with the questionnaire.

2) The length of time spent in Italy is important in this analysis. Can the authors provide more detailed information (e.g., the percent or number of persons spent <=1 year, 2-5 year, >=6 years in Italy; page 7, line 123)?

This information is now reported in the results section.
Results, lines 134-135: 47.2% of the subjects had spent in Italy less than 2 years; 33% 2–5 years and 19.8% 6 years or more.

3) The number of symptoms might improve the diagnosis of TB. Can the authors analyze the data by using the number of symptoms (e.g, 1 symptom and >=2 symptoms).

We thank the reviewer for this suggestion. We performed this analysis and indeed we found that a diagnoses of tuberculosis was more frequent among those reporting more than 2 symptoms. This analysis is now reported in the results section.
Results, lines 160-161: “Among patients who completed diagnostic evaluation tuberculosis was diagnosed in 1/55 (1.8%) reporting 1 or 2 symptoms and in 6/41 (14.6%) of those reporting 3 to 5 symptoms (p=0.04 by Fisher exact test)”

- 4) From the table, 68.4% of persons in the study population were from countries with a TB incidence >=100 cases per 100 population per year. It would be helpful if the authors also put these results into the Results section on page 7.

This information has been included in the results

Results, lines 132-133: “More than 60% came from countries with a tuberculosis incidence of 100 per 100,000 or higher”

- 5) What were the "other symptoms" for referring the 10 persons from "No symptoms" group to TB diagnostic evaluation?

This information has been added to the results section

Results, lines 147-150: “Among the 1888 individuals not reporting protocol-defined tuberculosis symptoms, 10 were referred for diagnostic evaluation: 6 of them were contacts of a tuberculosis case, 1 had a previous diagnosis of tuberculosis, 1 had a cervical lymphnode enlargement, 1 had fever lasting less than 7 days and 1 had chest pain.”