EPI-NEWS **NATIONAL SURVEILLANCE OF COMMUNICABLE DISEASES**
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OUTBREAK OF TUBERCULOSIS

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Investigation of a case of tuberculosis (TB) in a young Danish national serviceman has so far revealed two further cases of TB. 14 of 37 persons examined at the barracks were Mantoux positive, which is unusual for Danish conditions.

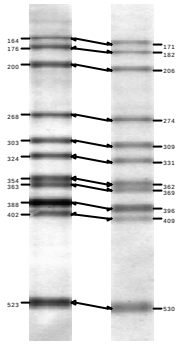
Tuberculosis in Næstved Barracks
In August 2000 open pulmonary TB was diagnosed in a national serviceman at the South Zealand military installations at Næstved. Initial diagnosis was by chest x-ray, followed by the observation of massive numbers of acid-fast bacilli on sputum microscopy. The patient had sought medical advice because he had been coughing for six months, latterly with green sputum, and was now unable to keep up with others on training runs. The patient belonged to a detachment of 38 persons between 19 and 25 years of age, divided into two equal squads that were quartered in dormitories of 10 bunk beds separated by 165 cm. In tracing the spread of infection the local Medical Officer of Health defined a group of close contacts to be investigated. This group included all members of the detachment plus two NCO's who had been in particularly close contact with the patient. The investigation protocol was designed in accordance with National Board of Health guidelines for family contacts. This involved Mantoux testing of a total of 37 of the 39 persons in the contact group, as two of these had been BCG vaccinated. Altogether 14 persons were Mantoux positive: 100% of those sharing the patient's 10-bunk dormitory and 40% of those in the adjacent dormitory, as well as 5% (one member) of the other squad. Subsequent chest x-ray showed that one person sharing the patient's dormitory had lung changes compatible with TB, and further investigation revealed that this person also had infectious TB. A parallel investigation of the index patient's family showed that a child just over 1 year old had also developed TB. Because of their massive exposure and close contact, all the Mantoux-positive persons were offered prophylactic treatment with isoniazid 300 mg daily and pyridoxine 50 mg x 1-2 daily for 6 months. Once the detachment had left, the dormitory was desinfected by washing all horizontal surfaces, bunks and cupboards with a chlorinated compound. Mattresses, curtains and cleaning rags were destroyed.

Comment
TB is still a serious disease. Although only a few hundred persons per year are infected by TB in Denmark , it is important to consider this diagnosis in patients with prolonged cough or unexplained tiredness.
(F. Juhl, Næstved Central Hosp.,
O. Mygind, MOH, Storstrøm County)

Blood test for tuberculosis
An immunological method for detecting TB infection is under development. It is based on a blood test for demonstrating the presence of circulating, antigen-specific T cells that arise as a result of the infection. These cells liberate the proinflammatory cytokine interferon-γ when stimulated in vitro by M. tuberculosis-specific antigens. In earlier trials the test has shown a specificity of over 95% and a sensitivity of about 75-80%. In future it may prove to be a useful supplement to present diagnostic methods. The test has several advantages, including independence of BCG vaccination status and exposure to non-pathogenic mycobacteria, and can also detect extrapulmonary TB and subclinical infections. In connection with the outbreak described above, all 39 members of the close contact group were asked to give a blood test, 21 of these consenting (six Mantoux positive, 13 negative, one with an uncertain reaction and one previously BCG vaccinated). There was a reaction to the specific antigens in specimens from six persons. The test method showed good general agreement with Mantoux testing. Further evaluation of the method is under way.
(I. Brock, P. Andersen, Dept. of TB Immunology)

DNA analysis in tuberculosis
During the last decade it has been possible to perform a DNA-based identification of TB isolates from individual patients. In this way it is possible to determine whether the bacterium that has infected patient A is identical to or different from that which has infected patient B. If the bacteria shows the same DNA restriction fragment length pattern, also called "DNA fingerprint", Fig. 1, the patients are usually members of the same chain of infection. On the other hand, if the fingerprints are different, it is most unlikely that the patients belong to the same chain of infection.

Fig. 1. Identical M. tuberculosis DNA pattern from patients A and B



By means of these DNA methods one can also assess whether patients who develop TB on successive occasions have been reinfected by a new bacterial strain or whether there has been a reactivation of the earlier infection. In the Næstved TB outbreak described, it was demonstrated that the two persons who developed TB at the barracks had been infected by bacteria of identical DNA pattern, Fig. 1. DNA analysis of the isolate from the one-year-old child has not yet been completed. In future it will be possible to determine whether other persons infected at the barracks develop TB of the same DNA pattern, even if this takes place after several years as a result of reactivation.
(T. Lillebæk, Å.B. Andersen, Int. Ref. Laboratory for Mycobacteriology)

INFLUENZA
In week 51 of 2000 an influenza A (H3N2)/Moscow-like strain was isolated from a clinical specimen. In week 52 an influenza A (H1N1)/ New Caledonia-like strain was isolated from a sentinel specimen. Both strains are included in this season's influenza vaccine and are in line with strains detected elsewhere in Europe.
(P.C. Grauballe, Dept. of Virology, S. Samuelsson, Dept. of Epidemiol.)

10 January 2001

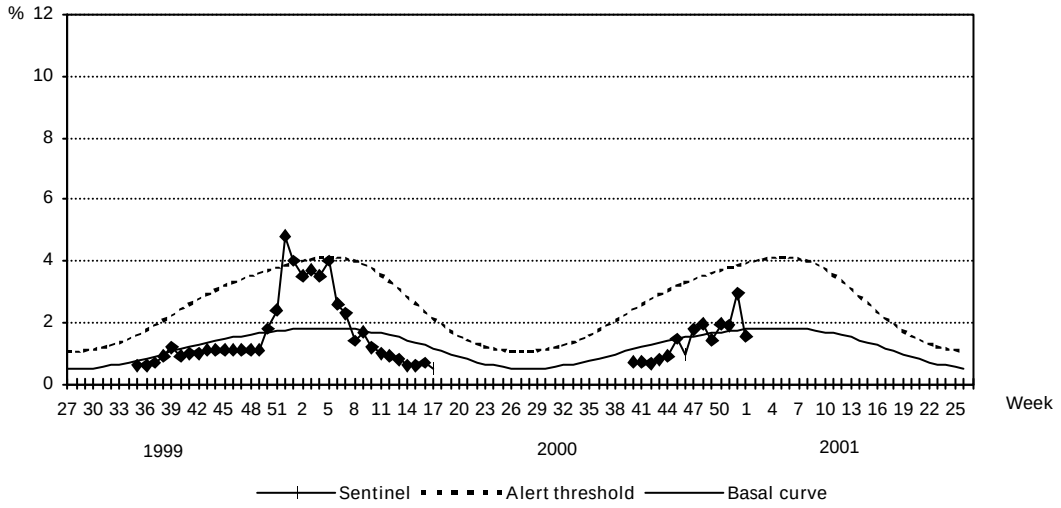
Patients with laboratory-diagnosed RSV or rotavirus infections, 2000

September		October		November	
RSV	Rota	RSV	Rota	RSV	Rota
0	7	4	5	13	10

Reported from the following Clinical Microbiology Departments:
Aalborg Hospital (South), Aarhus Municipal Hospital, Herning Central Hospital, Hvidovre Hospital, Odense University Hospital, Slagelse Central Hospital, Viborg Hospital, and from the Department of Virology, Statens Serum Institut.

Sentinel surveillance of influenza activity

Weekly percentage of consultations, 1999/2000/2001



Sentinel: Influenza consultations as % of total consultations
Basal curve: Expected frequency of influenza consultations under non-epidemic conditions
Alert threshold: Possible incipient epidemic

(Dept. of Epidemiology)