



DTaP-IPV/HIB VACCINATION: COVERAGE BY END 2007

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Vaccination coverage was calculated on 31 December 2007 on the basis of person-identifiable data from the national childhood vaccination database.

The reported coverage is merely a minimal estimate, among others because only vaccinations performed in Denmark and by GPs are included, EPI-NEWS 6/07. Assuming that all immigrant children had been fully vaccinated, the average vaccination coverage for DTap-IPV/HIB 1, 2 & 3 and DTap-IPV revaccination would increase by one to three percentage points.

Calculation method

Vaccination coverage takes into account the number of each primary vaccine given to each child regardless of the time of vaccination.

Any erroneously or unregistered DTap-IPV/HIB 1 and 2 vaccinations which have already been administered, and any delayed DTap-IPV/HIB 3 vaccinations which have yet to be administered at the calculation date therefore constitute a particular risk of underestimating the coverage of the 3rd primary vaccination.

The DTap-IPV revaccination data includes children for whom a revaccination account code had been recorded at the calculation date.

For some birth cohorts, vaccination was expected not to have been concluded at the calculation date. This is the case for DTap-IPV/HIB 1 and 2 for the 2007 cohort, DTap-IPV/HIB 3 for the 2006-2007 cohorts, and DTap-IPV revaccination for the 2002 cohort.

Vaccination coverage for each vaccine is shown by birth cohorts in [Table 1](#) and [Table 2](#).

DTaP-IPV/HIB 1, 2 & 3

In the birth cohorts 1999-2006, 96-97% had received a minimum of one vaccine and 90-92% had received a minimum of two vaccines.

The percentage which had received all three primary vaccines in the above period was 73-79%; the lowest coverage was found in birth cohort 2005, the highest in birth cohort 2001.

DTaP-IPV revaccination

Vaccination coverage for birth cohorts 1993-2001 was 79-84%; the lowest coverage corresponds to cohort 1997, the highest to cohorts 1993 and 2001.

Regional coverage

The DTap-IPV/HIB 3 coverage of the cohorts 2004-2006 and the DTap-IPV revaccination coverage of the cohorts 2000-2002 were highest in Bornholm,

Table 1. Vaccination coverage percentages for primary DTap-IPV/HIB vaccination in birth cohorts 1999-2007

Vaccine	2007	2006	2005	2004	2003	2002	2001	2000	1999
DTaP-IPV/HIB 1	66	97	97	97	97	96	96	96	96
DTaP-IPV/HIB 2	41	90	92	92	92	92	92	92	90
DTaP-IPV/HIB 3	1	64	73	75	76	77	79	77	73

Table 2. Vaccination coverage percentages for DTap-IPV revaccination in birth cohorts 1993-2002

Vaccine	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993
DTaP-IPV revacc	65	79	80	81	84	84	83	81	80	79

Eastern Zealand and Eastern Jutland, [Table 3](#).

Table 3. DTap-IPV 3 vaccination coverage for birth cohorts 2004-2006 and DTap-IPV revaccination for birth cohorts 2002-2004, by part of country

Area	DTaP-IPV 3			DTaP-IPV revacc		
	2006	2005	2004	2002	2003	2004
Cph. City	62	67	71	58	76	78
Copenhagen suburbs	63	71	72	63	79	79
Zealand	68	74	75	64	80	79
Bornholm	72	81	79	66	82	83
Eastern						
Zealand W & S	73	77	77	68	82	82
Zealand	66	71	72	64	78	77
Funen	60	75	76	63	79	79
Southern						
Jutland	57	75	76	63	80	81
Western						
Jutland	66	73	77	69	79	80
Eastern						
Jutland	69	76	77	68	82	82
Northern						
Jutland	66	76	80	65	78	81
Total	64	73	75	65	79	80

Vaccination age

Approx. 75% of DTap-IPV/HIB 1 vaccines were administered to children below the age of 4 months, approx. 70% of DTap-IPV/HIB 2 vaccines were administered to children below the age of 6 months, and approx. 90% of all DTap-IPV/HIB 3 were given before the age of 15 months.

Nearly all DTap-IPV revaccinations, 96%, were given in accordance with recommendations at the age of 5 years.

Commentary

The proportion of children who had received a minimum of one or two DTap-IPV revaccinations remained largely unchanged compared with previous years. The aggregate result

shows, as in previous years, that too few children received all three primary vaccinations.

DTaP-IPV revaccination coverage receded slightly. Even though the recorded coverage is a minimal estimate, neither the proportion of children who received all three primary vaccinations nor the proportion who were DTap-IPV revaccinated is satisfactory.

Calculation of vaccination coverage is sensitive to any lacking registration of primary vaccinations as described in connection with the description of the calculation method above. Lacking registration of any primary vaccination for a child will cause an underestimation of the proportion of children who has received three primary vaccinations, while the proportion which has received 1 or 2 vaccinations will not be affected. It is therefore essential that all vaccinations are registered and that GPs use the correct codes at every vaccination.

In the new Danish Vaccination Register, EPI-NEWS 36/08, which is to comprise data on all given vaccinations, it is the intention also to support the registration of vaccinations given abroad and vaccinations previously given in Denmark, which have not already been registered. Consequently, the new register will render possible a validation of the childhood vaccination database which, however, is believed to contain high quality data. Approx. 25% of the children were given DTap-IPV/HIB 1 and 2 more than one month later than recommended, while approx. one in every ten children received the DTap-IPV/HIB 3 more than three months late. It is essential to comply with the recommended vaccination age, particularly to ensure immunity in infants.

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Individually notifiable diseases

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

Table 1	Week 36 2008	Cum. 2008 ¹⁾	Cum. 2007 ¹⁾
AIDS	0	22	37
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	1	0
Creutzfeldt-Jakob	0	2	7
Diphtheria	0	0	0
Food-borne diseases	26	552	429
of these, infected abroad	6	90	81
Gonorrhoea	13	270	257
Haemorrhagic fever	0	0	0
Hepatitis A	1	28	18
of these, infected abroad	0	11	8
Hepatitis B (acute)	1	14	19
Hepatitis B (chronic)	2	131	195
Hepatitis C (acute)	0	7	4
Hepatitis C (chronic)	3	288	263
HIV	4	160	193
Legionella pneumonia	1	78	71
of these, infected abroad	1	26	19
Leprosy	0	0	0
Leptospirosis	0	3	8
Measles	0	9	2
Meningococcal disease	0	38	54
of these, group B	0	16	30
of these, group C	0	11	17
of these, unspec. + other	0	11	7
Mumps	0	20	4
Neuroborreliosis	2	32	56
Ornithosis	0	2	7
Pertussis (children < 2 years)	2	79	53
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	2	2
Listeria monocytogenes	0	1	8
Streptococcus pneumoniae	0	66	82
Other aethiology	0	17	11
Unknown aethiology	0	16	12
Under registration	3	10	-
Rabies	0	0	0
Rubella (congenital)	1	2	0
Rubella (during pregnancy)	0	0	0
Shigellosis	2	55	133
of these, infected abroad	2	46	31
Syphilis	7	90	67
Tetanus	0	1	2
Tuberculosis	7	289	281
Typhoid/paratyphoid fever	1	23	15
of these, infected abroad	1	18	14
Typhus exanthematicus	0	0	2
VTEC/HUS	1	96	113
of these, infected abroad	1	32	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 36 2008	Cum. 2008 ²⁾	Cum. 2007 ²⁾
Bordetella pertussis (all ages)	7	137	138
Gonococci	5	255	255
of these, females	1	53	39
of these, males	4	202	216
Listeria monocytogenes	0	33	37
Mycoplasma pneumoniae			
Resp. specimens ³⁾	1	52	267
Serum specimens ⁴⁾	2	108	315
Streptococci ⁵⁾			
Group A streptococci	0	108	84
Group B streptococci	2	87	70
Group C streptococci	1	13	16
Group G streptococci	0	94	88
S. pneumoniae	3	666	730
Table 3	Week 34 2008	Cum. 2008 ²⁾	Cum. 2007 ²⁾
MRSA	28	421	396
Pathogenic int. bacteria ⁶⁾			
Campylobacter	33	1958	2612
S. Enteritidis	34	359	340
S. Typhimurium	56	1285	227
Other zoon. salmonella	12	654	490
Yersinia enterocolitica	2	195	183
Verocytotoxin- producing E. coli	2	96	110
Enteropathogenic E. coli	12	115	116
Enterotoxigenic E. coli	3	213	168

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