EPI-NEWS **NATIONAL SURVEILLANCE OF COMMUNICABLE DISEASES**
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MEASLES 1990 - 2000

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Up to the end of 1993 cases of measles were summarily reported in weekly case-lists. Since then, measles cases have been individually notifiable once the clinical diagnosis has been made and IgM antibodies or contact with a laboratory-confirmed case have been demonstrated. The present report also includes cases that have been diagnosed exclusively on clinical grounds.

Fig. 1. No. of notified measles cases, 1990-2000

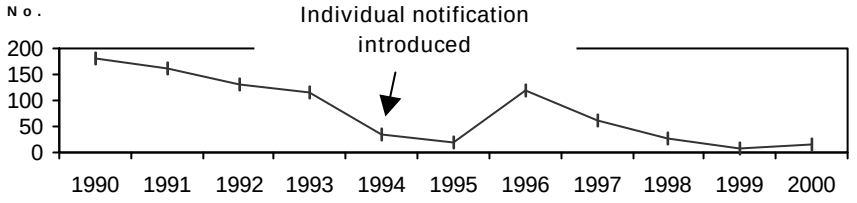
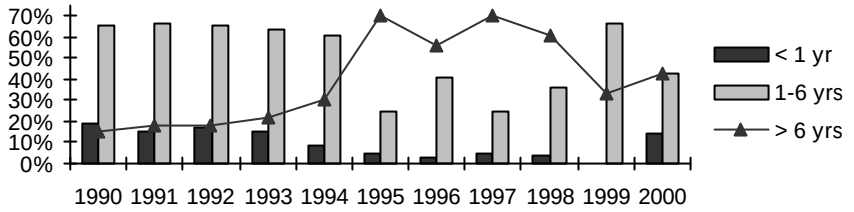


Fig. 2. Relative age distribution (%) of notified measles cases, 1990-2000



Incidence

Since the introduction of MMR vaccination in 1987 the annual number of notified cases of measles has fallen markedly. From 1990 to 2000 a total of 870 cases was reported; 586 in 1990-1993 and 284 in 1994-2000, Fig. 1. The larger number of cases notified in 1996 and 1997 could be ascribed to outbreaks. More recent years have been characterized by long periods without notifications of measles. Thus eight months passed from the last case of 1999 to the first case of 2000, and another five months elapsed before the next case was notified.

County distribution

After 1993 a fall in the incidence of measles has been noted in nearly all Danish counties, Table 1. The counties Viborg and South Jutland were exceptions, with a unchanged incidence because of outbreaks. The different reporting systems employed during the two periods mean that the figures are not fully comparable.

Table 1. Notified measles cases, average annual incidence per 100,000, by county, 1990-2000

County	90-93	94-00
Cph. & Frb. Mcp.	4.0	0.5
Copenhagen	2.9	0.6
Frederiksborg	0.5	0.2
Roskilde	2.3	1.1
West Zealand	2.0	0.6
Storstrøm	1.8	0.3
Bornholm	4.4	0.6
Funen	3.4	0.5
South Jutland	1.9	2.3
Ribe	5.8	1.2
Vejle	3.2	1.1
Ringkøbing	4.2	0.4
Aarhus	3.4	1.1
Viborg	2.2	2.2
North Jutland	2.2	0.1
Total	2.8	0.8

Age distribution

The number of measles cases decreased in all age groups. Since 1995 there has been a shift in the relative age distribution so cases in the > 6-year age group have formed a larger proportion than previously, Fig. 2.

Outbreaks

Information on outbreaks is available from 1994 onwards, EPI-NEWS 3/96, 9/96, 17/96, 18/97, 3/98, 23/98. Eighteen outbreaks have been recorded with a total of 139 cases. Just over 3/4 of all cases related to outbreaks occurred in Jutland, constituting 38% of all notified cases. In 17 cases there was notice of contact with chains of infection, 15 in 1996 and two in 1997.

Diagnosis

Information on diagnostic criteria is available from 1994 on. In just under 42% of cases the diagnosis was confirmed by positive IgM, while 16% had clinical features plus contact with laboratory-confirmed cases. In 42% the diagnosis was made exclusively on clinical grounds.

Vaccination status

In 1990-1993, 61% of reported measles patients were unvaccinated, 25% of these being < 1 year; 34% had been vaccinated and the vaccination status was unknown in 5% of cases. In 1994-2000, 75% were unvaccinated, 13% of these being < 15 months; 19% had been vaccinated and the vaccination status was unknown for 6%.

Hospital admissions; complications

In the period 1994-2000, 48 (17%) of the notified patients had been admitted to hospital. 14% of 0-5-year-olds and 13% of 6-12-year-olds had been admitted, as against 38% of >12-year-olds. One child of 12 years was admitted with encephalitis. Two children of 7 and 16 years were admitted with serous meningitis and meningism, respectively. An 11-year-old child was admitted with post-infectious thrombocytopenia. Five other patients received antibiotics because of secondary infection. All patients recovered without sequelae. The nine cases with complications had been confirmed serologically.

Comments

The introduction of MMR vaccination has made measles a rare disease in Denmark. To prevent epidemics it is crucial to maintain a high vaccination acceptance, EPI-NEWS 23/00. The age distribution of measles has moved upwards, which is known to possibly lead to more complications, EPI-NEWS 3/00. The hospital admissions and complications underline the fact that measles is still a serious disease. Studies in other countries have shown that the clinical diagnosis of measles is not quite accurate, especially in small children, vaccinated patients or sporadic cases. It is therefore important to take a blood test for antibody determination in as many cases as possible.

(S. Glismann, A. H. Christiansen, Department of Epidemiology)

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

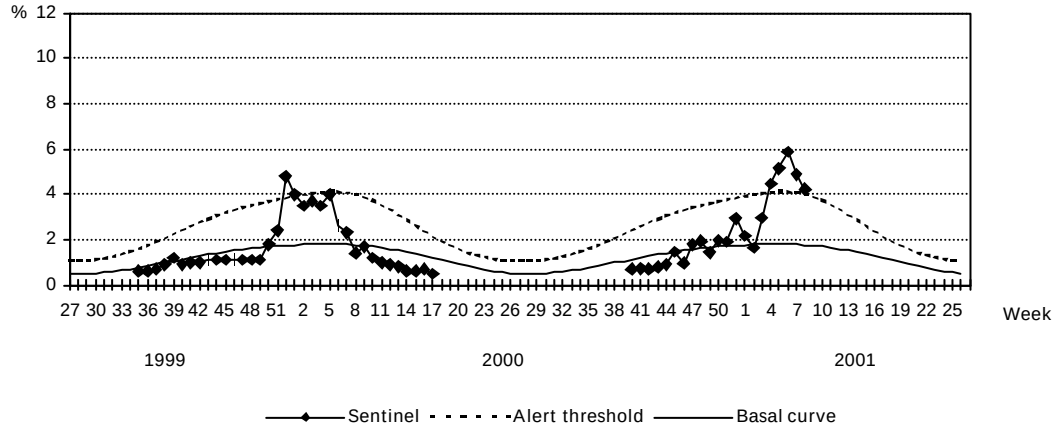
	Campylobacter		Yersinia ent.		S. typhimurium		S. enteritidis		Other zoonotic salmonella spp.	
County	Nov	Dec	Nov	Dec	Nov	Dec	Nov	Dec	Nov	Dec
Cph. Municip.	49	33	2	2	3	9	11	5	12	12
Frb. Municip.	6	3	-	-	-	-	-	1	1	-
Copenhagen	37	27	4	4	-	3	7	6	10	8
Frederiksborg	18	24	1	3	2	3	3	6	3	2
Roskilde	9	16	-	1	1	1	5	1	3	4
West Zealand	10	5	1	1	1	-	4	4	3	-
Storstrøm	5	15	4	-	-	2	6	3	2	-
Bornholm	2	1	-	-	-	-	-	2	1	-
Funen	30	24	2	2	2	2	7	4	5	3
South Jutland	9	10	-	-	1	4	4	6	1	2
Ribe	20	7	3	-	3	2	6	2	4	-
Vejle	23	11	1	2	5	3	8	3	-	5
Ringkøbing	11	8	1	1	3	5	5	5	4	3
Aarhus	32	30	2	3	4	5	7	9	10	7
Viborg	10	6	-	-	-	1	4	1	3	-
North Jutland	18	22	-	5	-	1	7	4	3	4
Unknown	-	1	-	-	-	-	-	-	-	1
DK Nov/Dec 2000	289	243	21	24	25	41	84	62	65	51
DK Nov/Dec 1999	220	187	47	16	32	24	144	107	47	51

Figures for Copenhagen County comprise only part of the diagnosed cases.

(Dept. of Gastrointestinal Infections)

Sentinel surveillance of influenza activity

Weekly percentage of consultations, 1999/2000/2001



Sentinel: Influenza consultations as % of total consultations

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

Alert threshold: Possible incipient epidemic

(Dept. of Epidemiology)