



## TUBERCULOSIS 2006, PART II

No. 50, 2007

### Transmission chains and outbreaks

In 2006 several previously detected Danish TB transmission chains persisted. By subtyping, a total of 23 cases nationwide were found to form part of the largest transmission chain in Denmark (DK), Danish Cluster 2. Six of the cases were located in Storstroems County, including three persons associated with a re-habilitation facility for drug abuse. Seven cluster 2 cases were found in the County of Copenhagen and three in the County of North Jutland.

In the County of Vejle, a previously detected outbreak amongst intravenous drug users in a drop-in centre continued, namely cluster 48, EPI-NEWS 49/06. Two additional cases in the County of Vejle, including a nurse with presumed occupational infection (see below) was found to belong to cluster 1. Furthermore, an outbreak among inmates/former prison inmates, EPI-NEWS 50/05, continued in 2006, producing a total of three new cases including two inmates and one inmate's partner.

(C. Kjelsø, Department of Epidemiology, Z. Kamper-Jørgensen, Mycobacteriology Laboratory)

### Occupational infection

In 2006 a total of five persons were notified with occupational infection. Four were current or previous health care employees: Two nurses, who had most likely been infected during work, and one nurse and a nurse assistant where occupational infection could not be excluded.

Furthermore, a person employed at the re-habilitation facility for drug abuse as described above, was notified with occupational infection.  
(C. Kjelsø, P.H. Andersen, Dept. of Epidemiology)

### TB in foreign au pairs working for Danish families

In 2006 a TB notification of four foreign au pairs was observed, including three cases of contagious pulmonary TB. Two of the notified persons were from the Philippines, one was from Indonesia and one originated from Romania.

Contact tracing revealed that one of the au pairs had infected three persons, of whom two were treated for active TB and one was given prophylactic treatment for latent infection. Contact tracing of the two other infectious au pairs revealed no further infected cases.

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### Microbiological diagnostics

In 2006, TB diagnosis was verified by culture in 299 of 377 (79%) notified cases, including 130 of 161 (81%) Danish cases and 169 of 216 (78%) immigrant cases.

Among a total of 274 notified cases of pulmonary TB ( $\pm$  other localisation), 224 (82%) cases were verified by culture, including 115 of 141 (82%) Danish cases and 109 of 133 (82%) immigrant cases. Among 115 Danes with culture verified pulmonary TB ( $\pm$  other localisation) and at least one sputum/tracheal secretion examination, 78 (68%) were smear positive and therefore regarded as contagious. Amongst immigrants, the proportion of contagious pulmonary TB cases were 53% (58 of 109 examined patients).

In 2006, a total of four cases of *Mycobacterium bovis* infection were detected. All cases occurred in Danes > 70 years of age, one male and three females.

### Drug resistance

Results of drug susceptibility testing (DST) were available for all 299 patients with culture-verified TB, 130 Danes and 169 immigrants. A total of 17 patients (6%) were resistant to one of the first-line drugs, rifampicin (R), isoniazid (H) or ethambutol (E); three Danes and 14 immigrants.

Amongst those with DST results, a total of 14 cases (5%) of isolated mono-drug resistance (H, R or E) were detected: 11 (4%) cases of H resistance and three (1%) cases of E resistance were found (for R resistance, see MDR TB).

In the re-treatment group (28 of 299 cases) 7.1% of cases had mono-drug resistance to H, R or E (two cases). Both cases were immigrants. The prevalence of mono-drug resistance was > 1.5 times higher in the TB re-treatment group than in the group of patients with newly diagnosed TB (4.4%, 12 of 271 cases, three Danes and nine immigrants). *Mycobacterium bovis* is innately resistant to pyrazinamid and consequently bovine TB cases are not reported in the drug resistance part.

### MDR TB

In 2006, three cases of multi-drug-resistant TB (MDR-TB) were detected, i.e. as a minimum resistance to rifampicin and isoniazid. All three were

newly diagnosed Somali cases. The assessment below is based on subtyping of the isolates.

One of the cases was a 17 year old Somali girl who had been infected by her older brother, who was previously notified with MDR TB in 2005. She was born and raised in DK and had not travelled since birth. This is the first documented case of MDR TB transmission in DK. The older brother was presumed to have been infected abroad, most likely in Somalia, as MDR TB was not found in other members of this particular Somali transmission chain.

The two remaining cases of MDR-TB were epidemiologically linked and transmission was believed to have occurred in a Syrian refugee camp. Presently, no cases of Extremely Drug Resistant TB (XDR-TB) have been detected in DK, EPI-NEWS 49/06.

(Z. Kamper-Jørgensen, Mycobacteriology Laboratory)

### Comments to parts I and II

Following a slow and constant decrease, the TB incidence reached approx. 300 cases per year by the end of the 1980s. Throughout the 1990s to 2000, the TB incidence again increased, peaking to approx. 550 cases per year, primarily due to increased immigration from the high incidence countries. Subsequently, the annual number of TB notifications has declined to 2006 and is currently at a level slightly above the level initially observed in the 1980s. The decline has primarily been due to a decrease in prevalence amongst immigrants.

Consequently, the proportion of Danes with TB has increased from 31% in 1999 to 43% in 2006, and the incidence amongst Danish males in the age 35-64 years is up to five times that of immigrant males in the corresponding age groups. The proportion of Danes with contagious pulmonary TB remains high. This suggests that the diagnosis is delayed, which contributes to the continued active transmission of TB. Health personnel remain at risk of becoming infected with TB. Au pairs comprise a newly acknowledged source of transmission.

DK still has a low proportion of MDR TB cases, in 2006 only 1% of all DST examined cases.

(Z. Kamper-Jørgensen, Mycobacteriology Laboratory, P.H. Andersen, Department of Epidemiology)

## Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2007 figures are preliminary)

Table 1	Week 49 2007	Cum. 2007 <sup>1)</sup>	Cum. 2006 <sup>1)</sup>
AIDS	1	45	44
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	8	19
Diphtheria	0	0	0
Food-borne diseases	13	600	544
of these, infected abroad	2	111	130
Gonorrhoea	3	337	406
Haemorrhagic fever	0	0	0
Hepatitis A	0	24	39
of these, infected abroad	0	10	20
Hepatitis B (acute)	0	28	19
Hepatitis B (chronic)	6	296	299
Hepatitis C (acute)	0	8	7
Hepatitis C (chronic)	9	556	431
HIV	2	297	229
Legionella pneumonia	0	116	123
of these, infected abroad	0	32	29
Leprosy	0	0	0
Leptospirosis	0	13	8
Measles	0	2	27
Meningococcal disease	0	62	80
of these, group B	0	35	40
of these, group C	0	19	19
of these, unspec. + other	0	8	21
Mumps	0	11	16
Neuroborreliosis	3	95	84
Ornithosis	1	10	11
Pertussis (children < 2 years)	0	75	49
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	2	4
Listeria monocytogenes	0	10	7
Streptococcus pneumoniae	1	94	81
Other aethiology	0	12	12
Unknown aethiology	0	13	18
Under registration	4	9	-
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	3	213	62
of these, infected abroad	1	49	52
Syphilis	0	98	66
Tetanus	1	3	2
Tuberculosis	7	379	361
Typhoid/paratyphoid fever	1	23	27
of these, infected abroad	1	22	25
Typhus exanthematicus	0	2	0
VTEC/HUS	2	151	138
of these, infected abroad	2	51	47

<sup>1)</sup> Cumulative number 2007 and in corresponding period 2006

## Selected laboratory diagnosed infections

Number of specimens, isolates, and/or notifications received in SSI laboratories

Table 2	Week 49 2007	Cum. 2007 <sup>2)</sup>	Cum. 2006 <sup>2)</sup>
Bordetella pertussis (all ages)	0	198	211
Gonococci	10	334	396
of these, females	1	57	69
of these, males	9	277	327
Listeria monocytogenes	0	52	53
Mycoplasma pneumoniae			
Resp. specimens <sup>3)</sup>	8	355	496
Serum specimens <sup>4)</sup>	7	399	397
Streptococci <sup>5)</sup>			
Group A streptococci	1	103	131
Group B streptococci	3	95	89
Group C streptococci	1	21	20
Group G streptococci	4	117	136
S. pneumoniae	35	987	889
Table 3	Week 47 2007	Cum. 2007 <sup>2)</sup>	Cum. 2006 <sup>2)</sup>
MRSA	14	619	-
Pathogenic int. bacteria <sup>6)</sup>			
Campylobacter	40	3747	2980
S. Enteritidis	5	533	539
S. Typhimurium	4	328	387
Other zoon. salmonella	13	671	659
Yersinia enterocolitica	8	260	192
Verocytotoxin-producing E. coli	1	147	139
Enteropathogenic E. coli	5	178	250
Enterotoxigenic E. coli	10	291	229

<sup>2)</sup> Cumulative number 2007 and in corresponding period 2006

<sup>3)</sup> Resp. specimens with positive PCR

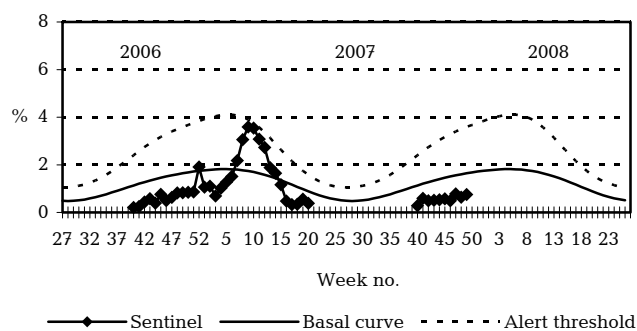
<sup>4)</sup> Serum specimens with pos. complement fixation test

<sup>5)</sup> Isolated in blood or spinal fluid

<sup>6)</sup> See also [www.germ.dk](http://www.germ.dk)

## Sentinel surveillance of the influenza activity

Weekly percentage of consultations, 2006/2007/2008



Sentinel: Influenza consultations (as percentage of total consultations)

Basal curve: Expected frequency of consultations under non-epidemic conditions

Alert threshold: Possible incipient epidemic

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