



Preventing and controlling tuberculosis among refugees in Europe: more is needed



To the Editor:

We read with interest the study by DE VRIES *et al.* [1] reporting on the results of tuberculosis screening among recently arrived migrants and refugees in the Netherlands.

This study brings several issues for debate in a moment where migration to Europe generates concerns and potential risks for stigmatisation and discrimination. In 2015, >1 million migrants and refugees reached Europe by different routes, more than four times more people than in 2014 (when there were only 219 000) [2, 3].

Migrants and refugees are among the most vulnerable groups for tuberculosis infection and disease, due to multiple reasons including their precarious living and travelling conditions. In addition, they are often coming from countries with higher tuberculosis incidence than the host countries [4–6]. In addition to being a human right, adequate management of tuberculosis and latent tuberculosis infection (LTBI) in migrants and refugees is important to optimise tuberculosis control and elimination strategies in Europe, as tuberculosis does not respect borders [4–6]. It is important to underline that the increasing number of arrivals makes it more and more difficult to implement adequate tuberculosis screening and treatment strategies in centres hosting migrants/refugees or countries through which they are transiting.

A challenge in developing and adapting evidence-based screening policies is a lack of information on the exact number of migrants/refugees to be screened. Health authorities in the Netherlands decided, rationally, to evaluate the yield of screening for refugees coming from countries with an incidence <50 per 100 000 inhabitants to evaluate whether previous decisions had to be confirmed or modified. In the Dutch setting, the yield of screening proved to be rather low among Syrian refugees and other asylum seekers: the tuberculosis prevalence of screening in this population was 26 per 100 000 population, meaning that 3787 individuals need to be screened to identify one tuberculosis case. 12 cases of pulmonary tuberculosis were diagnosed (seven from Syria), four being sputum smear positive and the others culture positive.

In our opinion, two interesting pieces of information need to be discussed. 1) Four individuals with an originally negative chest radiography developed tuberculosis in the following 6 months. The information on their LTBI status was not reported [1]. If tuberculosis elimination has to be reached, we probably need to become more “aggressive” in our prevention approach, focusing on LTBI diagnosis and treatment [5–7]. Although some refugees originate from relatively low tuberculosis incidence countries, they may have been infected during their joint travel and accommodation with refugees coming from high tuberculosis incidence countries. LTBI may turn into disease after arriving in the host countries. 2) The importance of ensuring universal access to tuberculosis services is confirmed by the self-reporting of a tuberculosis case after screening discontinuation [1].

The findings of this study show how important is, at the national level, to base decisions on evidence, to ensure proper surveillance, and to monitor/evaluate quality data on migrants and refugees. There is a need for improved surveillance and cross-border data exchange for those refugees moving from one country to another.

However, the findings of this study cannot be automatically extended to other settings, as the profile of refugees reaching northern Europe may differ from that observed in other European countries.

The recently approved tuberculosis elimination framework [5], which includes eight areas for action, calls for more efforts by national programmes to target LTBI as well as tuberculosis disease, within the framework of an integrated European effort to coordinate policies and share best practices.

More evidence is needed on the screening policies in Europe, as little is known and from only a few countries [8–10].

Most of the evidence (table 1) results from a systematic review of the screening policies performed in the European Union [9]. Overall, the coverage of screening practices was higher in asylum seekers (94%) than in other migrants (47.8%), with a median yield of 0.30% and 0.176%, respectively. In Switzerland [10], the yield of screening based on routine chest radiography (14.3 per 10 000) was only slightly higher than that achieved with individual assessment (12.4 per 10 000), based on an integrated scoring system capturing different criteria including the tuberculosis prevalence in the country of origin, personal and family tuberculosis history, and symptoms/general conditions as assessed by the interviewing nurse.

TABLE 1 Screening practices and yield of screening in selected European countries

| Country | Screening location | Subjects tested n | Screening coverage % | Screening yield median | [Ref.] |
|-----------------|--|-------------------|------------------------------------|---|--------|
| Belgium | Holding centre, port of arrival | 15 735 | 57 | 0.40% | [9] |
| Denmark | Port of arrival, occasional screening | 1936 | | 0.72% | [9] |
| France | Occasional screening | 1360 | | 1.72% | [9] |
| Germany | Holding centre | 4058 | 93.9 | 0.25% | [9] |
| Greece | Holding centre | 1872 | 92.3 | 0.0% | [9] |
| Ireland | Port of arrival, occasional screening | 909 | 96.0 | 1.27% | [9] |
| Italy | Occasional screening | 977 | 92.2 | 2.34% | [9] |
| The Netherlands | Community post-arrival screening, holding centre | 49 652 | 95.0 | 0.30% | [9] |
| Norway | Holding centre | 203 147 | 89 | 0.11% | [9] |
| Spain | Occasional screening | 546 | 75.8 | 1.74% | [9] |
| Switzerland | Port of entry | 24 156 | 96.9 | 0.46% | [9] |
| | Holding centre | 45 709 | 84 [#] 85 [¶] | Prevalence of TB: radiology, 14.3 per 10 000 (31 out of 21 727); scoring system, 12.4 per 10 000 (29 out of 23 402) | [10] |
| UK | Port of entry, community post-arrival screening | 2273 | 55.5 | 0.23% | [9] |

TB: tuberculosis. [#]: 2004–2005; [¶]: 2007–2008.

The few studies available [8–10] show that different screening policies and practices are implemented in Europe, chest radiography being common in all countries within differently organised algorithms that include symptom evaluation, bacteriology and, in some countries, LTBI diagnosis *via* the tuberculin skin test and/or interferon- γ release assays.

While 22 (71%) countries recently reported screening for LTBI in high-risk groups (which include asylum seekers and migrants), only six countries (Greece, the Netherlands, Portugal, the Former Yugoslav Republic of Macedonia, Slovakia and Switzerland) were able to report LTBI treatment completion rates, which ranged between 40% and 88% [9].

Improved surveillance and further studies are needed to ensure that quality diagnosis and treatment for tuberculosis and LTBI (when feasible) are provided to all migrants and refugees in Europe.



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A coordinated effort is needed in Europe to ensure adequate diagnosis and treatment of tuberculosis among refugees <http://ow.ly/YEEXp>

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Preventing and controlling tuberculosis among refugees in Europe: more needed for high-risk populations



From the authors:

We thank M. Dara and colleagues for their commentary on our article “Low yield of screening asylum seekers from countries with a tuberculosis (TB) incidence of <50 per 100 000 population” [1]. We agree that the current high influx of refugees from both low- and high-incidence countries into countries that already have a TB incidence <10 per 100 000 population, *e.g.* many European Union member states, brings up a number of new challenges.

We agree with M. Dara and colleagues that profiles of migrating populations differ, as determined for example by country of origin or reasons for migration, such as study, employment, family reunification or war. In the Netherlands, screening processes differ for recently arrived migrants and refugees and the effectiveness of these interventions is evaluated separately. Results of chest radiography screening of (regular) migrants were previously analysed for the period 2005–2010 [2]. Overall, 108 TB cases were diagnosed among 117 389 screened migrants, resulting in a TB prevalence of 92 per 100 000 screened persons (95% CI 75–109). Only seven cases were identified by screening of 31 218 migrants from countries with a TB incidence of <50 per 100 000, resulting in a TB prevalence of 22 per 100 000 screened persons (95% CI 9–46) and a number needed to screen (NNS) of 4460. We would like to reiterate that the Netherlands uses a threshold of 2000 for NNS, in order to limit exposure of healthy individuals to radiation. The low yield among (regular) migrants from countries with a TB incidence of <50 per 100 000 led to the advice to the Ministry of Health to limit screening to migrants from countries with an estimated TB incidence of >50 per 100 000 population. This has been in effect since January 1, 2015. Our current evaluation of screening asylum seekers (January 2011–September 2015) from countries with a TB incidence of <50 per 100 000 had similar results, *i.e.* a TB prevalence of 26 per 100 000 screened persons (95% CI 14–45) and a NNS of 3787, and the same consideration led to the advice to the Ministry of Health to stop screening. We agree that our results cannot be automatically extrapolated to other countries and would be interested to read other countries' experiences. However, our results are not unexpected in asylum seekers from countries with traditionally a low TB incidence. Even if their circumstances dramatically change and they are staying in densely populated camps, there will initially still be few cases that transmit the disease.