EPI-NEWS

NATIONAL SURVEILLANCE OF COMMUNICABLE DISEASES

Editor: Susanne Samuelsson
Dept. of Epidemiology
Statens Serum Institut • 5 Artillerivej • DK 2300 Copenhagen S

Tel.: +45 3268 3268 • Fax: +45 3268 3874
www.ssi.dk • abonnement@ssi.dk • ISSN: 1396-4796

LABORATORY-DIAGNOSED WHOOPING COUGH, 2000-2001

No. 44, 2002

Up to the end of 1997, reports of laboratory-diagnosed whooping cough were only based on culture confirmed cases. Since 1 January 1998, analyses have included cases diagnosed by culture and/or PCR-methods. However, each case is only counted as one. This is of significance when comparing data from the two periods. Epidemics of whooping cough occur every 3-5 years. The last epidemic in Denmark was in 1997, involving 981 culture positive cases. This number was 2-3 times higher than the incidence in 1995-96 and 1998. During the years 1999-2001, the incidence of laboratory-diagnosed whooping cough has been more or less constant, table 1 and EPI-NEWS 41/00. The number of diagnosed cases was similar to that in 1997, although these years could not be classified as epidemic.

Table 1. Laboratory-diagnosed cases of whooping cough in 1999-2001 by age (yrs) and incidence per 10^5 in ( )

Age	1999		2000		2001	
<2	211	(157)	213	(160)	210	(157)
2-4	238	(113)	168	(81)	161	(79)
5-9	350	(105)	384	(112)	312	(90)
10-14	78	(27)	91	(30)	102	(33)
15-19	13	(5)	6	(2)	12	(4)
20-29	20	(3)	21	(3)	20	(3)
30-39	53	(6)	47	(6)	88	(11)
40-49	24	(3)	20	(3)	26	(4)
≥50	23	(1)	32	(2)	34	(2)
Total	1.010	(19)	982	(18)	965	(18)

Table 2 shows that the percentage of culture positive results has increased during the period 1999-2001 compared with the previous four years. An increased number of requested tests and a higher sensitivity of PCR may explain the high number of laboratory-diagnosed cases during 1999-2001, and therefore cannot be considered as reaching epidemic proportions.

Table 2. Percentage of positive and no. of laboratory-confirmed cases of whooping cough, 1995-2001

	Percentage positive		Number positive
Year	Culture	PCR	
1995	7.9	-	368
1996	8.6	-	435
1997	8.8	-	981
1998	7.5	14.0	458
1999	10.7	15.9	1,010
2000	10.3	14.6	968
2001	10.6	10.4	965

Incubation time and infectious period

The incubation time for pertussis is normally 7-10 (4-21) days. Transmission of pertussis is air-borne, through coughing or sneezing, or by direct contact with secretions from the airways. The patient is most infectious in the catarrhal stage and in the first two weeks after the cough has commenced.

Specimen-taking and diagnosis

For culture and/or PCR investigation, it is still recommended to perform tests on nasopharyngeal secretions taken with bent charcoal swabs that are sent in Stuart's transport media. Moreover, it is recommended that at least two specimens be taken at the same time. The results of culture are available after 4-6 days, and those of PCR after 1-2 days. This PCR diagnostic method cannot be used to monitor treatment.

Treatment

Macrolide antibiotics are recommended for both treatment and prophylaxis. Most patients will be non-infectious after five days' treatment. Penicillin is not effective.

The current whooping cough situation

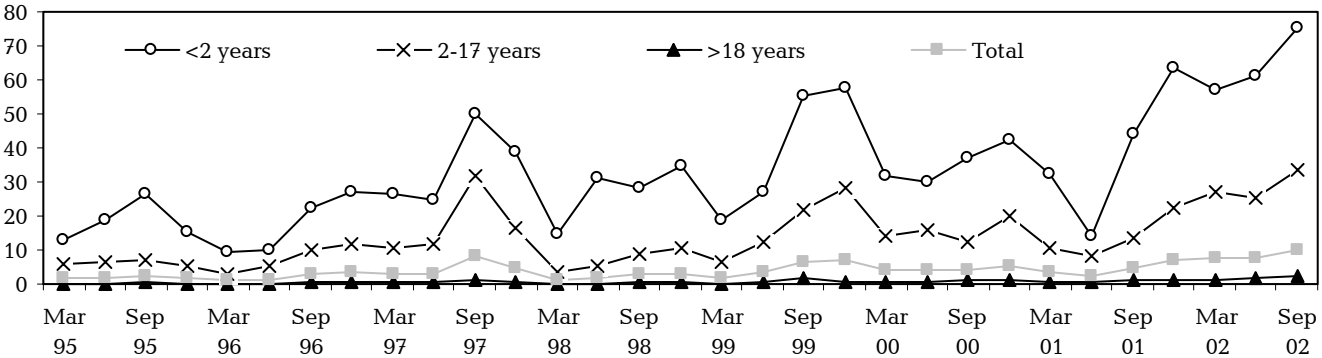
Currently, this year's data points toward 2002 as an epidemic year, fig 1. In the 1st, 2nd and 3rd quarters there have been 414, 420 and 544 laboratory-confirmed cases respectively. Notifications of children under the age of 2 have already reached 224, in contrast to 95 in the same period in 2001. Unusually high numbers of notifications were received from the counties of Ringkøbing, Aarhus, Viborg, North Jutland and Funen. Since the greatest number of cases is usually diagnosed in the 2nd half of the year, the overall incidence in 2002 may be 2-3 times higher than the average for the last three years. This incidence is comparable with that in 1997 taking changes in diagnostic techniques used into account. In recent years, a corresponding increase in the incidence of pertussis has been observed in other countries with high pertussis vaccination coverage, independent of whether whole cell or acellular vaccine was used. In Denmark, the vaccine effectiveness in children up to 2 years is estimated to be high, EPI-NEWS 40/00. Pertussis prophylaxis after exposure will be discussed in a forthcoming EPI-NEWS issue.
(D. Dragsted, ALMOS, P. Andersen, A. H. Christiansen, Dept. of Epid.)

INFLUENZA SURVEILLANCE

Reports from general practitioners to the sentinel surveillance system started in the week commencing 30 September (week 40). The results are published weekly on the back page of EPI-NEWS during the influenza season and will shortly also be available on the Institute's website.
(Department of Epidemiology)

30 October 2002

Fig. 1. Cases of laboratory-diagnosed whooping cough per 10^5 per quarter. Diagnosed by culture, 1 January 1995 - 31 December 1997, and diagnosed by culture and/or PCR, 1 January 1998 – 30 September 2002



Patients with selected individually notifiable diseases

Notifications received during the 3rd quarter of 2002, compared with the corresponding period in 2001

	Tuberculosis		Meningococcal disease		Pertussis < 2 yrs		Chronic Hepatitis B		Hepatitis A		AIDS	
County	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001
Cph. Municipality	36	22	1	5	9	7	2	2	4	11	-	1
Frb. Municipality	-	2	-	-	1	-	1	2	-	-	-	1
Cph. County	12	14	2	2	8	1	3	4	4	12	-	6
Frederiksborg	7	10	1	-	7	8	2	3	3	-	-	1
Roskilde	1	-	-	1	6	1	-	1	-	-	-	1
West Zealand	7	3	1	-	7	2	1	5	-	-	-	-
Storstrøm	6	7	1	1	5	1	1	4	-	-	-	-
Bornholm	1	1	-	-	1	-	-	-	-	-	-	-
Funen	8	8	3	-	11	3	-	7	-	2	-	2
South Jutland	2	-	1	2	1	-	-	-	1	-	-	-
Ribe	8	7	-	1	3	2	-	5	-	-	-	-
Vejle	3	3	-	3	7	1	1	2	-	-	-	1
Ringkøbing	1	2	1	1	13	1	2	-	6	-	-	2
Aarhus	16	15	5	1	13	20	4	3	5	-	2	2
Viborg	3	6	-	1	9	-	-	-	-	-	-	1
North Jutland	6	11	1	3	4	6	-	-	-	-	-	2
Other	7	-	1	-	-	-	2	1	-	-	-	-
Total	124	111	18	21	105	53	19	39	23	25	2	20

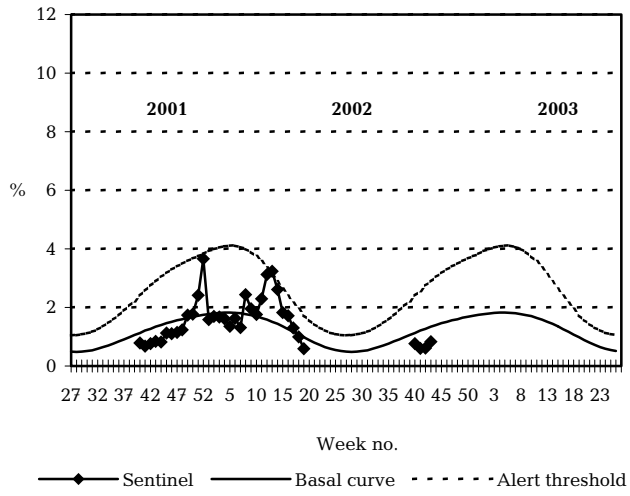
Patients with other individually notifiable diseases

Notifications received during the 3rd quarter of 2002 compared with the corresponding period in 2001, DK

	3rd quarter	
	2002	2001
Creutzfeldt-Jakob disease	222	-
Foodborne diseases	284	396
Hepatitis B - acute	10	13
Hepatitis C - acute	1	3
Hepatitis C - chronic	52	37
Hib-meningitis	1	-
Legionnaires' pneumonia	33	41
Measles	7	7
Mumps	5	2
Neuroborreliosis	13	23
Paratyphoid fever	10	3
Pneumococcal meningitis	8	19
Psittacosis (ornithosis)	1	4
Shigellosis	8	44
Typhoid fever	4	6
VTEC/HUS	53	44

Sentinel surveillance of influenza activity

Weekly percentage of consultations, 2001/2002/2003



Sentinel: Influenza consultations as percentage of total consultations

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

Alert threshold: Possible incipient epidemic

(Dept. of Epidemiology)