

WHOOPING COUGH 1998 AND 1999

No. 40, 2000

Whooping cough is individually notifiable for children under 2 years when the child has clinical disease which has been laboratory-confirmed. In both 1998 and 1999, 63% of the notifications were only obtained after a reminder had been sent; despite this, notifications are still due for nine and 34 laboratory-diagnosed cases, respectively.

120 laboratory-diagnosed cases were notified in 1998, as against 186 in 1997. 177 laboratory-diagnosed cases were notified in 1999. In both years one patient known to have had contact with a confirmed case was notified; in addition, three purely clinical cases were notified. The present report therefore comprises a total of 124 cases notified in 1998 and 181 in 1999.

As shown in Table 1, the rise in the number of cases in 1999 affected all three age groups 0-5, 6-11 and 12-23 months. The incidence falls with increasing age in these groups and is about 10 times higher for children under 6 months than for children over 12 months. In 1998 the greatest frequency of whooping cough in children under 2 years was seen in the municipality of Copenhagen, Vejle and Aarhus; in 1999 in those of Ringkøbing, Viborg and West Zealand, as well as in the municipality of Frederiksberg.

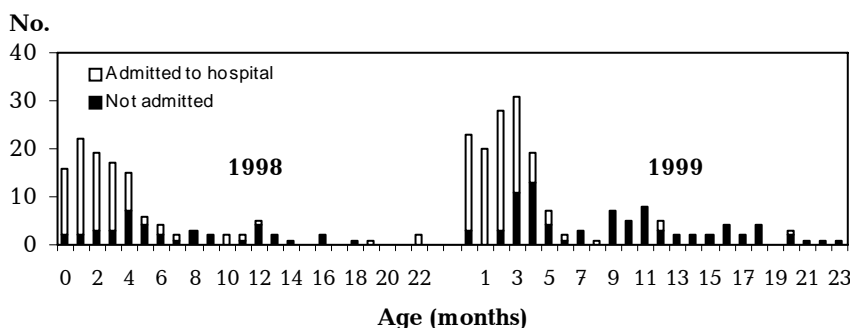
Effectiveness of vaccination

Acceptance of DiTeKiPol vaccinations 1, 2 and 3 can be calculated from the Danish National Health Service registration of vaccination forms. On this basis the incidence of whooping cough in unvaccinated and vaccinated children can be calculated. In these calculations it is assumed that children who have received no vaccination or only a single dose are unvaccinated, while children who have had two or three doses are vaccinated. As shown in Table 1, the incidence in unvaccinated children aged 6-23 months was over twice that in children under 6 months, who can nearly all be regarded as unvaccinated. One explanation for this could be that the older children usually have more contacts. Based on the difference in incidence of whooping cough between vaccinated and unvaccinated children, the effectiveness of vaccination can be

Table 1. Notified cases and incidence per 100,000 of whooping cough in children under 2 years, 1998 (124 cases) and 1999 (181 cases)

	0-5 months		6-11 months		12-23 months	
	1998	1999	1998	1999	1998	1999
No. of cases	95	128	15	26	14	27
Incidence (overall)	281	387	44	79	21	40
Incidence, unvacc. (0-1 vacc.)	-	-	690	906	734	735
Incidence vacc. (2-3 vacc.)	-	-	24	70	13	33
Vaccination effect	-	-	0.96	0.92	0.98	0.96
No. of hospital admissions	74	94	6	2	4	3
Frequency of admissions	0.78	0.73	0.4	0.08	0.29	0.11

Fig. 1. No. of notified cases of whooping cough in children under 2 years by age in months, 1998 and 1999



calculated for children aged 6-11 months, who may have had up to two vaccinations, and for children aged 12-23 months, who may have had up to three vaccinations. Taking 1998 and 1999 together, the calculated vaccination effectiveness in the two age groups is 0.94 and 0.97, respectively, with lower 95% confidence limits of 0.86 and 0.93, respectively.

Apart from the statistical uncertainty, it should also be borne in mind that the calculated vaccination effectiveness will be lower if the true vaccination acceptance is lower than that estimated from Health Service data. Nevertheless, the overall conclusion is that the new pertussis vaccine is effective, even after two doses. The duration of protection cannot be directly estimated, however, as whooping cough is only individually notifiable for children under 2 years.

Hospital admissions

The proportion of children with whooping cough admitted to hospital within the first six months of life was very high (75%), which underlines the fact that whooping cough is a very serious disease in very small children, Table 1 and Fig. 1. One child of 2 months died of whooping cough in 1999, EPI-NEWS 48/99.

Source of infection

In both 1998 and 1999 the source of infection was unknown in just under half of the notified cases. In the other cases of 1999 (1998 in brackets), siblings made up 47% (53%) of the stated sources, other household members 10% (13%), playmates and "other known persons" 18% (22%), institutional or day care 6% (3%), while whooping cough in the area of residence without a known infected contact made up 19% (6%) of the stated sources.

Comments

As whooping cough is a very serious disease in small children, it is very important to give the first two doses of vaccine on time.

It is also very important to notify cases of whooping cough in accordance with regulations to ensure effective surveillance of the whooping cough vaccination programme.

Laboratory-diagnosed cases of whooping cough in 1999, comprising all age groups, will be dealt with in a future issue of EPI-NEWS.

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Patients with positive cultures of pathogenic intestinal bacteria, 2000, by county

	Campylobacter		Yersinia enteritidis		S. typhimurium		S. enteritidis		Other zoon. Salmonella spp.	
	July	Aug	July	Aug	July	Aug	July	Aug	July	Aug
Cph. Municip.	74	76	2	3	5	1	17	33	15	15
Frb. Municip.	11	2	-	-	-	-	2	2	4	3
Copenhagen *)	74	91	1	7	3	7	16	14	4	11
Frederiksborg	63	47	-	1	2	4	5	20	3	9
Roskilde	34	33	-	1	1	3	7	7	6	3
West Zealand	36	25	-	-	1	4	10	5	8	4
Storstrøms	33	25	-	5	1	1	6	7	2	6
Bornholms	8	5	-	-	1	-	-	-	1	-
Funen	87	66	3	6	7	11	14	15	6	9
South Jutland	34	20	-	-	2	5	10	12	7	1
Ribe	40	36	-	2	3	5	7	4	6	4
Vejle	53	51	3	-	3	9	14	13	5	3
Ringkøbing	68	35	7	4	5	-	9	7	3	2
Aarhus	80	80	1	3	3	7	18	13	7	11
Viborg	19	17	-	1	4	3	12	5	2	3
North Jutland	45	46	-	1	5	5	23	14	5	8
Unknown	1	1	-	-	-	-	-	-	-	-
DK July/August 2000	760	656	17	34	46	65	170	171	84	92
DK July/August 1999	564	529	27	28	41	108	193	321	81	145

*) Figures for Copenhagen County comprise only part of the diagnosed cases

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