

MEASLES-FREE EUROPE: A REALISTIC GOAL?

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Measles vaccination has formed part of the European childhood vaccination programmes for more than 20 years, but the disease, nevertheless, remains a public health challenge. Occurrence and outbreaks of measles in several European countries in the 2006-08 period raises the question of the feasibility of the World Health Organisation's (WHO's) objective of eliminating measles in Europe by the end of 2010.

Status in Europe

The European surveillance of measles and other childhood vaccine-preventable diseases are coordinated by EUVAC.NET, EPI-NEWS 3/07. In 2006 and 2007 there were 8,223 and 3,909 cases, respectively, in the 32 countries which comprise the network, [Figure 1](#).

85% of all recorded cases occurred in five countries: Romania, Germany, Great Britain, Switzerland and Italy. Preliminary data for 2008 show a total of 7,804 cases, [www.euvac.net](#). Romania regained control in 2007-8, but in addition to the four remaining countries, 2008 also saw an increase in France and Austria.

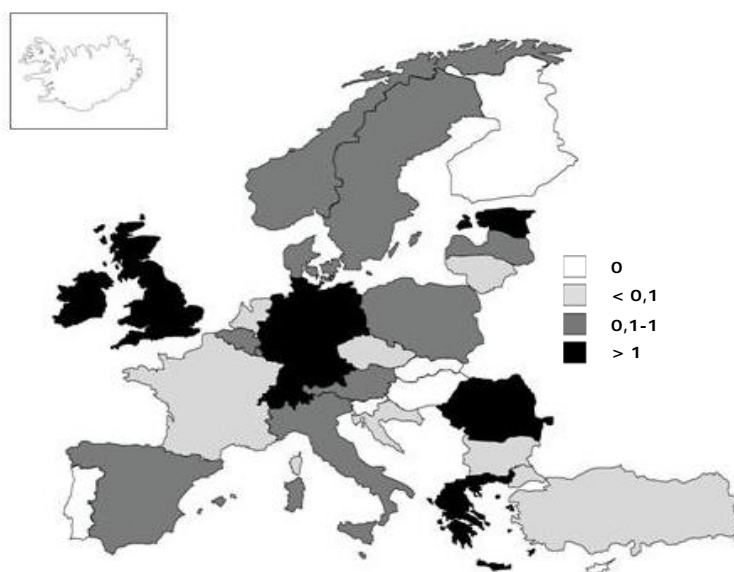
In 2006-7, the measles occurrence was highest among children ≤ 5 years of age, but nearly one in every five cases was ≥ 20 years old. The majority of the cases was unvaccinated (80%) or had only received one measles vaccination.

The challenges

Insufficient coverage of the childhood vaccination programme is the primary problem in several European countries. The reasons are complex and varied. In some countries, the problems are caused by general challenges encountered by the preventive childhood vaccination programmes, particularly in relation to disadvantaged population groups. But systematic opposition to vaccination, EPI-NEWS 14/08, is probably also still of some importance. Furthermore, outbreaks among population groups with a specific ethnic, religious or philosophic background suggest a need to improve the dialogue with such groups to increase vaccination coverage.

One consequence of the insufficient vaccination coverage is that measles virus is exported from Europe to other continents and is spread between the European countries. In 2006-7, 56% of the 210 cases infected in connection with travel abroad were infected in another

Figure 1. Measles in Europe 2006-2007, by country, incidence per 100,000



European country. Such cases frequently become the index cases of additional outbreaks in the country of origin.

Measles in Denmark in 2008

In 2008 a total of 14 measles cases were notified: seven males and seven females. Three children were < 15 months old, four were aged 2-4 years and seven adults were aged 23-39 years. All were unvaccinated with the exception of one adult who had been vaccinated twice. All ten patients, six children and four adults, were admitted to hospital in connection with the measles infection. No sequelae have been reported. Five persons were infected abroad, of whom four caused another 11 Danish measles cases.

- A child was probably infected during a vacation in an African country and subsequently infected another five children, including two who presented in 2009. All six patients had the B3 type of the disease.

- An adult was infected during a journey to Nepal/India and infected four persons with the D4 type of measles, EPI-NEWS 9/08.

- A child was infected with measles of type D5 in Switzerland, and subsequently infected another child.

- An adult was probably infected during a journey to China/Russia and possibly infected another adult: the two persons did not come into contact, but shared a possible infection time and place and the connection between the two cases was strengthened by the fact that both had the H1 type of the virus.

- An adult was presumably infected while travelling in Thailand, the virus type detected was D9; no further cases were reported.

Commentary

The occurrence of measles in some European countries remains excessively high which entails an increased risk of infection spreading across national boundaries. Whether or not the WHO's objective to eliminate measles in Europe is fulfilled, it remains essential to strive towards a consistently high vaccination coverage. In connection with travel abroad to measles endemic areas, the Danish recommendation is vaccination with MMR to previously unvaccinated children > 9 months and to adults who have not previously had the disease or been vaccinated, EPI-NEWS 25/06.

In addition to the highly contagious nature of measles, the current situation is complicated by the fact that it also occurs among the adult population and that infection may spread as the concerned persons make use of health care services, e.g. in waiting rooms and during the early parts of the care pathway before the diagnosis has been considered, as has been observed in e.g. Denmark. In 2008, to strengthen population immunity, among others, the second MMR vaccination was moved to the age of four years, EPI-NEWS 9/08.

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Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2009 figures are preliminary)

Table 1	Week 16 2009	Cum. 2009 ¹⁾	Cum. 2008 ¹⁾
AIDS	1	8	12
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob			
Diphtheria	0	0	0
Food-borne diseases	3	117	85
of these, infected abroad	0	23	23
Gonorrhoea	5	168	113
Haemorrhagic fever	0	0	0
Hepatitis A	0	9	16
of these, infected abroad	0	5	8
Hepatitis B (acute)	0	9	5
Hepatitis B (chronic)	2	63	56
Hepatitis C (acute)	0	4	4
Hepatitis C (chronic)	7	114	122
HIV	2	80	70
Legionella pneumonia	1	34	31
of these, infected abroad	1	5	12
Leprosy	0	0	0
Leptospirosis	0	0	2
Measles	0	9	6
Meningococcal disease	1	27	24
of these, group B	0	15	11
of these, group C	1	9	4
of these, unsp. + other	0	3	9
Mumps	0	3	14
Neuroborreliosis	0	3	19
Ornithosis	0	0	1
Pertussis (children < 2 years)	0	36	33
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	1	3	0
Listeria monocytogenes	0	2	1
Streptococcus pneumoniae	2	35	37
Other aethiology	1	5	12
Unknown aethiology	0	3	12
Under registration	0	13	-
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	0	28	21
of these, infected abroad	0	26	19
Syphilis	5	80	34
Tetanus	0	0	0
Tuberculosis	1	118	122
Typhoid/paratyphoid fever	0	6	10
of these, infected abroad	0	3	8
Typhus exanthematicus	0	0	0
VTEC/HUS	0	32	37
of these, infected abroad	0	8	12

¹⁾ Cumulative number 2009 and in corresponding period 2008

Selected laboratory diagnosed infections

Number of specimens, isolates, and/or notifications received in SSI laboratories

Table 2	Week 16 2009	Cum. 2009 ²⁾	Cum. 2008 ²⁾
Bordetella pertussis (all ages)	2	45	40
Gonococci	15	129	116
of these, females	3	30	24
of these, males	12	99	92
Listeria monocytogenes	0	16	15
Mycoplasma pneumoniae			
Resp. specimens ³⁾	2	26	40
Serum specimens ⁴⁾	4	52	47
Streptococci ⁵⁾			
Group A streptococci	9	69	48
Group B streptococci	3	30	31
Group C streptococci	2	10	4
Group G streptococci	9	51	36
S. pneumoniae	30	510	429
Table 3	Week 14 2009	Cum. 2009 ²⁾	Cum. 2008 ²⁾
MRSA	8	195	150
Pathogenic int. bacteria ⁶⁾			
Campylobacter	29	434	459
S. Enteritidis	7	62	73
S. Typhimurium	17	250	119
Other zoon. salmonella	7	174	202
Yersinia enterocolitica	4	52	65
Verocytotoxin- producing E. coli	1	31	32
Enteropathogenic E. coli	2	37	22
Enterotoxigenic E. coli	6	61	80

²⁾ Cumulative number 2009 and in corresponding period 2008

³⁾ Resp. specimens with positive PCR

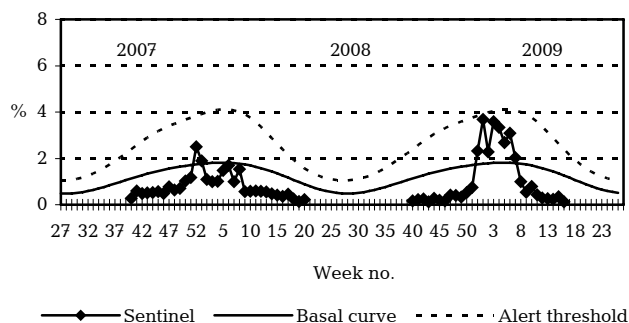
⁴⁾ Serum specimens with pos. complement fixation test

⁵⁾ Isolated in blood or spinal fluid

⁶⁾ See also www.germ.dk

Sentinel surveillance of the influenza activity

Weekly percentage of consultations, 2007/2008/2009



◆ Sentinel: Influenza consultations
 (as percentage of total consultations)
 — Basal curve: Expected frequency of consultations
 under non-epidemic conditions
 - - - Alert threshold: Possible incipient epidemic