



HPV VACCINATION, COVERAGE 2010

No. 18, 2011

On 1 January 2009, human papillomavirus (HPV) vaccination was added to the Danish Childhood Vaccination Programme as an offer to girls aged 12 years born in 1996 or later. Furthermore, girls born in 1993, 1994 or 1995 were offered free vaccination as part of a catch-up programme from October 2008 to end 2010, EPI-NEWS 35/08.

The vaccination coverage of the HPV vaccine was calculated as per 31 December 2010, i.e. at the end of the catch-up-programme and two years after initiation of the ordinary programme. Vaccination coverage was calculated on the basis of person-identifiable data from the national childhood vaccination database.

Method of calculation

Vaccination coverage was recorded using the administrative service codes indicated by GPs when settling the first, second and third HPV vaccinations. In cases where GPs used the same vaccination code at all three HPV vaccinations, the codes have automatically been adapted to include the missing codes. The numerator is therefore e.g. the number of girls born in 1993 who received the initial HPV vaccination and the denominator is the number of girls from the birth year residing in Denmark when the data were analysed.

Catch-up programme coverage

A total of 81-89% of girls born in 1993, 1994 or 1995 has received the first HPV vaccination, 80-87% the second and 77-83% the third vaccination, [Table 1](#).

Table 1. HPV vaccination coverage (%) for birth years 1993-1998

	Standard prgm.			Catch-up prgm.		
	1998	1997	1996	1995	1994	1993
HPV 1	66	86	86	89	87	81
HPV 2	50	81	84	87	85	80
HPV 3	22	70	79	83	82	77

The tetravalent vaccine used in the Danish Childhood Vaccination Programme was marketed in Denmark since 23 October 2006. It was thus expected that particularly girls from the earlier birth years comprised by the catch-up programme would have paid for the vaccination. Information on prescription-based HPV vaccination was obtained in connection with the establishment of The Danish Vaccination Register.

Table 2. Vaccination coverage (as percentages of 3rd HPV vaccination for birth years 1993-1997, by region

Region	HPV 3				
	1997	1996	1995	1994	1993
Cph. City	61	71	76	72	66
CPH suburbs	71	79	82	80	72
North Zealand	74	82	84	81	74
Bornholm	74	76	84	87	80
East Zealand	69	78	82	78	73
W & S Zealand	69	74	80	79	74
Funen	65	75	80	79	75
South Jutland	70	78	82	82	78
West Jutland	79	86	89	88	85
East Jutland	74	83	88	87	82
North Jutland	71	80	85	85	81
Total	70	79	83	82	77

Records show that girls born in 1993, 1994 and 1995 have received 4,389, 1,503 and 611 self-paid vaccine doses, respectively. If such vaccines for the 1993 birth year are included in the calculations, and assuming that the vaccines were evenly distributed on all three vaccine doses, coverage increases by four percentage points for HPV1, HPV2 and HPV3, respectively. For girls born in 1994, the corresponding increase in coverage is one percentage point, while the coverage for girls born in 1995 only increases marginally.

Vaccination programme coverage

A total of 86% of girls born in 1996 and 1997 has received the 1st HPV vaccination, 81-84% the 2nd and 70-79% the 3rd vaccination, [Table 1](#). Vaccination of girls born in 1998 had not been concluded when the data were analysed and therefore expectedly shows a lower coverage than other birth years.

National coverage

Generally, the HPV3 coverage was higher in Western Jutland and lower in the City of Copenhagen, i.e. in the Municipality of Copenhagen and Frederiksberg. This trend was observed for the catch-up programme as well as for the standard vaccination programme, [Table 2](#).

Commentary

Overall it is assessed that the introduction of HPV vaccination of girls in the Childhood Vaccination Programme has been well-received. However, it remains essential to maintain

a high level of attention to HPV vaccination to also achieve a satisfactory coverage in the future. To illustrate, geographical differences in the coverage of the vaccination programme of 15 and 18 percentage points exist for birth years 1996 and 1997, respectively.

The overall HPV vaccination coverage of the recently concluded catch-up programme is satisfactory. As expected, a number of self-paid vaccine doses were given, primarily to the oldest girls comprised by the catch-up programme during the period from when the vaccine was first marketed in Denmark to the initiation of the catch-up programme.

If the self-paid doses are included in the statement, vaccination coverage reaches a minimum of 81% for HPV3, which is in line with the assumptions of the HTA report which paved the way for the decision to introduce HPV vaccination.

The coverage of the childhood vaccination programme for 12-year-old girls born in 1996 and 1997 is marginally lower than the coverage for the catch-up programme. Birth years 1996 and 1997 and a proportion of 1998 have received a personal letter on free HPV vaccination as have the girls of the catch-up programme.

The Department of Epidemiology has studied which factors are of importance for HPV vaccination. For girls born in 1996 it was determined that, in addition to regional variation including a lower coverage in the City of Copenhagen, girls with five or more siblings and girls who were born abroad had a significantly lower vaccination coverage than average. Furthermore, it was determined that girls whose mothers were younger or older than 25-34 years when the girl was born, had lower vaccination coverage. These associations, however, had only limited effect on the overall coverage.

Please keep in mind that all three HPV vaccines should be given before the girl's 15th birthday to be covered by the offer of free vaccination forming part of the Childhood Vaccination Programme.

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Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2011 figures are preliminary)

Table 1	Week 17 2011	Cum. 2011 ¹⁾	Cum. 2010 ¹⁾
AIDS	2	22	19
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	2	24
Diphtheria	0	0	0
Food-borne diseases	2	47	79
of these, infected abroad	0	11	23
Gonorrhoea	2	102	163
Haemorrhagic fever	0	0	0
Hepatitis A	0	5	13
of these, infected abroad	0	0	0
Hepatitis B (acute)	0	2	10
Hepatitis B (chronic)	2	69	67
Hepatitis C (acute)	0	4	0
Hepatitis C (chronic)	0	73	156
HIV	3	92	84
Legionella pneumonia	1	24	34
of these, infected abroad	0	4	6
Leprosy	0	1	0
Leptospirosis	1	0	0
Measles	2	43	2
Meningococcal disease	5	51	25
of these, group B	1	12	13
of these, group C	0	24	8
of these, unspec. + other	4	15	4
Mumps	0	2	3
Neuroborreliosis	0	5	6
Ornithosis	0	2	6
Pertussis (children < 2 years)	0	21	32
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	1	0
Listeria monocytogenes	0	2	2
Streptococcus pneumoniae	1	32	34
Other aethiology	0	5	8
Unknown aethiology	0	3	8
Under registration	2	3	-
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	1	26	32
of these, infected abroad	1	21	24
Syphilis	5	143	111
Tetanus	0	0	0
Tuberculosis	7	136	104
Typhoid/paratyphoid fever	1	7	16
of these, infected abroad	1	7	14
Typhus exanthematicus	0	0	0
VTEC/HUS	2	35	45
of these, infected abroad	0	12	13

¹⁾ Cumulative number 2011 and in corresponding period 2010

Selected laboratory diagnosed infections

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

Table 2	Week 17 2011	Cum. 2011 ³⁾	Cum. 2010 ³⁾
Bordetella pertussis (all ages)	0	28	47
Gonococci	8	77	165
of these, females	4	16	48
of these, males	4	61	117
Listeria monocytogenes	3	10	17
Mycoplasma pneumoniae			
Resp. specimens ³⁾	2	194	37
Serum specimens ⁴⁾	3	161	83
Streptococci ⁵⁾			
Group A streptococci	0	79	65
Group B streptococci	0	47	40
Group C streptococci	0	17	17
Group G streptococci	0	49	51
S. pneumoniae	35	439	458
Table 3	Week 15 2011	Cum. 2011 ²⁾	Cum. 2010 ²⁾
MRSA	17	319	199
Pathogenic int. bacteria ⁶⁾			
Campylobacter	32	528	660
S. Enteritidis	2	58	80
S. Typhimurium	2	59	117
Other zoon. salmonella	2	152	177
Yersinia enterocolitica	8	57	46
Verocytotoxin-producing E. coli	1	33	48
Enteropathogenic E. coli	3	39	45
Enterotoxigenic E. coli	5	62	142

²⁾ Cumulative number 2010 and in corresponding period 2009

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