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Poor follow-up after screening for tuberculosis

COMMENTARY

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The majority of cases of tuberculosis in Norway are diagnosed in individuals coming from high-incidence countries. Immigrants are widely screened, but the follow-up of positive cases is very inadequate. If the screening programme is to be continued, it should either be strengthened or considerably simplified.

In 2007, a total of 307 new cases of tuberculosis were reported in Norway. Foreign-born persons have accounted for a gradually increasing proportion, and they currently account for approximately 80 per cent of tuberculosis cases. New infections occur relatively rarely, and it is assumed that approximately 80 per cent of the cases observed in foreign-born persons are caused by reactivation of a previous infection (2). Many immigrants are diagnosed with tuberculosis several years after their arrival in this country (3).

Mass screenings of immigrants for tuberculosis are undertaken in varying degrees in different European countries, from none at all to an individual examination of everybody before or after arrival. The content of the various programmes and their effects are subject to an ongoing debate (4).

Previously, the Norwegian tuberculosis programme focused mainly on establishing an early diagnosis of active tuberculosis, monitoring those infected, and BCG vaccination. In 2002, a European workgroup assessed an action plan for the elimination of tuberculosis in low-incidence countries (5). One of the measures proposed by this group involved a strengthening of the preventive treatment for latent tuberculosis, with the objective of reducing the prevalence of the disease over time.

Laws and regulations

In 2003, new regulations and a handbook on tuberculosis came into force in Norway (6, 7). The handbook provides guidelines for the tests to be undertaken and at what level, but not where, when and by whom.

The mandatory screening of asylum seekers and immigrants from high-incidence countries was retained. At the same time, the authorities recommended wider use of preventive treatment.

The screening of all asylum seekers was previously undertaken at Tanum transit reception centre in Asker outside Oslo. Currently, the internationally applied Mantoux test is undertaken at three different reception centres in the Oslo region, and the x-ray examination at one centre. According to the handbook, everybody should take the Mantoux test, and additionally a chest x-ray should be taken of everyone over 15 years old.

If pathologies are detected by the chest x-ray examination or a suspicion of active tuberculosis is aroused in other ways, a further examination should be undertaken by a specialist. These examinations commonly take place in the TB Clinic of Oslo University Hospital Ullevål before the asylum seekers are allowed to settle in a local community. If active tuberculosis is detected, the infected patient has until recently been required to stay at Løren transit reception centre until the treatment was concluded.

All persons who have pathological x-ray findings or a strongly positive Mantoux test (≥ 15 mm) must be examined by a specialist. On the other hand, the handbook does not specify to whom preventive treatment should be provided. All those who have a Mantoux test from 6 to 14 mm should be examined by the municipal health services and referred for treatment according to specified

guidelines. From Tanum, the asylum seekers have been sent to a transit reception centre, to ordinary asylum reception centres or they have settled privately at their own initiative (Figure 1).

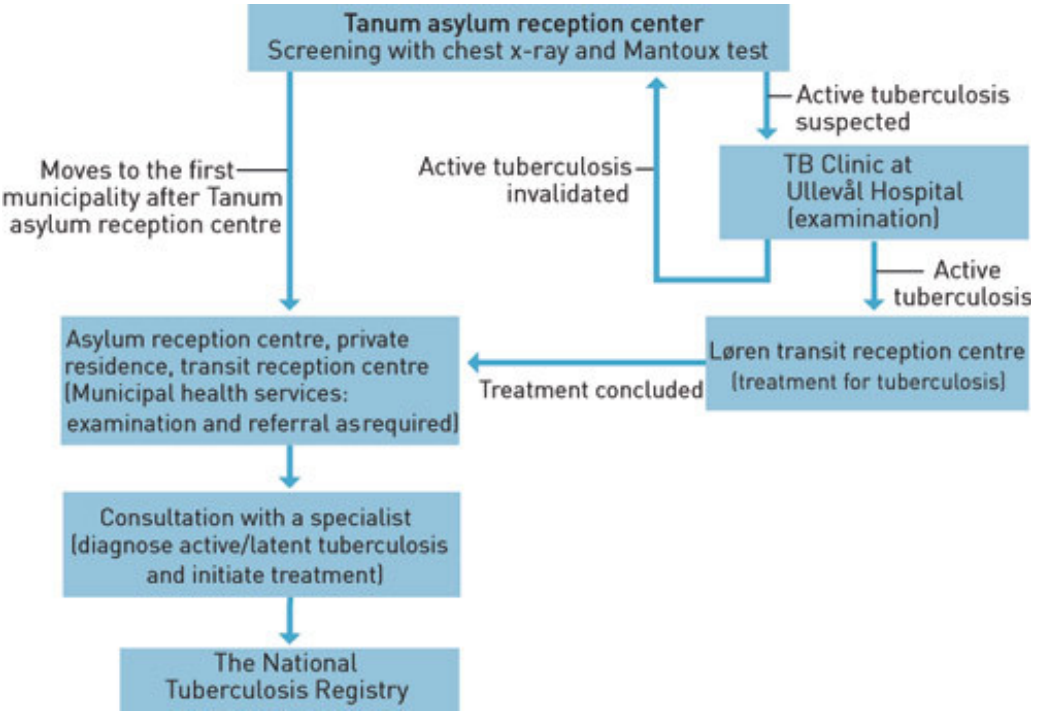

Figure 1: Screening of asylum seekers for tuberculosis. Represents the flow at the time of the study.

A previous Norwegian study showed that 32 per cent of the asylum seekers who had positive x-ray findings were not given any follow-up (8). Another Norwegian cohort study showed that 11 asylum seekers (14 per cent) who were later diagnosed with tuberculosis had positive x-ray findings upon arrival but had not been followed up (3).

Tuberculosis screening of asylum seekers in practice

We conducted a cohort study of asylum seekers aged 18 or older arriving at Tanum reception centre during the period from January 2005 to June 2006 (9) – (11). All those who were registered with an address in Norway and either had an enhanced Mantoux test or lung pathology detected by x-ray were included in the study. Supplementary information was collected from the local health services and specialists. This information was subsequently compared to data from the Tuberculosis Registry to determine how many had been diagnosed with tuberculosis or had started with their treatment for latent tuberculosis.

The study showed that 97.5 per cent of the asylum seekers had taken the Mantoux test. A total of 2 237 persons were included for follow-up. Of the 314 persons in whom lung pathologies had been detected, only 194 (62 per cent) had been examined by a specialist. Of 235 persons with pathology of the pulmonary parenchyma only 165 (70 per cent) had been examined. Of 568

persons who showed normal results from their chest x-rays but had a positive Mantoux test (≥ 15 mm), only 86 (16 per cent) had been examined by a specialist (9).

Of the entire group of 2 237 persons, altogether 758 had been examined by the municipal health services, and of 1 326 persons with normal chest x-ray but a positive Mantoux test (6 – 14 mm), a total of 372 (28 per cent) had been examined (9).

In the course of two months after arrival a total of 15 persons were reported to the Tuberculosis Registry with tuberculosis disease, while two more were reported over the subsequent four months. This cohort was observed until the end of May 2008. During this period, a further 11 were diagnosed with tuberculosis, all of whom had findings upon arrival that ought to have been followed up (11). In total, 30 persons had been provided with preventive treatment, which started after a median period of 17 months after their arrival (10).

Many municipalities had no or deficient systems for storing and communicating health information pertaining to asylum seekers. This was especially evident in many of the municipalities where asylum reception centres had been closed down during the period of the study.

Deficient follow-up of findings

The study showed that most asylum seekers were screened upon arrival, but that the follow-up of the findings was deficient. The organisation was very complex and fairly little known, and presupposed that many links in the chain were functioning before a final diagnosis could be made and treatment initiated. The most critical point was related to persons who had a positive x-ray result upon arrival, and who were not followed up. All those involved should have been examined at the TB Clinic at Ullevål Hospital before moving on. Alternatively, they should have been detected by the municipal health services and then referred to a specialist. There were no systems available that could allow for quality assurance of this process.

Follow-up at the municipal level was also very deficient, and there was no correlation between the degree of severity of the findings made during the screening and the degree of follow-up.

Screening for tuberculosis is mandatory. When even the mandatory examination procedures fail, one may wonder how other health problems among asylum seekers are taken care of. Storage, availability and communication of health information in the municipal health services turned out to be a major problem, and was an indication of the disregard for prevailing legislation and regulations.

Consequences of the shortcomings

What kind of consequences may this lack of follow-up of positive screening results have entailed? A number of those who were diagnosed with tuberculosis after more than six months should most likely have been diagnosed earlier. Alternatively, this could have been avoided with the aid of preventive treatment.

The consequence of this may have been several unnecessary infections, and those with TB disease may have developed sequelae because of delayed treatment. It is commonly assumed that each case of pulmonary tuberculosis infects ten others.

Furthermore, we may assume that several of those asylum seekers who had positive x-ray results but were not further examined may have left the country or suffered from other pulmonary diseases. For these reasons they did not add to the number of cases in Norway.

The programme should be revised

Our study has shown that the tuberculosis monitoring programme did not function as intended. After the publication of the results, the health authorities have revised and published a new programme (12). The revised plan focuses more on who should be provided with preventive treatment, and the number of patients whom the municipal health services should refer to a specialist has been reduced.

However, the programme does little to rectify the significant deficiencies that we pointed out in the previous programme. It is still assumed that the same number of actors will ensure that the results are followed up. No quality assurance of the follow-up of positive x-ray findings is foreseen, nor will there be any opportunity to record the outcome of the screening.

This group of patients has little ability to ensure that their rights are fulfilled, and neither can it be expected that they will request the results of the examination or ask for follow-up. This will tend to exacerbate the effects of the deficiencies with regard to follow-up. Is it appropriate to have mandatory screening for tuberculosis when so many patients with positive findings are not provided with any follow-up?

If the screening of asylum seekers for tuberculosis is to continue, the system must either be simplified or strengthened considerably. A quality assurance system and a possibility for evaluation must also be included in the programme.

This commentary is based on the main author's PhD thesis (1).

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