



## DTaP-IPV/HIB VACCINATION COVERAGE 2011

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Vaccination coverage was calculated on 16 April 2012 on the basis of person-identifiable data from the national Childhood Vaccination Database. There is a 2-3 month delay from a vaccination is administered until it is registered in the Childhood Vaccination Database.

The reported coverage provides a minimal estimate as only vaccinations performed in Denmark and by GPs are included. Furthermore, it has been demonstrated that under-reporting to the Childhood Vaccination Database does occur, EPI-NEWS 20/12.

### Method of calculation

Vaccination coverage was recorded using the administrative service codes indicated by GPs when settling the first, second and third DTaP-IPV/Hib vaccinations, EPI-NEWS 6/10 and 9/10.

In cases where GPs used the same vaccination code at all three vaccinations of the same child, the codes have automatically been changed to include the missing codes. The numerator is therefore e.g. the number of children born in 2010 who received the initial DTaP-IPV/Hib vaccination, and the denominator is the number of children from the birth year residing in Denmark when the data were analysed.

As in previous years, the codes were settled using one of the parent's civil registration number and subsequently ascribed to the child whose age corresponded to that recommended for the vaccination in question.

Any vaccination delay will facilitate an increase in vaccination coverage over time.

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

### DTaP-IPV/HIB 1, 2 & 3

Among the entire 2011 birth cohort, a total of 84% had received the first and 66% the second DTaP-IPV/Hib vaccination. The low coverage observed for these vaccinations was foreseeable as vaccination of this cohort had not been concluded at the calculation date.

In the birth cohorts 2002-2010, a total of 89-94% had received the first, 88-93% the second and 87-91% the third DTaP-IPV/Hib vaccination. Coverage showed a slightly decreasing trend from birth cohort 2002 to birth cohort 2005. As from birth cohort 2007, coverage for the two first vaccines has followed a slightly increasing trend.

**Table 1. Vaccination coverage percentages for primary DTaP-IPV/Hib vaccination in birth cohorts 2002-2011**

Vaccine	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002
DTaP-IPV/Hib 1	84	94	93	91	90	89	89	90	90	91
DTaP-IPV/Hib 2	66	93	92	91	89	88	88	89	90	91
DTaP-IPV/Hib 3	10	89	91	91	90	88	87	88	89	89

**Table 2. Vaccination coverage percentages for DTaP-IPV revaccination in birth cohorts 1996-2006**

Vaccine	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996
DTaP-IPV/ revacc.	72	81	83	84	83	82	81	81	84	84	82

### DTaP-IPV revaccination

The coverage for birth cohorts 1996-2005 was 81-84%; the lowest coverage corresponds to birth cohorts 1999 and 2000, the highest to cohorts 1997, 1998 and 2003. For the 2006 cohort, vaccination was expected not to have been concluded at the calculation date.

### National coverage

The DTaP-IPV/Hib 3 coverage for birth cohorts 2008-2010 and the DTaP-IPV revaccination coverage for birth cohorts 2004-2006 were slightly lower in Copenhagen City, i.e. the municipalities of Copenhagen, Frederiksberg, Tårnby and Dragør, than in the remaining parts of Denmark, [Table 3](#).

**Table 3. DTaP-IPV/Hib 3 vaccination coverage percentages for birth cohorts 2008-2010 and DTaP-IPV revaccination for birth cohorts 2004-2006, by area**

Area	DTaP-IPV/Hib 3			DTaP/IPV re.		
	2010	2009	2008	2006	2005	2004
CPH city	88	90	88	68	80	81
CPH subs North	88	90	89	72	81	83
Zealand	88	90	90	72	82	82
Bornholm	88	92	92	73	80	82
Zeal. W & S	89	92	91	74	81	85
Zealand	87	90	90	68	79	80
Funen	89	90	91	72	82	82
South Jutl	90	91	91	73	82	84
West Jutl.	90	92	91	77	84	83
East Jutl.	91	93	92	76	83	85
North Jutl	89	92	92	72	81	83
Total	89	91	91	72	81	83

Coverage data at municipal level are available at [www.ssi.dk/data](http://www.ssi.dk/data) as figures and map views. DTaP-IPV/Hib3 data for birth cohorts 2008-2010 show that coverage was at its lowest in the municipalities of Lolland (74-84%), Samsø (82-86%) and Ishøj (83-

87%), while the highest coverages were seen in Rebild (93-95%), Hjørring (92-95%) and Herning (92-94%). With regard to DTaP-IPV/Hib revaccination, coverage was at its lowest in the municipalities of Lolland (49-71%), Fanø (58-70%) and Vordingborg (67-75%), while the highest coverages were recorded in Ballerup (79-90%), Skanderborg (83-89%) and Egedal (81-87%).

### Commentary

Since birth cohort 2007, a slight increase has been observed in the DTaP-IPV/Hib vaccination coverage at 3 and 5 months. The increase is limited, but consistent. However, nearly 10% of the birth cohorts do not receive one or more of the three primary DTaP-IPV/Hib vaccinations. In contrast, DTaP-IPV revaccination coverage has not increased, but remains stable at a level corresponding to revaccination of only four in every five children at the age of five years. Even though these figures are minimal estimates, the DTaP-IPV revaccination coverage is not satisfactory. The calculation of coverage at the municipal level is sensitive to municipal size, but does, nevertheless, reveal a considerable intermunicipal variation of nearly 20 percentage points for DTaP-IPV/Hib 3 and as much as 24 percentage points for DTaP-IPV revaccination.

Previous studies have demonstrated that vaccination coverage is lower among children of very young mothers and mothers > 30 years, children of single parents, children who have many siblings and children of non-Danish origin, EPI-NEWS 20/11. Health personnel should be particularly attentive to increasing vaccination coverage in these groups. (P.H. Andersen, L.K. Knudsen, P. Valentiner-Branth, Dept. of Infectious Disease Epidemiology)