

## PURULENT MENINGITIS 2006

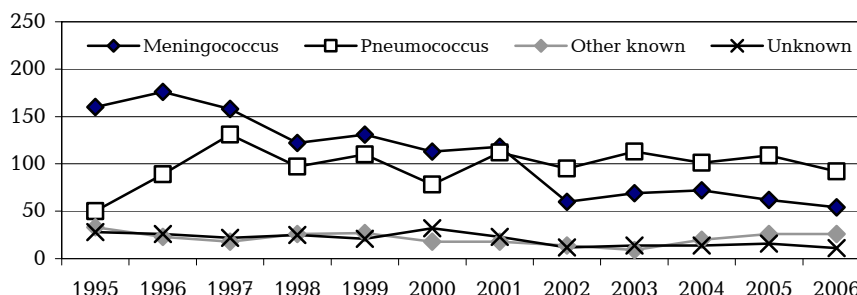
No. 45, 2007

2006 saw 183 notified cases of purulent meningitis. [Figure 1](#) and [Table 1](#) show distribution according to aetiology and age as well as age-specific incidence. The occurrence of meningococcal disease was previously discussed in EPI-NEWS 13/07.

### Pneumococcal meningitis

There were 92 notified cases of pneumococcal meningitis, 44 males and 48 females. A reminder was sent for 44 (48%) notifications. A total of 14 (15%) patients were children under the age of 18 months and 67% were older than 40 years. For 52 (57%) patients at least one predisposing factor was known: A total of 30 had otitis media or other infection in the ear-nose-throat region, ten had pneumonia, one had a dural defect, one had a congenital cranial fissure and one was infected with meningitis following perforation in connection with a sinus operation. Four patients had previously undergone splenectomy: three of these had been vaccinated one, two and three years previously, and in one case the vaccination status was unknown. During admission, ultrasound examination revealed that one patient was asplenic. Serotypes covered by the 23-valent pneumococcal polysaccharide vaccine were isolated from four of these five patients. One patient had myelomatosis, one had non Hodgkin's lymphoma, one chronic lymphocytic leukaemia and one was a chronic alcoholic. A total of 14 (15%) patients died in connection with the infection, all the diseased were more than 30 years old. Among the 78 survivors, 47 (60%) are known not to have sequelae, and the remaining 31 were distributed as follows: Eight suffered severe neurological damage, including two aged less than one year who had frontal infarction and hydrocephalus, respectively, and two one-year-olds with unilateral paralysis and epilep-

Figure 1. Notified cases of purulent meningitis, by aetiology, 1995-2006



sy, respectively. One middle-aged patient underwent several amputations. Two patients, both more than 60 years old, developed unilateral deafness and another six, all above 40 years of age, suffered hearing loss. An additional four had other minor sequelae and in ten cases sequelae were either not known or being assessed.

### Haemophilus influenzae meningitis

There were four notified cases of *H. influenzae* meningitis, including two type b (Hib). One of these patients was 49 years old and unvaccinated, another – a child aged 14 months – had not received the 12 month vaccination. The two remaining patients were 17 and 19 years old, respectively. In both cases the serotype was unknown. None of the four patients died. All children below the age of 14 years have been offered Hib vaccination as part of the Danish childhood vaccination programme.

### Listeria meningitis

Ten cases of meningitis caused by *Listeria monocytogenes* were notified. Nine of the patients were more than 60 years old; the younger patient had received immunosuppressive therapy due to myelomatosis. One of the elderly patients died.

### Streptococcal meningitis

Ten patients were notified with meningitis caused by haemolytic strepto-

cocci; six group B, two group A and two group G. The age of the meningitis B patients was zero days, in two cases four weeks (twins), seven weeks, 19 years and 79 years. One of these patients died. The two patients with group A meningitis were 41 and 78 years old; one died. The two patients with group G meningitis were 29 and 64 years old; one had a ventriculo-peritoneal shunt. Both survived the infection.

### Other and unknown aetiology

Two cases with other bacterial aetiology were notified, both had undergone a neurosurgical intervention and had become infected with *Klebsiella pneumoniae* and *K. oxytoca*, respectively. A total of 11 patients aged 0 to 89 years were notified with meningitis of unknown aetiology. The oldest patient died.

### Commentary

The number of notified meningitis cases was slightly lower than in 2005. The main reason is a decrease in the number of meningococcal and pneumococcal cases. 2006 saw an increase in the number of notified cases of listeria meningitis, all in elderly patients. To date, five listeria meningitis notifications with disease onset in 2007 have been received. (M. Howitz, P. Valentiner-Branth, Dept. of Epidemiology, L. Lambertsen, J.J. Christensen, DBMP)

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Table 1. Cases of purulent meningitis 2006 (2005), by aetiology, age, and incidence per 10<sup>5</sup>

Age (yrs)	Meningococcus	Pneumococcus	H. influenzae	Listeria	Streptococcus	Other	Unknown	Total	Incidence
0	4	10	0	0	4	0	3	21	32.6
1-5	12	8	1	0	0	1	1	23	7.0
6-10	6	2	0	0	0	0	1	9	2.6
11-15	6	2	0	0	0	0	0	8	2.3
16-20	12	0	2	0	1	0	0	15	4.9
21-30	2	2	0	0	1	0	1	6	0.9
31-40	0	6	0	0	0	0	2	8	1.0
41-50	2	10	1	1	1	0	1	16	2.1
51-60	5	12	0	0	0	0	0	17	2.3
61-70	1	16	0	4	1	1	1	24	4.3
71+	4	24	0	5	2	0	1	36	6.8
Total 2006	54	92	4	10	10	2	11	183	3.4
Total 2005	62	109	5	3	11	7	16	213	3.9

## Individually notifiable diseases

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

Table 1	Week 44 2007	Cum. 2007 <sup>1)</sup>	Cum. 2006 <sup>1)</sup>
AIDS	0	44	38
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	6	18
Diphtheria	0	0	0
Food-borne diseases	9	551	482
of these, infected abroad	2	104	121
Gonorrhoea	9	309	370
Haemorrhagic fever	0	0	0
Hepatitis A	1	21	35
of these, infected abroad	0	10	19
Hepatitis B (acute)	1	25	17
Hepatitis B (chronic)	2	280	274
Hepatitis C (acute)	0	6	7
Hepatitis C (chronic)	4	524	411
HIV	9	266	202
Legionella pneumonia	5	102	104
of these, infected abroad	0	25	28
Leprosy	0	0	0
Leptospirosis	0	13	8
Measles	0	3	27
Meningococcal disease	0	60	70
of these, group B	0	35	35
of these, group C	0	18	15
of these, unspec. + other	0	7	20
Mumps	1	7	16
Neuroborreliosis	2	85	66
Ornithosis	0	8	10
Pertussis (children < 2 years)	2	70	42
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	2	4
Listeria monocytogenes	0	10	7
Streptococcus pneumoniae	1	86	75
Other aethiology	0	12	11
Unknown aethiology	0	12	17
Under registration	0	7	-
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	8	202	54
of these, infected abroad	4	43	44
Syphilis	4	87	58
Tetanus	0	2	2
Tuberculosis	11	342	319
Typhoid/paratyphoid fever	1	19	25
of these, infected abroad	1	18	24
Typhus exanthematicus	0	2	0
VTEC/HUS	1	135	121
of these, infected abroad	0	45	43

<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 44 2007	Cum. 2007 <sup>2)</sup>	Cum. 2006 <sup>2)</sup>
Bordetella pertussis (all ages)	5	179	182
Gonococci	5	300	364
of these, females	0	46	65
of these, males	5	254	299
Listeria monocytogenes	1	50	44
Mycoplasma pneumoniae			
Resp. specimens <sup>3)</sup>	15	319	378
Serum specimens <sup>4)</sup>	7	366	315
Streptococci <sup>5)</sup>			
Group A streptococci	2	97	122
Group B streptococci	2	83	83
Group C streptococci	0	19	19
Group G streptococci	3	106	127
S. pneumoniae	23	869	807

Table 3	Week 42 2007	Cum. 2007 <sup>2)</sup>	Cum. 2006 <sup>2)</sup>
MRSA	27	517	-
Pathogenic int. bacteria <sup>6)</sup>			
Campylobacter	44	3324	2603
S. Enteritidis	8	465	500
S. Typhimurium	12	302	336
Other zoon. salmonella	4	594	596
Yersinia enterocolitica	4	221	157
Verocytotoxin-producing E. coli	2	136	123
Enteropathogenic E. coli	7	160	230
Enterotoxigenic E. coli	4	252	204

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

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

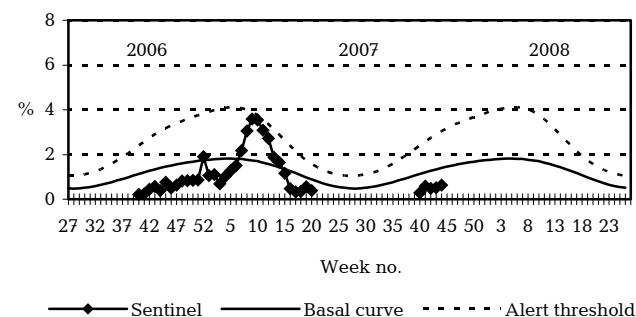
<sup>4)</sup> Serum specimens with pos. complement fixation test

<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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