

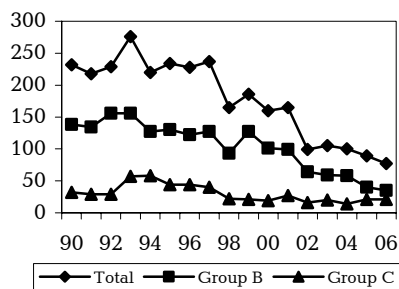


MENINGOCOCCAL DISEASE 2006

No. 13, 2007

In 2006 a total of 77 cases of meningococcal disease (MD) were notified, [Figure 1](#).

Figure 1. Notified cases of meningococcal disease, 1990-2006



In 26 (34%) cases, a reminder was sent for a written notification. Among the 77 patients, 14 had meningitis, 24 septicaemia and 38 both meningitis and septicaemia, while one patient had arthritis as clinical manifestation. Distribution by county and incidence is shown in [Table 1](#).

Table 1. Notified cases of meningococcal disease 2006, by county and incidence per 100,000. 2004 incidence in ()

County	No.	Incidence
Cph. Municip.	10	2.0 (1.4)
Frb. Municip.	2	2.2 -
Copenhagen	6	1.0 (2.1)
Frederiksborg	3	0.8 (1.9)
Roskilde	6	2.5 (1.3)
West Zealand	5	1.6 (1.3)
Storstroem	1	0.4 (1.5)
Bornholm	0	- -
Funen	5	1.0 (1.9)
South Jutland	2	0.8 (0.8)
Ribe	6	2.7 (2.7)
Vejle	3	0.8 (2.2)
Ringkoebing	6	2.2 (1.5)
Aarhus	10	1.5 (1.2)
Viborg	0	- (1.7)
North Jutland	11	2.2 (1.4)
Other	1	- -
Total	77	1.4 (1.6)

The incidence was highest among the youngest children, [Table 2](#).

Sequelae

A total of six (8%) of the patients died, [Table 2](#). All of these had septicaemia and meningitis as clinical manifestation. Three had serogroup C meningococci, while two had serogroup B and one group Y meningococci.

Twelve patients were reported to have experienced sequelae: Two suffered hearing impairment, two developed sixth-nerve palsy, in one case accompanied by facial nerve

Table 2. Patients notified with meningococcal disease in 2006, by age, serogroup, M/F ratio, incidence per 100,000 and number of deaths

Age (yrs)	B	C	W135	Y	Un-known	Total	M/F ratio	Incidence	Deaths
< 1	4	1	0	0	1	6	1.0	9.3	0
1-2	4	2	0	0	2	8	1.0	6.1	1
3-6	6	2	0	0	4	12	3.0	4.5	0
7-13	4	2	0	0	5	11	2.7	2.3	0
14-17	2	4	1	1	1	9	0.3	3.4	0
18-29	5	5	0	0	1	11	1.8	1.5	1
30-39	1	0	0	0	0	1	-	0.1	0
40+	9	5	3	1	1	19	0.9	0.7	4
Total	35	21	4	2	15	77	1.3	1.4	6

palsy, three developed skin necroses, which in one case led to a leg amputation, two suffered arthralgia, in one case following primary arthritis, two developed heightened sensitivity to loud sounds, one of these also to intense light. Casuistically, it may be mentioned that one adult experienced an eye sight improvement from minus six to nearly normal eye sight.

Diagnosis

In 59 (77%) cases, meningococci were detected by culture and in four cases by PCR only. The remaining 14 patients had clinical MD; nine of these had positive meningococcal antibody titre (MAT), three had positive spinal fluid microscopy, and in two cases, the diagnosis was exclusively clinical.

In 58 of the 59 culture-verified and four of the PCR-verified cases, serological grouping was performed at the SSI Neisseria and Streptococcus Reference Laboratory: 35 serogroup B, 21 C, four W135, and two Y. One group Y case had been imported from Germany and one group C case developed in a Danish student during a stay in France. The patient fell ill during the bus trip home and contact persons and passengers from the overnight bus who had been in close contact with the patient received antibiotic prophylaxis and subsequent prophylactic vaccination. No further MD cases ensued.

Clusters

One MD cluster was recorded: Two children attending the same kindergarten were admitted at a three-day interval, both with group B. The remaining children and childminders received antibiotic prophylaxis.

Commentary

MD surveillance in Denmark is carried out in collaboration with the clinical microbiology departments which forward positive *N. meningiti-*

dis samples to the Neisseria and Streptococcus Reference Laboratory at SSI and to the Department of Epidemiology, which receives disease notifications in connection with bacterial meningitis.

The number of MD cases has decreased steadily from 276 cases in 1993 to 77 cases in 2006. Over the last seven years, the annual number of serogroup B cases has decreased from 129 cases in 1999 to 35 cases in 2006, while the number of serogroup C, A W135 and Y cases have remained unchanged.

In a number of countries, serogroup B has proven to be the cause of a prolonged increase in MD occurrence. It is assumed that we are at the end of such a period, as the number of serogroup B cases stands at a 30-year low.

The number of serogroup C cases has remained constant over the last nine years. Six European countries have introduced serogroup C vaccination into national childhood vaccination programmes with good effect. An increased serogroup C incidence in these countries was the motivation for the introduction of the vaccination.

Serogroup Y is infrequent in Europe, but nearly a third of the MD cases in the US are caused by this serogroup. Serogroup A and W135 are rarely found in Europe, but these groups cause major annual MD epidemics in the tropics during the dry season, particularly in an area stretching from Senegal to Ethiopia ("the Meningitis Belt"), EPI-NEWS 23a+b/06. In 2006, the SSI Neisseria and Streptococcus Reference Laboratory added a real time PCR method to the existing diagnostic methods. The new method permits *N. meningitidis* and *S. pneumoniae* diagnosis several days after initiation of antibiotic treatment.

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Individually notifiable diseases

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

Table 1	Week 12 2007	Cum. 2007 ¹⁾	Cum. 2006 ¹⁾
AIDS	0	9	12
Creutzfeldt-Jakob	0	4	4
Food-borne diseases of these, infected abroad	7 0	126 19	94 24
Gonorrhoea	4	85	109
Hepatitis A of these, infected abroad	1 1	10 4	3 0
Hepatitis B (acute)	0	6	5
Hepatitis B (chronic)	5	60	132
Hepatitis C (acute)	0	2	1
Hepatitis C (chronic)	4	75	206
HIV	5	68	53
Legionella pneumonia of these, infected abroad	2 0	27 2	17 2
Leptospirosis	0	4	3
Meningococcal disease of these, group B of these, group C of these, unspec. + other	0 0 0 0	6 1 4 1	26 15 4 7
Mumps	0	3	8
Neuroborreliosis	1	22	12
Ornithosis	0	1	5
Pertussis (children < 2 yrs)	2	22	18
Purulent meningitis			
Haemophilus influenzae	0	0	1
Listeria monocytogenes	0	3	3
Streptococcus pneumoniae	0	14	21
Other aethiology	0	1	1
Unknown aethiology	0	0	8
Under registration	7	28	-
Shigellosis of these, infected abroad	1 0	12 5	18 16
Syphilis	3	26	18
Tetanus	0	0	0
Tuberculosis	6	85	81
Typhoid/paratyphoid fever of these, infected abroad	0 0	1 1	8 8
VTEC/HUS of these, infected abroad	3 0	41 11	28 9

Table 1, notes

In 2007, none of the following cases have been reported: Anthrax, botulism, cholera, diphtheria, haemorrhagic fever, leprosy, plague, polio, rabies, rubella, and typhus exanthematicus.

1) Cumulative no. 2007 and corresponding period 2006

Tables 2 & 3, notes

2) Cumulative no. 2007 and corresponding period 2006

3) Respiratory specimens with positive PCR

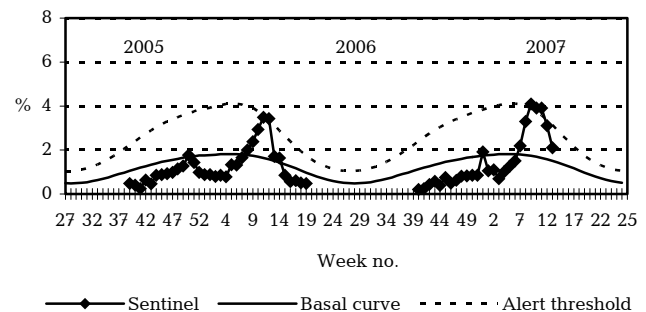
4) Serum specimens with pos. complement fixation test

5) Isolated in blood or spinal fluid

6) See also www.germ.dk

Sentinel surveillance of the influenza activity

Weekly percentage of consultations, 2005/2006/2007



Sentinel: Influenza consultations
(as percentage of total consultations)

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

Alert threshold: Possible incipient epidemic

Selected laboratory diagnosed infections

Number of specimens, isolates, and/or notifications received at Statens Serum Institut

Table 2	Week 12 2007	Cum. 2007 ²⁾	Cum. 2006 ²⁾
Bordetella pertussis (all ages)	2	37	71
Gonococci	10	83	97
of these, females	2	12	22
of these, males	8	71	75
Listeria monocytogenes	0	13	6
Mycoplasma pneumoniae			
Resp. specimens ³⁾	6	206	191
Serum specimens ⁴⁾	13	211	142
Streptococci ⁵⁾			
Group A streptococci	4	36	36
Group B streptococci	3	23	24
Group C streptococci	0	4	6
Group G streptococci	2	29	28
S. pneumoniae	31	341	341
Table 3	Week 10 2007	Cum. 2007 ²⁾	Cum. 2006 ²⁾
Pathogenic int. bacteria ⁶⁾			
Campylobacter	38	452	333
S. Enteritidis	6	47	59
S. Typhimurium	8	54	56
Other zoon. salmonella	7	110	96
Yersinia enterocolitica	6	55	32
Verocytotoxin-prod. E.coli	5	47	17
Enteropathogenic E. coli	2	38	43
Enterotoxigenic E. coli	1	28	39