EPI-NEWS
NATIONAL SURVEILLANCE OF COMMUNICABLE DISEASES

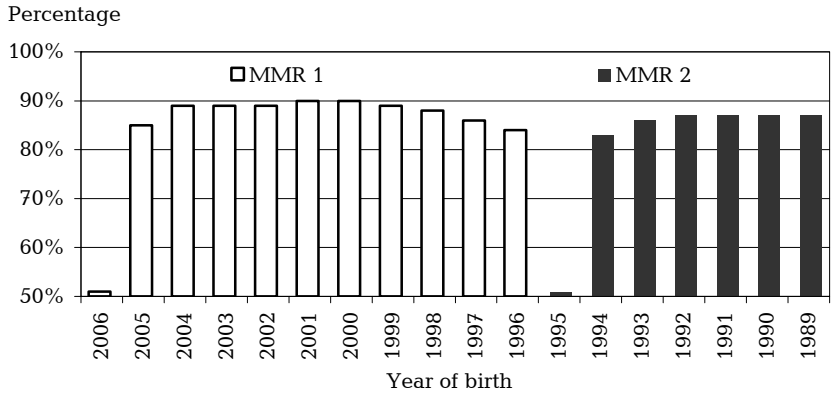
Editor: Peter Henrik Andersen
Dept. of Epidemiology
Statens Serum Institut • 5 Artillerivej • DK 2300 Copenhagen S
Tel.: +45 3268 3268 • Fax: +45 3268 3874
www.ssi.dk • epinews@ssi.dk • ISSN: 1396-4798

MMR VACCINATION: COVERAGE BY END 2007

No. 36, 2008

Vaccination coverage was calculated on 31 December on the basis of person-identifiable data from the national childhood vaccination database.
The reported coverage merely provides a minimal estimate as only vaccinations performed in Denmark and by GPs are included, EPI-NEWS 6/07. Assuming that all immigrant children had been vaccinated, the average MMR 1 and 2 vaccination coverage would both increase by approximately two percentage points.

Figure 1. Coverage of MMR 1 vaccination for birth cohorts 1996-2006 and MMR 2 vaccination for birth cohorts 1989-1995



Childhood vaccination database
The data included is based on the GPs' settlements with the National Health Service. Vaccination coverage by birth cohorts is shown in Figure 1.
Vaccination was presumed not to have been completed at the calculation date for MMR 1 for birth cohort 2006 and MMR 2 for birth cohort 1995.

MMR 1
Since birth cohort 1999, the coverage has remained constant at 89-90%, Figure 1.
For birth cohort 2005, coverage was only 85%. The decrease in coverage may be explained by delayed vaccinations. The highest vaccination coverage was observed on Bornholm, in East Zealand and East Jutland, Table 1.

Table 1. Percentage of MMR 1 vaccinees by age at vaccination, birth cohorts 2003-2005

Area	2005	2004	2003
Copenhagen City	83	88	88
Copenhagen subs.	86	89	89
Northern Zealand	86	89	89
Bornholm	87	91	92
Eastern Zealand	89	91	91
W & S Zealand	85	88	89
Funen	81	88	88
Southern Jutland	81	89	90
Western Jutland	85	89	89
Eastern Jutland	87	90	90
Northern Jutland	85	89	89
Total	85	89	89

MMR 2
Vaccination coverage for the birth cohorts 1989-1993 was 86-88%, Figure 1. For the birth cohort 1994, coverage was only 83%. The decrease in coverage may be explained by delayed vaccinations.
The highest vaccination coverage was found on Bornholm and Southern and Western Jutland; the lowest coverage was seen in the city of Copenhagen.

Vaccination age
Approx. 75% of MMR vaccinations were administered to children below the age of 18 months. Consequently, 25% of vaccines were given more than three months later than the recommended vaccination age, Table 2.

Table 2. Percentage of MMR 1 vaccinees by age and birth cohorts, 2001-2005

Birth year	<18 mths	18-23 mths	24-35 mths	>36 mths
2001	76	16	5	3
2002	74	18	6	2
2003	74	18	6	2
2004	75	19	5	1
2005	77	18	5	-

Nearly all MMR 2 vaccinations, 96%, are given at the age of 12 years as recommended.

Commentary
Even though reported vaccination should be regarded the lowest possible real coverage, MMR vaccination remains insufficient. The MMR vaccination objective states that 95% of all children should receive two MMR vaccinations. The calculated vaccination coverage does not exceed 90% for any birth cohort, neither for MMR 1 nor for MMR 2, and the MMR 2 coverage is generally lower than the corresponding MMR 1 coverage.
Furthermore, one in every four children receives the MMR 1 vaccination more than three months after the recommended 15 month vaccination age.
As from 1 April 2008, MMR 2 vaccination was advanced to the four-year examination to increase herd immunity, EPI-NEWS 9/08. It would be premature to assess compliance with the new schedule coverage after this advancement, but the current vaccination coverage as well as the delayed vaccination age contributes to lower level of immunization in the population. In time, the number of unprotected children and adolescents will accumulate, and the risk of measles outbreaks will increase.
In connection with the 1987 introduction of measles vaccination to the childhood vaccination programme, a catch-up programme for children born after 1974 was in place. The coverage of this catch-up programme was limited as was the coverage of the main programme in its early years, EPI-NEWS 14-15/93. Consequently, the birth cohorts mentioned above comprise a considerable number of persons who have received no measles protection. This group is now at risk of measles infection as adults.
The Danish National Board of Health recommends that adults born after 1974 who have not had measles or mumps and who have not already been vaccinated receive MMR vaccination, see www.sst.dk (Danish language). MMR vaccination is free of charge for persons under 18 years of age. There is, in principle, no upper age limit for MMR vaccination.
MMR vaccination should also be considered in unvaccinated children >9 months before travelling to areas where measles occur, EPI-NEWS 25/06.

(P. Valentiner-Branth, S. Glismann, A.H. Christiansen, P.H. Andersen, Department of Epidemiology,
J. B. Simonsen, Department of Epidemiological Research)

3 September 2008

Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2008 figures are preliminary)

Table 1	Week 35 2008	Cum. 2008 [1]	Cum. 2007 [1]
AIDS	0	22	36
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	1	0
Creutzfeldt-Jakob	0	6	12
Diphtheria	0	0	0
Food-borne diseases	32	524	409
of these, infected abroad	3	78	79
Gonorrhoea	16	255	255
Haemorrhagic fever	0	0	0
Hepatitis A	2	27	17
of these, infected abroad	1	10	7
Hepatitis B (acute)	0	12	19
Hepatitis B (chronic)	4	127	192
Hepatitis C (acute)	1	7	4
Hepatitis C (chronic)	25	285	253
HIV	5	156	186
Legionella pneumonia	0	77	69
of these, infected abroad	0	23	18
Leprosy	0	0	0
Leptospirosis	0	3	7
Measles	0	9	2
Meningococcal disease	0	38	54
of these, group B	0	16	30
of these, group C	0	10	17
of these, unspec. + other	0	12	7
Mumps	0	20	3
Neuroborreliosis	1	30	54
Ornithosis	0	2	7
Pertussis (children < 2 years)	5	77	49
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	2	2
Listeria monocytogenes	0	1	8
Streptococcus pneumoniae	0	65	80
Other aethiology	0	17	11
Unknown aethiology	0	16	12
Under registration	2	7	-
Rabies	0	0	0
Rubella (congenital)	0	1	0
Rubella (during pregnancy)	0	0	0
Shigellosis	3	53	103
of these, infected abroad	0	37	27
Syphilis	4	83	66
Tetanus	0	1	1
Tuberculosis	9	282	272
Typhoid/paratyphoid fever	0	19	14
of these, infected abroad	0	14	13
Typhus exanthematicus	0	0	2
VTEC/HUS	3	95	110
of these, infected abroad	0	30	32

[1] *Cumulative number 2008 and in corresponding period 2007*

Selected laboratory diagnosed infections

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

Table 2	Week 35 2008	Cum. 2008 [2]	Cum. 2007 [2]
Bordetella pertussis			
(all ages)	4	130	134
Gonococci	10	250	253
of these, females	3	52	39
of these, males	7	198	214
Listeria monocytogenes	0	33	35
Mycoplasma pneumoniae			
Resp. specimens [3]	2	51	261
Serum specimens [4]	0	62	310
Streptococci [5]			
Group A streptococci	0	108	84
Group B streptococci	5	85	67
Group C streptococci	0	12	16
Group G streptococci	2	94	87
S. pneumoniae	4	663	722
Table 3	**Week 33 2008**	**Cum. 2008 [2]**	**Cum. 2007 [2]**
MRSA	22	393	372
Pathogenic int. bacteria [6]			
Campylobacter	111	1925	2447
S. Enteritidis	31	318	327
S. Typhimurium	55	1214	208
Other zoon. salmonella	23	624	477
Yersinia enterocolitica	2	193	171
Verocytotoxin-producing E. coli	2	92	104
Enteropathogenic E. coli	5	103	114
Enterotoxigenic E. coli	5	210	154

[2] *Cumulative number 2008 and in corresponding period 2007*

[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*

3 September 2008