

Until 1994, mumps cases used to be summarily reported in weekly disease lists. From the beginning of 1994, mumps has been individually notifiable when the clinical diagnosis is supported by a positive IgM.

**Incidence**

In 1987, when MMR vaccination was introduced into the Danish childhood vaccination programme, 26,080 cases of mumps were reported. During the period 1988-1993, 2,765 cases were reported, the annual number of cases falling from 1,221 to 148. From 1994 to 2000 only 184 cases were notified, varying from 13 to 40 per year, Fig. 1.

**County distribution**

All counties showed a fall in cases after 1993, Table 1. Because of the different reporting systems operating during the two periods, the figures are not fully comparable, but during the period 1990-1993 the national incidence fell from 7.0 per 100,000 to 2.8 per 100,000.

**Table 1. Average annual incidence per 100,000 of reported or notified cases of mumps during the periods 1990-1993 and 1994-2000, by county**

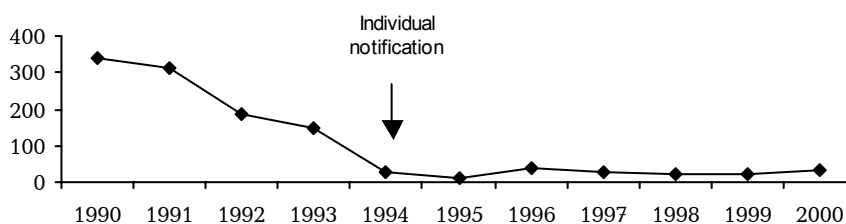
County	90-93	94-00
Cph. & Frb. Mcp.	5.9	0.7
Cph. County	5.3	0.7
Frederiksborg	2.7	0.6
Roskilde	3.8	0.3
West Zealand	3.9	0.2
Storstrøm	4.7	0.4
Bornholm	7.7	0.3
Funen	7.2	0.5
South Jutland	3.6	0.5
Ribe	3.2	0.7
Vejle	3.8	0.5
Ringkøbing	5.1	0.4
Aarhus	4.6	0.5
Viborg	4.7	0.3
North Jutland	5.0	0.3
Whole country	4.8	0.5

**Mumps 1994-2000**

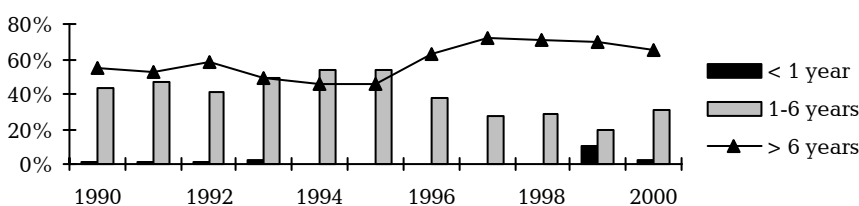
The diagnosis was serologically confirmed in 83 (45%) of the 184 notified cases, the remaining cases being diagnosed exclusively on clinical grounds. During the period the proportion of serologically confirmed cases rose and then remained fairly steady at an average of 58% from 1997, Fig. 3.

**MUMPS 1987-2000**

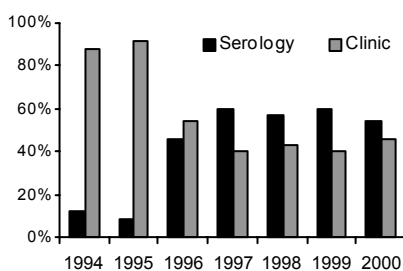
**Fig. 1. No. of notified cases of mumps, 1990-2000**



**Fig. 2. Notified mumps cases: relative age distribution (%), 1990-2000**



**Fig. 3. Serologically confirmed cases vs. clinically diagnosed cases of mumps, notified 1994-2000**



The sending of notification reminders in cases of positive serology was introduced in 1996. Reminders were sent for 62 (34%) of the 184 notifications.

**Sex and age**

Of the 184 notified patients, 110 were male and 74 were female, with an age range of 0-67 years (median 11). The proportion of patients over 6 years of age rose from 54% in the period 1990-1995 to 68% in the period 1996-2000, Fig. 2.

**Vaccination status**

During the period 1994-2000, 33% (60) were unvaccinated, including 3 patients under the age of 15 months; 40% (73) had been vaccinated, and the vaccination status was unknown in 28% (51) of cases.

**Hospital admissions and complications**

Information on symptoms was available for 46% of cases. 85% of these had unilateral or bilateral parotid

swelling. Nine patients (aged 14-50 years, median 31) had symptoms of orchitis. 14 (8%) of the notified patients (age range 2-48 years, median 27) were admitted to hospital. Among these, a 23-year-old woman had meningitis, a 3-year-old child had thrombocytopenia and a 38-year-old woman presented facial nerve palsy and hearing loss.

**Comments**

The total number of mumps cases has fallen drastically after the introduction of MMR vaccination in 1987. The age of presentation has shifted upwards, which means that relatively more patients have complications, e.g. in the form of orchitis. The mumps component of the MMR vaccine is not quite as immunogenic as the measles component, but against that, mumps is less infectious. As in the case of measles, there have been long periods without mumps, e.g. a period of 11 weeks without notifications this year (see overleaf).

For adequate surveillance of the effect of the vaccination programme, it is important as far as possible to obtain serological confirmation of the cases and to indicate the vaccination status on the notification form, e.g. as 0, 1 or 2 vaccinations, preferably with dates. Children under 18 years of age who have not been MMR-vaccinated at the age of 12 years, can obtain this vaccination under Health Service cover.

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**Number of mumps cases notified per week, week 29, 1999 - week 33, 2001**

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