EPI-NEWS **NATIONAL SURVEILLANCE OF COMMUNICABLE DISEASES**

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ERADICATION OF POLIO - AND THEN WHAT ?

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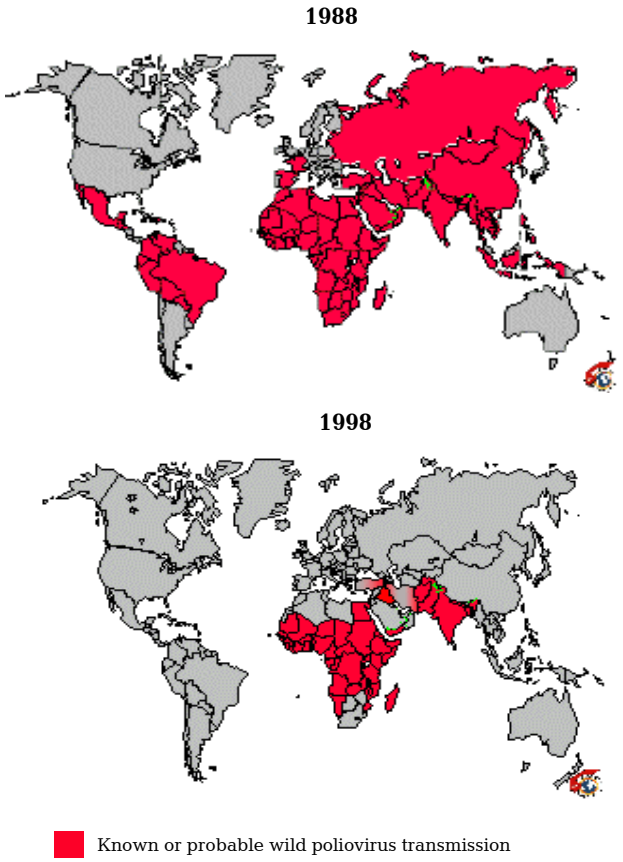
At a recent WHO meeting the status of the world-wide polio eradication campaign was reviewed and future polio vaccine needs discussed. In the course of the campaign the number of reported cases of paralytic polio has fallen from 35,000 in 1988 to 6200 in 1998 (Fig. 1). A provisional figure for 1999 is of 5300 cases. Because of inadequate surveillance and reporting in several countries, it is estimated that the true number of paralytic cases is higher - about 15,000 cases for 1999. The number of more or less asymptomatic poliovirus infections is over 100 times greater again. Thus, more than one million infectious cases are still occurring per annum.

Fig. 1. Known or probable wild poliovirus transmission, 1988 and 1998
Source: WHO



Stopping oral polio vaccination

It is considered doubtful whether paralytic polio will be eliminated in the year 2000, which has been the aim of the eradication campaign.

An optimistic estimate is that the disease will be eliminated by the year 2001 or shortly thereafter. Up to now, the Sabin live oral polio vaccine (OPV) has been the decisive factor in the world-wide campaign. The questions are now arising of when and how the use of OPV can be stopped. This cannot be expected to happen before the year 2005, and 2010 or 2015 is regarded as a more realistic estimate. Several conditions must be met before a decision on world-wide cessation of vaccination with OPV can be taken:

- All countries must be able to document that they are free from circulating wild poliovirus. This implies that no virus has been demonstrated over a period of at least three years - and that surveillance during this period and for a future period is of satisfactory quality.
- There must be certainty that circulation of live Sabin viral strains will rapidly cease when vaccinations with OPV are stopped. Several recent observations unfortunately suggest that this will not immediately be the case, and that a continuing circulation of Sabin strains is associated with a risk of increasing virulence.

It may therefore be necessary to consider using killed polio vaccine (IPV) in a world-wide programme for a shorter or longer period of years after stopping the use of OPV.

- There must be certainty that all live poliovirus, including OPV, is either destroyed or safely enclosed in high-security laboratories or vaccine-producing organizations. In this respect, biological test specimens of different kinds (faeces, respiratory secretions, etc.) that are kept frozen down constitute a potential risk that will be difficult to manage.
- There must be contingency plans in case of any escape of poliovirus, whether accidental or due to deliberate bioterrorism, with a risk of infecting thousands or millions of people.
- Considerable contingency stocks of OPV must be maintained to combat outbreaks of wild poliovirus. On the other hand, for escapes of Sabin viral strains, the use of OPV will probably only exacerbate the problem. For this reason, a continuing production of IPV to maintain equivalent contingency stocks of this type of vaccine is also expected to be necessary.

Need for new polio vaccines

The WHO regards the development of new types of OPV and IPV as highly desirable. In the case of OPV, this because the rare neurological side effects of the Sabin OPV are becoming increasingly unacceptable with the progressive eradication of polio. More and more industrialized countries are going over to using IPV alone in recent years. Because of the risks mentioned above, such countries will undoubtedly continue to use IPV for many years after a world-wide cessation of vaccination with OPV. Because of the danger associated with escapes of virus, it will clearly be advantageous if IPV producers change to using poliovirus of attenuated virulence for the production of IPV.

(Klaus Bro-Jørgensen, Department of Medicine)

8 March 2000

Patients with positive cultures of pathogenic intestinal bacteria in 1999, by county

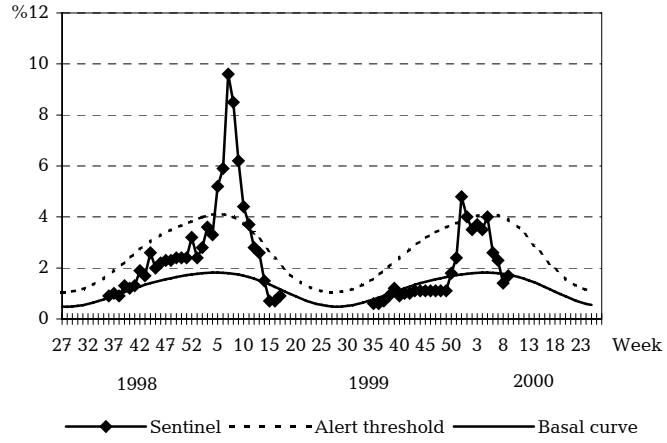
	Campylobacter		Yersinia enteritidis		S. typhimurium		S. enteritidis		Other zoon. Salmonella spp.	
	Nov.	Dec.	Nov.	Dec.	Nov.	Dec.	Nov.	Dec.	Nov.	Dec.
Cph. Municip.	30	24	5	1	-	2	22	4	8	11
Frb. Municip.	2	3	-	-	-	-	-	-	-	-
Copenhagen *	1	2	1	-	2	-	4	6	12	7
Frederiksborg	27	14	4	3	3	-	9	8	1	4
Roskilde	7	14	2	1	-	-	13	11	1	5
West Zealand	11	9	1	-	-	2	6	5	2	2
Storstrøms	10	12	1	1	2	-	3	7	1	4
Bornholms	2	1	1	-	-	-	1	-	1	-
Funen	13	18	8	3	12	4	17	19	5	1
South Jutland	15	8	-	-	2	-	12	13	2	-
Ribe	19	16	3	1	3	2	10	3	1	1
Vejle	20	11	3	-	2	5	12	9	1	3
Ringkøbing	16	12	5	1	-	-	3	6	-	2
Aarhus	23	19	6	4	4	2	10	7	9	9
Viborg	5	10	1	1	2	2	7	2	-	1
North Jutland	17	14	5	-	-	5	15	6	2	1
Unknown	2	-	1	-	-	-	-	1	1	-
DK Nov./ Dec. 1999	220	187	47	16	32	24	144	107	47	51
DK Nov./ Dec. 1998	204	169	35	19	33	24	137	112	39	27

* Figures for Copenhagen county only comprise part of the diagnosed cases

(Intestinal Bacteriology Lab.)

Influenza activity in sentinel surveillance

Weekly percentage of consultations, 1998/1999/2000



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)