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Tuberculosis screening of Aussiedler at the Friedland border immigration centre, Germany

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The Friedland immigration centre in Niedersachsen (Lower Saxony) is the central primary immigration centre for Aussiedler. The term Aussiedler refers to ethnic Germans who live as ethnic minorities in the former Soviet Union, and to a lesser extent in eastern Europe. According to German law, Aussiedler have a right of immigration into Germany, providing their German ethnicity can be proven. On arrival in Germany, they are firstly admitted for a short period (usually 3-5 days) to the Friedland immigration centre before they are referred to their final residence.

The German *Infektionsschutzgesetz* (the Protection against Infection Act, *IfSG*, see http://rki.de/INFEKT/IFSG/IFSG_E.PDF) states that these people must present a medical certificate, before or on entry to the centre, to show that they do not have infectious tuberculosis. For Aussiedler over the age of 15 years, this certification must be based on a chest x ray, while pregnant women and those under the age of 15 are medically examined. The reason for this measure is the assumption and experience that people from the former Soviet Union have lived in an area where there is a higher prevalence and incidence of tuberculosis than in the general population in Germany.

According to the *IfSG*, occurrence of tuberculosis requiring treatment and/or verification of the causative agent has to be notified to the local public health authorities. In the case of the Friedland centre, health authorities in Göttingen are responsible. This report analyses data from cases in Aussiedler reported to Göttingen health authorities.

Methods

The Göttingen health authorities collect the notified tuberculosis cases using a case-administration software (SurvNet@RKI) The Göttingen health authorities do not always receive supplementary details of cases, such as drug resistance status, which may become apparent only when treatment begins. In a few cases, the patients' permanent address is already known at the time of notification, and the tuberculosis case can be directly notified to the health authorities of that region. Such cases were not considered in the following analysis.

Tuberculosis screening in Friedland is done by chest x ray examination. If infectious tuberculosis is suspected, patients are usually admitted as inpatients to local hospitals for confirmation, where further radiological, microbiological and clinical diagnostic tests are done and if necessary, antituberculosis therapy is started.

Results

A total of 73 080 Aussiedler were registered at the Friedland immigration centre in 2003. Of these, 56 179 (76.9%) were screened by x ray, and 16 901 were medically examined. As a result of screening, 416 (0.6%) people were referred for further testing on suspicion of having tuberculosis. These tests revealed 221 tuberculosis cases, which were notified to Göttingen health authorities and fulfilled the German reporting system's tuberculosis case definition.

Prevalence

Based on these 73 080 Aussiedler, the 221 notified cases represent a rate of 302 cases per 100 000 Aussiedler. As the start date of the illness is not known, it is more appropriate to think of 'continued existence' of tuberculosis illnesses in a particular year, and thus of a prevalence. Since there may be more cases of tuberculosis that are reported directly to the health authorities where the Aussiedler subsequently settle in Germany, the true prevalence may be underestimated. A comparable prevalence in the general population cannot be accurately estimated at present, although between 1995-2000, the prevalence in Niedersachsen was 20 per 100 000 inhabitants, and showed a decreasing trend.

Age and sex

The distribution of age and sex of the tuberculosis cases in Aussiedler in connection with the screening programme is as follows: about three quarters (76%) of those affected were men. Of these, 60% were under 50 years of age. Of the women affected, 48% were under 50 years. Age or sex specific prevalences could not be calculated from this data, since the age and sex distribution

of all the people examined was unknown.

Verification of causative agent
In all 221 cases, the respiratory tract (lung parenchyma, bronchio-trachea and larynx) was the main affected organ. The proportion of open pulmonary tuberculosis with confirmation from laboratory cultured *Mycobacterium tuberculosis* and/or a microscopic examination showing acid fast rods in the sputum smear, was 38.5% (85 out of 221).

Table 1. Results of tuberculosis testing in Aussiedler tuberculosis patients - Friedland immigration centre, 2003.

Verification method	Number of cases	%
Culture and microscopy positive	22	10.0
Culture verification only	50	22.6
Microscopic verification only	13	5.9
Culture and microscopic verification negative	131	59.2
Unknown result or no particulars	5	2.3
Total	**221**	**100**

Details of drug resistance to isoniazid (INH), rifampicin (RMP), pyrazinamide (PZA), ethambutol (EMB) and streptomycin (SM) were available for 25% of patients (55) (Table 2). Resistance was determined for 76% of the culture positive cases. Two of the EMB resistant isolates were intermediary.
Particularly notable was the high proportion (18.2%) of resistance against the two first-line drugs, INH and RMP. In comparison, the 2002 data for the whole of Germany show a drug resistance rate against INH and RMP of 2%, and patients born in Germany had a drug resistance rate of only 0.7%.

Table 2. Drug resistance rate to antituberculosis medication in Aussiedler tuberculosis patients - Friedland immigration centre, 2003 (n=55).

Medication	Resistant	%
Isoniazid (INH)	19	34.5
Rifampicin (RMP)	10	18.2
Pyrazinamide (PZA)	1	1.8
Ethambutol (EMB)	9	16.4
Streptomycin (SM)	17	30.9
INH + RMP	10	18.2
Any resistance	23	41.8

Previous illness of tuberculosis and previous antituberculosis treatment
In 90% of cases, details of tuberculosis pre-illness and previous antituberculosis treatment could be ascertained. About one third of the affected people reported a pre-illness, and most of these reported previous tuberculosis treatment. Details of the success of the previous treatment were only available for 9 people, 6 of whom reported an interruption in their previous tuberculosis treatment.

Discussion
In 2003, amongst the admitted 73 080 Aussiedler, there was a prevalence of 302 cases per 100 000 Aussiedler. In 25% of cases, details were reported of drug resistance. These show, in comparison to Germany-wide figures, a substantially higher proportion of drug resistant tuberculosis. The figures presented here support the particular need for an effective screening of this population at immigration centres. This health protection measure is contributing to tuberculosis control within the centre and also reduces further transmission in the German population. Lower Saxony spent approximately 1.6 million Euros on this screening programme in 2003.

Since further examinations are left to the federal region where the Aussiedler takes up residence, it remains to be determined how far these initially diagnosed cases stay within the surveillance system, and whether their identification through this screening actually leads to successful therapy.

This article was adapted and summarised from reference 1 by the authors.

References:

1. Feil F, Dreesman J. Tuberkulose-Screening bei Aussiedlern im Grenzdurchgangslage Friedland-Ergebnisse. *Epidemiologisches Bulletin* 19/03/2004 (http://www.rki.de/INFEKT/EPIBULL/2004/12_04.PDF)

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