Reviewer's report

Title: The role of entry screening in case finding of tuberculosis among asylum seekers in Norway

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Reviewer: Connie Erkens

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The paper “The role of entry screening in case finding of tuberculosis among asylum seekers in Norway” is a second paper reporting results of a study to assess the effectiveness of tuberculosis entry screening of asylum seekers in Norway. The first paper “Tuberculosis screening and follow-up of asylum seekers in Norway: a cohort study” by the same first author [BMC Public Health. 2009; 9: 141], focused on the yield of the entry screening, a description of the asylum seekers screened and the extent to which national recommendations for prevention of tuberculosis among asylum seekers had been implemented at different health care levels in Norway. The conclusion of this study was that TB screening of asylum seekers identified a prevalence of 1% of active tuberculosis in the study group included for follow-up and identified inadequate handling of screening results at all levels of care, with too few patients treated for latent tuberculosis. This second paper describes the number and proportion of persons identified with active tuberculosis either through screening or thereafter, and describes characteristics of the patients in terms of demographics and results of initial screening. The added value of the present study to the first has not been described clearly by the authors. Although the background and method section is a repetition of the first paper, only little reference is made to the first study. In particular the relation to and the distinction with the first paper are not described.

The study aimed to ‘assess the effectiveness of tuberculosis entry screening’ through a description of all cases of tuberculosis and differences between those detected by screening and those detected later. However, the authors do not clarify how the proportion of cases detected through screening and characteristics of the TB patients as presented in this study can be regarded as outcome measures for effectiveness of screening. Thus, in my view, the study question for this paper is not clearly stated.

Cases reported within 2 months after arrival were defined as ‘detected by screening’. This is mentioned as a limitation of the study in the discussion, and possible misclassification of the cases may have led to over- as well as underestimation. However, it seems in many cases the soundness of the data is questionable, since the authors state they ‘could not trace any information about referrals for these patients’. Persons identified with abnormal X-rays / positive TST on initial screening and identified with active TB during follow-up evaluation could also be attributed to the yield of screening, if the follow up is part of the official policy for persons identified to be ‘at risk’ at initial screening, which was
certainly the case in one case where referral was delayed for 10 months, and may be for 3 out of 4 cases with an abnormal X-ray on arrival for who follow up was advised.

Although it was stated that one case was found through contact investigation, it seems to exclude the possibility of any cases occurring through transmission within Norway. Although other studies have shown that the level of transmission in Norway is extremely low, this should be mentioned in the discussion.

The premise in the discussion on the effectiveness of the screening is that all 28 TB cases should have been detected or prevented by the program through detection of active TB or preventive therapy of latent tuberculosis.

In the study [25] cited, only 1% of eligible asylum seekers received effective preventive treatment in the study population, possibly due to organizational problems in follow-up of screening results and of clinicians to follow national guidelines on preventive treatment. As such, the occurrence of TB during the follow up period in persons with latent tuberculosis on arrival can be attributed to the ‘effectiveness’ of the entry screening program. However, the constraints and the feasibility of the screening program in Norway are not questioned in the discussion, as they may have been in the previous publications.

Major points

Background
Page 5, 2d paragraph “Annual reports….Register”.
It would be appropriate to mention the proportion of annual TB incidence in Norway caused by TB among asylum seekers, how much caused by TB on entry and how much in later years.

Page 5, 2d paragraph “A Norwegian….PHC”
The author reports findings of two studies, but does not state the conclusion of these studies, presumably that the proportion of detected cases through screening is low because of inadequate follow-up and non-adherence to national policies? How does the present study contribute to further evidence about the (limited) effectiveness of the entry screening?

Page 14 ‘In spite …A NUMBER…..pulmonary TB’.
This is very neutral stated and can hardly be regarded as a conclusion. The authors’ opinion on the meaning of this number (regardless cost effectiveness) would be interesting to learn: is this limited / considerable? Do the authors conclude entry screening is a useful tool for TB control in Norway or not? Or what do they need to know more to reach a conclusion?

Page 11
The summary of most important results to the study question is rather limited. Merely stating the absolute number of cases detected through screening, does not reflect the meaning the author concludes from this finding. Such as:

• Is the proportion of cases detected through screening (54%!!!) or the
prevalence of 15/2293 (0.6%) more or less than expected from other studies?

- Given the definition of 'detected through screening', it is obvious that abnormal X-ray findings are likely to be the most important characteristic of TB patients detected through screening.

- Female gender is (univariately) associated with an increased risk. This is in contrast with the finding that TB incidence is usually higher in men. This finding is not further commented upon.

General comment:
The paper needs further editing and spelling checks.

Minor points

Page 6 Methods
For clarity inclusion criteria could be defined first, before data on the study group are reported. Why are children < 18 years excluded from the study population?

Page 8 Line 4 / last line
An X-ray is not ‘positive’ but ‘abnormal’ or ‘suspect’

Page 9 Results Line 2
What is the reference group?

Page 9 ‘The median time for diagnosis….’
Is the interval between entry into the country and diagnosis of first screening and diagnosis?

Page 9 ‘Twenty one….two’.
The numbers do not much the data displayed in table 5.

Page 10 ‘of 12 cases… Central TB clinic’.
It is unclear how this is relevant for the research question.

Page 11 ‘No other odds ratios…. one.’
This can be stated more simple.

Page 13 ‘This may obviously …impossible’
However, a calculation of the prevalence of all cases / culture positive cases / pulmonary culture positive cases is possible (15/2293 etc.)

Page 14 ‘As a consequence…verified’
How many cases with an abnormal X-ray were diagnosed with TB or developed to TB later? Is preventive treatment of persons with LTBI and ‘inactive’ fibrotic lesions recommended with higher priority than other LTBI cases?

Table 3
This is not a case control study: is it appropriate to call non-cases ‘control’? Would it not be better to define age group 35-49 as the reference category?

**TABLE 5**
For better clarity the number of missing values should also be indicated. Numbers age groups(18-34yrs / >35yrs n=22 / n=6) in table 5 do not comply with table 1 (n=21 / n=7).

**Level of interest:** An article of limited interest

**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