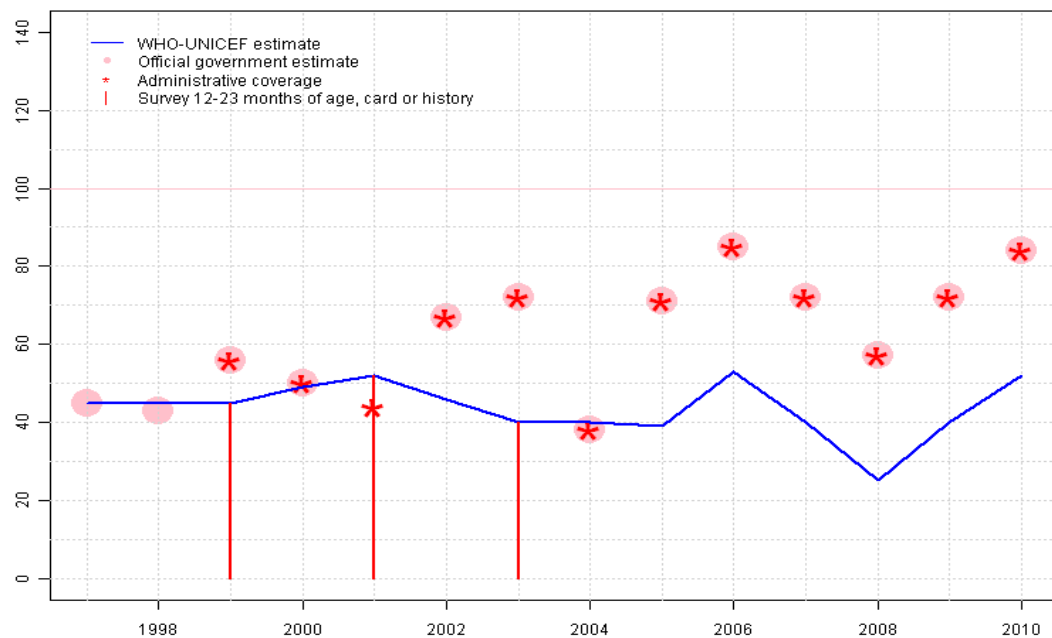


Chad - BCG

TCD - BCG



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	45	45	45	49	52	46	40	40	39	53	40	25	40	52
Official	45	43	56	50	NA	67	72	38	71	85	72	57	72	84
Administrative	NA	NA	56	50	44	67	72	38	71	85	72	57	72	84
Survey	NA	NA	45	NA	52	NA	40	NA	NA	NA	NA	NA	NA	NA

Description:

1997: Legacy estimate.

1998: Estimate based on interpolation between 1997 and 1999. The decline in coverage across antigens is unexplained.

1999: Estimate based on survey results. 45 percent survey results does not support reported data of 56 percent.

2000: Estimate based on interpolation between 1999 and 2001. Fluctuating and inconsistent data suggest poor reporting.

2001: Estimate based on survey results. Reported data inconsistent with survey results Estimate not based on reported data. Estimate based on survey results to maintain consistency with other vaccines.

2002: Estimate based on interpolation between 2001 and 2003. Fluctuating and inconsistent data suggest poor reporting.

2003: Estimate based on survey results. 40 percent survey results does not support reported data of 72 percent.

2004: Estimate based on interpolation between 2003 and 2005. Reported data not accepted due to a decline from 72 percent to 38 percent with a subsequent increase to 71 percent. Current estimate of 40 percent changed from previous revision value of 20 percent.

2005: Reported data 71 percent calibrated to 2003 levels. Current estimate of 39 percent changed from previous revision value of 40 percent.

2006: Reported data 85 percent calibrated to 2003 levels. Estimate follows reported data. Current estimate of 53 percent changed from previous revision value of 40 percent.

2007: Reported data 72 percent calibrated to 2003 levels. Estimate follows reported data.

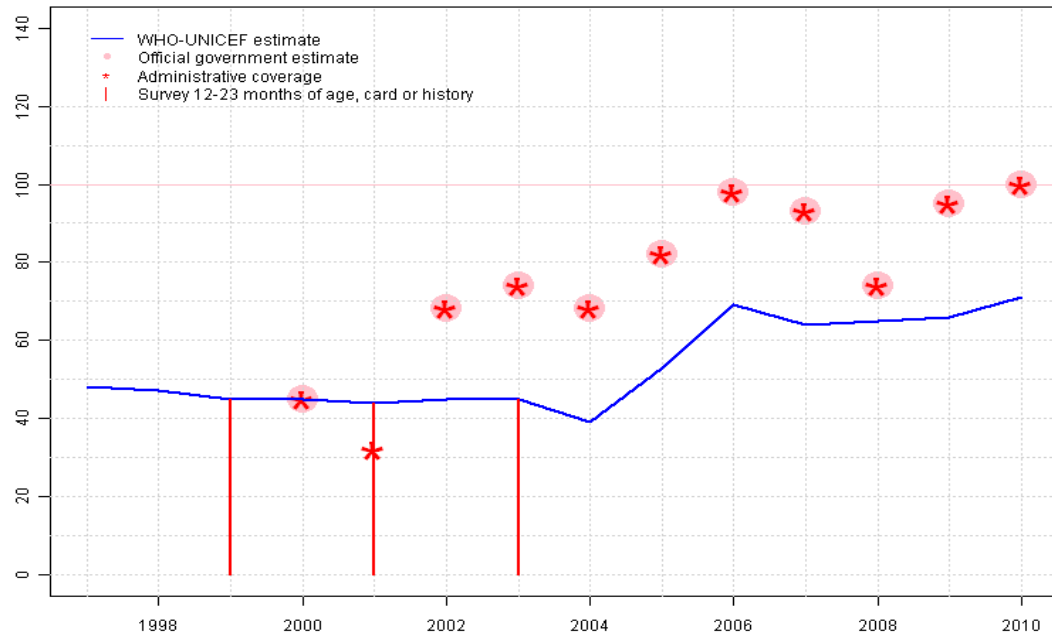
2008: Reported data 57 percent calibrated to 2003 levels. Apparent decline in coverage partially attributable to increase in national estimate of the target population. Estimate follows reported data. Current estimate of 25 percent changed from previous revision value of 40 percent.

2009: Reported data 72 percent calibrated to 2003 levels. Estimate follows reported data.

2010: Reported data 84 percent calibrated to 2003 levels. Estimate follows reported data.

Chad - DTP1

TCD - DTP1



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	48	47	45	45	44	45	45	39	53	69	64	65	66	71
Official	NA	NA	NA	45	NA	68	74	68	82	98	93	74	95	100
Administrative	NA	NA	NA	45	32	68	74	68	82	98	93	74	95	100
Survey	NA	NA	45	NA	44	NA	45	NA	NA	NA	NA	NA	NA	NA

Description:

1997: Legacy estimate.

1998: Estimate based on interpolation between 1997 and 1999.

1999: No accepted reported data. Reported data of 45 percent estimated by extrapolating from 2000 supports trend in reported data. 45 percent survey results

2000: Estimate based on interpolation between 1999 and 2001. Fluctuating and inconsistent data suggest poor reporting.

2001: Estimate based on survey results. Reported data inconsistent with survey results Reported data not accepted due to a decline from 45 percent to 32 percent with a subsequent increase to 68 percent.

2002: Estimate based on interpolation between 2001 and 2003. Fluctuating and inconsistent data suggest poor reporting.

2003: Estimate based on survey results. Reported data inconsistent with survey results

2004: Reported data 68 percent calibrated to 2003 levels. Current estimate of 39 percent changed from previous revision value of 45 percent.

2005: Reported data 82 percent calibrated to 2003 levels. Current estimate of 53 percent changed from previous revision value of 45 percent.

2006: Reported data 98 percent calibrated to 2003 levels. Current estimate of 69 percent changed from previous revision value of 45 percent.

2007: Reported data 93 percent calibrated to 2003 levels. Current estimate of 64 percent changed from previous revision value of 45 percent.

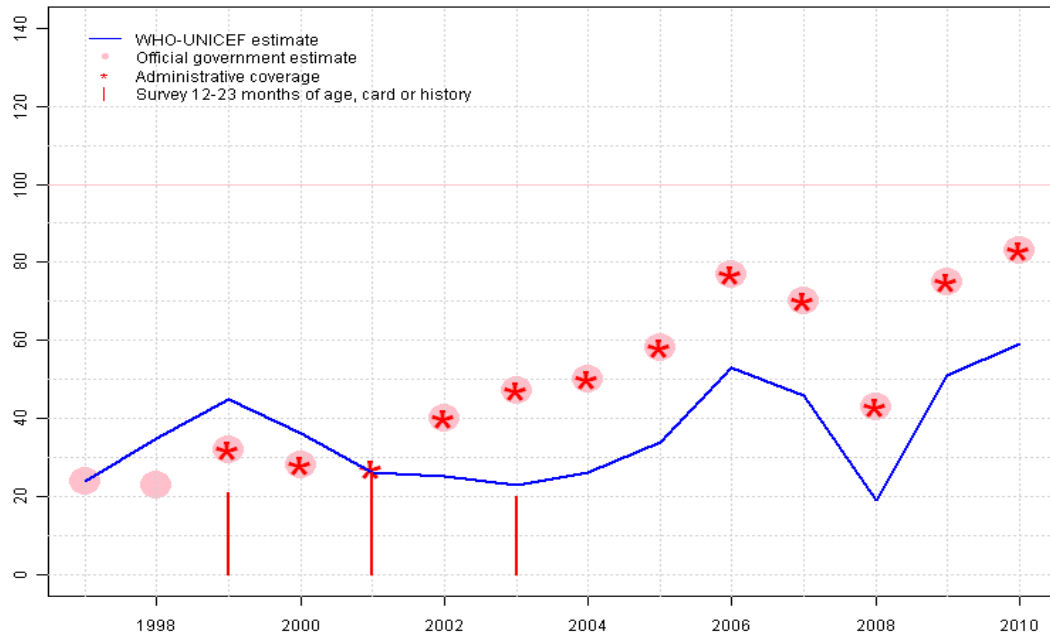
2008: Estimate based on interpolation between 2007 and 2009. Reported data not accepted due to a decline from 93 percent to 74 percent with a subsequent increase to 95 percent. Apparent decline in coverage partially attributable to increase in national estimate of the target population. Current estimate of 65 percent changed from previous revision value of 45 percent.

2009: Reported data 95 percent calibrated to 2003 levels. Current estimate of 66 percent changed from previous revision value of 45 percent.

2010: Reported data 100 percent calibrated to 2003 levels.

Chad - DTP3

TCD - DTP3



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	24	35	45	36	26	25	23	26	34	53	46	19	51	59
Official	24	23	32	28	NA	40	47	50	58	77	70	43	75	83
Administrative	NA	NA	32	28	27	40	47	50	58	77	70	43	75	83
Survey	NA	NA	21	NA	26	NA	20	NA	NA	NA	NA	NA	NA	NA

Description:

1997: Legacy estimate.

1998: Estimate based on interpolation between 1997 and 1999. Fluctuating and inconsistent data suggest poor reporting. Current estimate of 35 percent changed from previous revision value of 25 percent.

1999: Estimate based on survey results. 45 percent survey results does not support reported data of 32 percent. Survey results of 21 percent modified for recall bias to 45 percent based on 1st dose card or history coverage of 45 percent, 1st dose card only coverage of 10 percent and 3d dose card only coverage of 10 percent. Fluctuating and inconsistent data suggest poor reporting. Current estimate of 45 percent changed from previous revision value of 25 percent.

2000: Estimate based on interpolation between 1999 and 2001. Fluctuating and inconsistent data suggest poor reporting. Current estimate of 36 percent changed from previous revision value of 26 percent.

2001: Estimate based on survey results. Reported data inconsistent with survey results

2002: Estimate based on interpolation between 2001 and 2003. Fluctuating and inconsistent data suggest poor reporting. Survey results likely include doses administered during campaigns. Survey results inconsistent with results for other vaccines.

2003: Estimate based on survey results. 23 percent survey results does not support reported data of 47 percent. Survey results of 20 percent modified for recall bias to 23 percent based on 1st dose card or history coverage of 45 percent, 1st dose card only coverage of 24 percent and 3d dose card only coverage of 12 percent.

2004: Reported data 50 percent calibrated to 2003 levels. Current estimate of 26 percent changed from previous revision value of 23 percent.

2005: Reported data 58 percent calibrated to 2003 levels. Current estimate of 34 percent changed from previous revision value of 23 percent.

2006: Reported data 77 percent calibrated to 2003 levels. Current estimate of 53 percent changed from previous revision value of 23 percent.

2007: Reported data 70 percent calibrated to 2003 levels. Current estimate of 46 percent changed from previous revision value of 23 percent.

2008: Estimate reflects a 21 percent decline from previous year in the number of children vaccinated due to vaccine shortage. Reported data not accepted due to a decline from 70 percent to 43 percent with a subsequent increase to 75 percent. Apparent decline in coverage partially attributable to increase in national estimate of the target population. Current estimate of 19 percent changed from previous revision value of 23 percent.

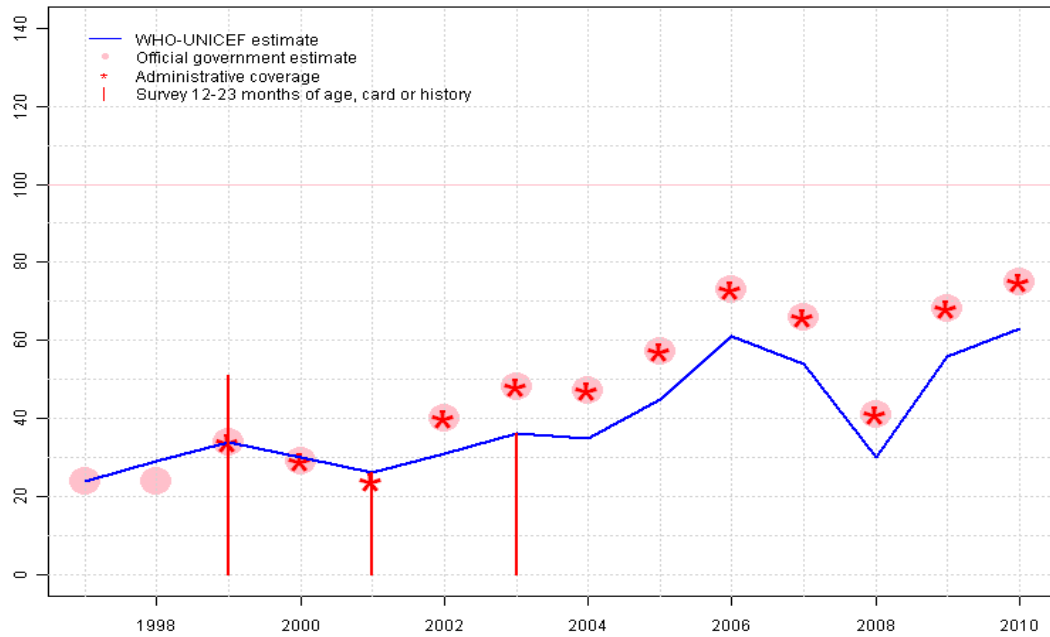
2009: Reported data 75 percent calibrated to 2003 levels. Current estimate of 51 percent changed from previous revision value of 23 percent.

Chad - DTP3

2010: Reported data 83 percent calibrated to 2003 levels.

Chad - Pol3

TCD - Pol3



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	24	29	34	30	26	31	36	35	45	61	54	30	56	63
Official	24	24	34	29	NA	40	48	47	57	73	66	41	68	75
Administrative	NA	NA	34	29	24	40	48	47	57	73	66	41	68	75
Survey	NA	NA	51	NA	26	NA	36	NA	NA	NA	NA	NA	NA	NA

Description:

1997: Legacy estimate.

1998: Estimate based on interpolation between 1997 and 1999. Fluctuating and inconsistent data suggest poor reporting. Current estimate of 29 percent changed from previous revision value of 25 percent.

1999: Estimate based on reported data. Estimate not based on reported data. Fluctuating and inconsistent data across antigens and survey results suggest poor reporting. Survey not accepted. Survey results most likely contain immunizations administered during polio campaigns. Fluctuating and inconsistent data suggest poor reporting. Current estimate of 34 percent changed from previous revision value of 25 percent.

2000: Estimate based on interpolation between 1999 and 2001. Fluctuating and inconsistent data suggest poor reporting. Current estimate of 30 percent changed from previous revision value of 26 percent.

2001: Estimate based on survey results. Reported data inconsistent with survey results

2002: Estimate based on interpolation between 2001 and 2003. Fluctuating and inconsistent data suggest poor reporting.

2003: Reported data inconsistent with survey results. Estimate based on survey results. Recall bias not considered; adjusted results are inconsistent with results for other vaccines. Survey results of 36 percent modified for recall bias to 41 percent based on 1st dose card or history coverage of 78 percent, 1st dose card only coverage of 23 percent and 3d dose card only coverage of 12 percent.

2004: Reported data 47 percent calibrated to 2003 levels. Current estimate of 35 percent changed from previous revision value of 36 percent.

2005: Reported data 57 percent calibrated to 2003 levels. Current estimate of 45 percent changed from previous revision value of 36 percent.

2006: Reported data 73 percent calibrated to 2003 levels. Current estimate of 61 percent changed from previous revision value of 36 percent.

2007: Reported data 66 percent calibrated to 2003 levels. Current estimate of 54 percent changed from previous revision value of 36 percent.

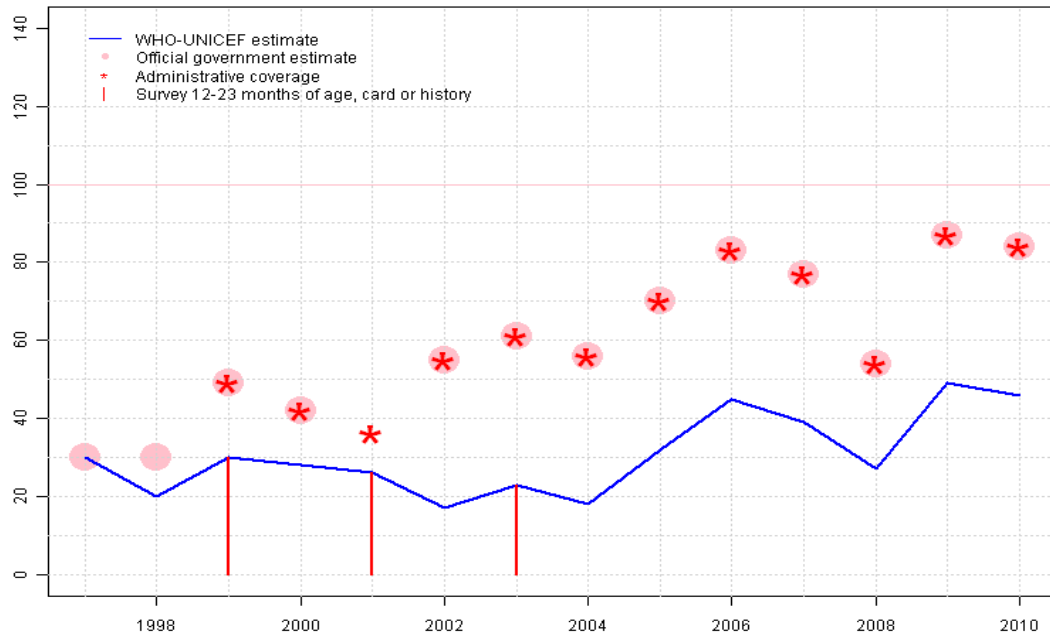
2008: Estimate reflects a 20 percent decline from previous year in the number of children vaccinated due to vaccine shortage. Reported data not accepted due to a decline from 66 percent to 41 percent with a subsequent increase to 68 percent. Apparent decline in coverage partially attributable to increase in national estimate of the target population. Current estimate of 30 percent changed from previous revision value of 36 percent.

2009: Reported data 68 percent calibrated to 2003 levels. Current estimate of 56 percent changed from previous revision value of 36 percent.

2010: Reported data 75 percent calibrated to 2003 levels.

Chad - MCV

TCD - MCV



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	30	20	30	28	26	17	23	18	32	45	39	27	49	46
Official	30	30	49	42	NA	55	61	56	70	83	77	54	87	84
Administrative	NA	NA	49	42	36	55	61	56	70	83	77	54	87	84
Survey	NA	NA	30	NA	26	NA	23	NA	NA	NA	NA	NA	NA	NA

Description:

- 1997: Legacy estimate.
- 1998: Reported data calibrated to 1997 and 1999 levels. Current estimate of 20 percent changed from previous revision value of 30 percent.
- 1999: Estimate based on survey results. 30 percent survey results does not support reported data of 49 percent.
- 2000: Estimate based on interpolation between 1999 and 2001. Fluctuating and inconsistent data suggest poor reporting.
- 2001: Estimate based on survey results. Reported data inconsistent with survey results Estimate not based on reported data. Estimate based on survey results to maintain consistency with other vaccines.
- 2002: Reported data calibrated to 2001 and 2003 levels. Current estimate of 17 percent changed from previous revision value of 25 percent.
- 2003: Estimate based on survey results. 23 percent survey results does not support reported data of 61 percent.
- 2004: Reported data 56 percent calibrated to 2003 levels. Current estimate of 18 percent changed from previous revision value of 23 percent.
- 2005: Reported data 70 percent calibrated to 2003 levels. Current estimate of 32 percent changed from previous revision value of 23 percent.
- 2006: Reported data 83 percent calibrated to 2003 levels. Current estimate of 45 percent changed from previous revision value of 23 percent.
- 2007: Reported data 77 percent calibrated to 2003 levels. Current estimate of 39 percent changed from previous revision value of 23 percent.
- 2008: Estimate reflects a 11 percent decline from previous year in the number of children vaccinated due to vaccine shortage. Reported data not accepted due to a decline from 77 percent to 54 percent with a subsequent increase to 87 percent. Apparent decline in coverage partially attributable to increase in national estimate of the target population. Current estimate of 27 percent changed from previous revision value of 23 percent.
- 2009: Reported data 87 percent calibrated to 2003 levels. Current estimate of 49 percent changed from previous revision value of 23 percent.
- 2010: Reported data 84 percent calibrated to 2003 levels.

Chad - HepB3

TCD - HepB3



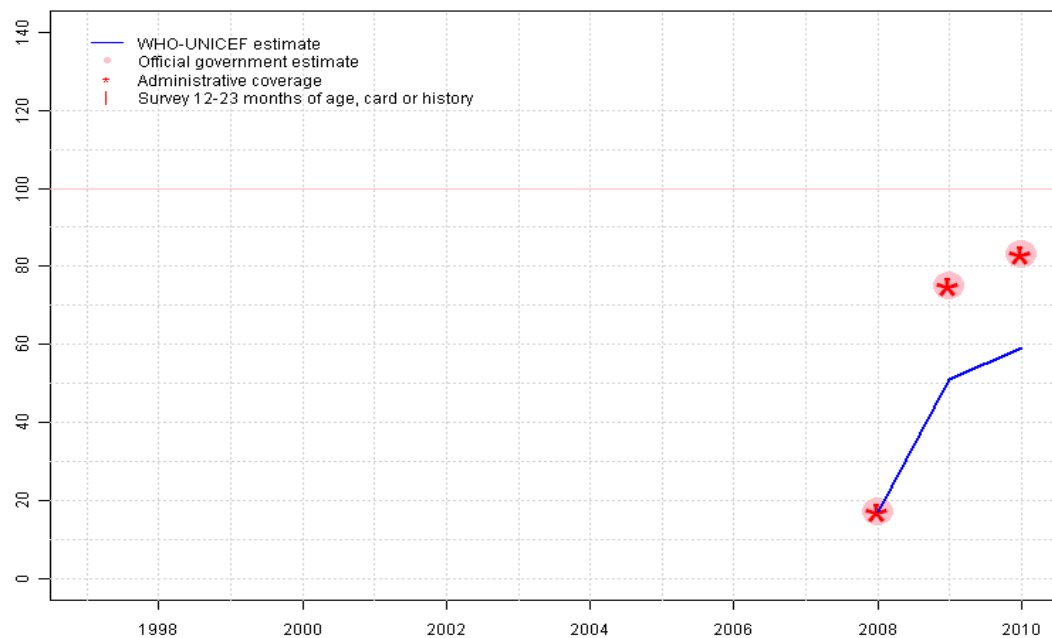
Description:

- 2008: Estimate is based on the reported data. Apparent decline in coverage partially attributable to increase in national estimate of the target population. HepB introduced in 2008 Vaccine presentation is DTP-HepB-Hib.
- 2009: Estimate is based on estimated DTP3 coverage. Current estimate of 51 percent changed from previous revision value of 22 percent.
- 2010: Estimate is based on estimated DTP3 coverage.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	51	59
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	75	83
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	75	83
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Chad - Hib3

TCD - Hib3



Description:

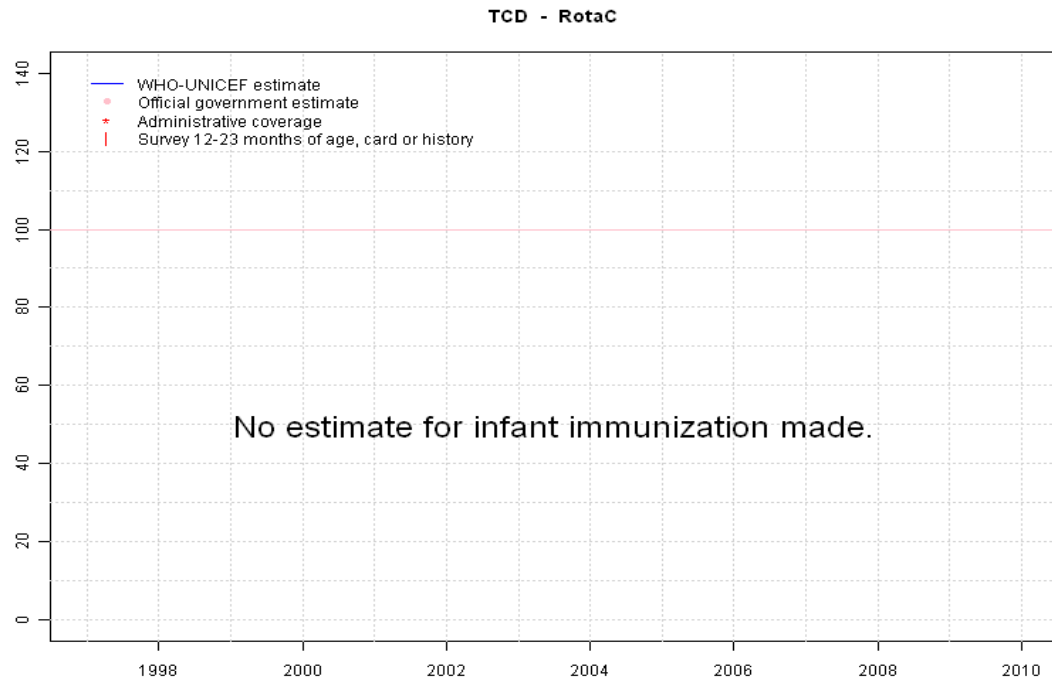
2008: Estimate is based on the reported data. Apparent decline in coverage partially attributable to increase in national estimate of the target population. Hib introduced in 2008 Vaccine presentation is DTP-HepB-Hib.

2009: Estimate is based on estimated DTP3 coverage. Current estimate of 51 percent changed from previous revision value of 22 percent.

2010: Estimate is based on estimated DTP3 coverage.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	51	59
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	75	83
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	17	75	83
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

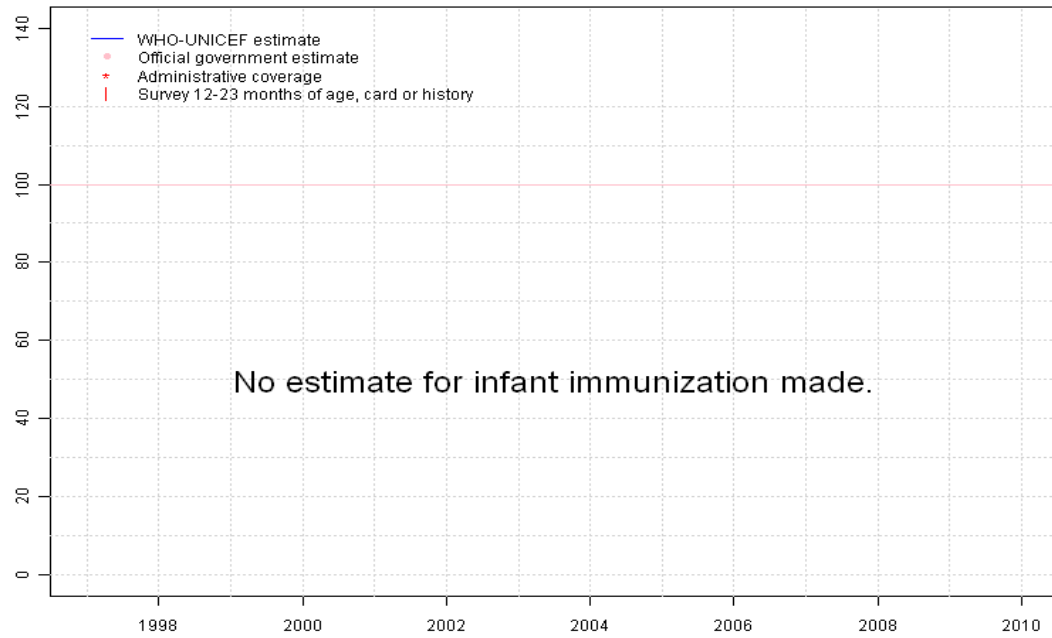
Chad - RotaC



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Chad - PcV3

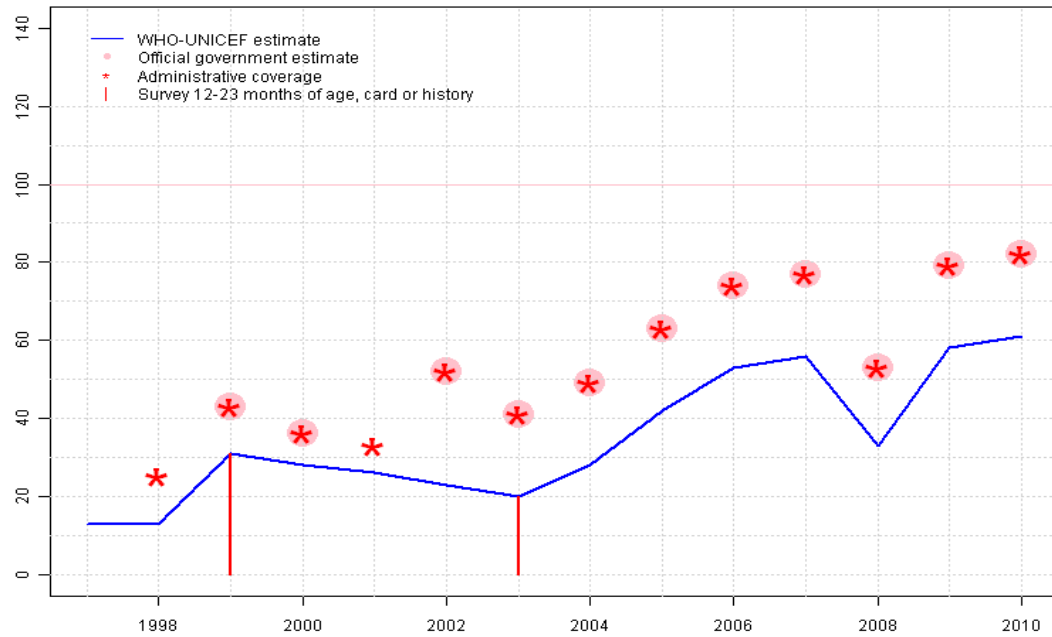
TCD - PcV3



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Chad - YFV

TCD - YFV



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	13	13	31	28	26	23	20	28	42	53	56	33	58	61
Official	NA	NA	43	36	NA	52	41	49	63	74	77	53	79	82
Administrative	NA	25	43	36	33	52	41	49	63	74	77	53	79	82
Survey	NA	NA	31	NA	NA	NA	20	NA	NA	NA	NA	NA	NA	NA

Description:

- 1997: Estimate based on extrapolation from 1998 value of 13 percent. Current estimate of 13 percent changed from previous revision value of 31 percent.
- 1998: Reported data 25 percent calibrated to 1999 levels. Current estimate of 13 percent changed from previous revision value of 31 percent.
- 1999: Estimate based on survey results. 31 percent survey results does not support reported data of 43 percent.
- 2000: Estimate based on interpolation between 1999 and 2003. Fluctuating and inconsistent data suggest poor reporting.
- 2001: Estimate based on interpolation between 1999 and 2003. Fluctuating and inconsistent data suggest poor reporting.
- 2002: Estimate based on interpolation between 1999 and 2003. Reported data not accepted due to an increase from 33 percent to 52 percent with a subsequent decrease to 41 percent. Fluctuating and inconsistent data suggest poor reporting.
- 2003: Estimate based on survey results. 20 percent survey results does not support reported data of 41 percent.
- 2004: Reported data 49 percent calibrated to 2003 levels. Current estimate of 28 percent changed from previous revision value of 20 percent.
- 2005: Reported data 63 percent calibrated to 2003 levels. Current estimate of 42 percent changed from previous revision value of 20 percent.
- 2006: Reported data 74 percent calibrated to 2003 levels. Current estimate of 53 percent changed from previous revision value of 20 percent.
- 2007: Reported data 77 percent calibrated to 2003 levels. Current estimate of 56 percent changed from previous revision value of 20 percent.
- 2008: Estimate reflects a 12 percent decline from previous year in the number of children vaccinated due to vaccine shortage. Reported data not accepted due to a decline from 77 percent to 53 percent with a subsequent increase to 79 percent. Apparent decline in coverage partially attributable to increase in national estimate of the target population. Current estimate of 33 percent changed from previous revision value of 20 percent.
- 2009: Reported data 79 percent calibrated to 2003 levels. Current estimate of 58 percent changed from previous revision value of 20 percent.
- 2010: Reported data 82 percent calibrated to 2003 levels.

Chad - survey details

2003 L'Enquête Démographique et de Santé au Tchad, 2004

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	History	20	12-23 m	941	24
BCG	C or H <12 months	36	12-23 m	941	24
BCG	Card or history	40	12-23 m	941	24
BCG	Card	20	12-23 m	941	24
DTP1	C or H <12 months	42	12-23 m	941	24
DTP1	Card	24	12-23 m	941	24
DTP1	Card or history	45	12-23 m	941	24
DTP1	History	21	12-23 m	941	24
DTP3	C or H <12 months	16	12-23 m	941	24
DTP3	Card	12	12-23 m	941	24
DTP3	Card or history	20	12-23 m	941	24
DTP3	History	8	12-23 m	941	24
MCV	History	9	12-23 m	941	24
MCV	C or H <12 months	15	12-23 m	941	24
MCV	Card	14	12-23 m	941	24
MCV	Card or history	23	12-23 m	941	24
Pol1	Card	23	12-23 m	941	24
Pol1	Card or history	78	12-23 m	941	24
Pol1	History	55	12-23 m	941	24
Pol1	C or H <12 months	73	12-23 m	941	24
Pol3	C or H <12 months	28	12-23 m	941	24
Pol3	Card	12	12-23 m	941	24
Pol3	Card or history	36	12-23 m	941	24
Pol3	History	23	12-23 m	941	24
YFV	C or H <12 months	14	12-23 m	941	24
YFV	Card	14	12-23 m	941	24
YFV	Card or history	20	12-23 m	941	24
YFV	History	7	12-23 m	941	24

2001 République du Tchad, Revue du Programme Elargi de Vaccination, 2002

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	52	12-23 m	3159	39
DTP1	Card or History	44	12-23 m	3159	39

DTP3	Card or History	26	12-23 m	3159	39
MCV	Card or History	26	12-23 m	3159	39
Pol1	Card or History	45	12-23 m	3159	39
Pol3	Card or History	26	12-23 m	3159	39

1999 République du Tchad, Enquête de grappes à indicateurs multiples, Rapport complet, 2000

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	10	12-23 m	873	23
BCG	Card or History	45	12-23 m	873	23
BCG	History	36	12-23 m	873	23
BCG	C or H <12 months	42	12-23 m	873	23
DTP1	Card or History	45	12-23 m	873	23
DTP1	History	35	12-23 m	873	23
DTP1	Card	10	12-23 m	873	23
DTP1	C or H <12 months	43	12-23 m	873	23
DTP3	Card	10	12-23 m	873	23
DTP3	Card or History	21	12-23 m	873	23
DTP3	History	10	12-23 m	873	23
DTP3	C or H <12 months	17	12-23 m	873	23
MCV	History	24	12-23 m	873	23
MCV	C or H <12 months	24	12-23 m	873	23
MCV	Card or History	30	12-23 m	873	23
MCV	Card	6	12-23 m	873	23
Pol1	C or H <12 months	86	12-23 m	873	23
Pol1	Card	2	12-23 m	873	23
Pol1	Card or History	90	12-23 m	873	23
Pol1	History	88	12-23 m	873	23
Pol3	C or H <12 months	42	12-23 m	873	23
Pol3	Card	6	12-23 m	873	23
Pol3	Card or History	51	12-23 m	873	23
Pol3	History	45	12-23 m	873	23
YFV	C or H <12 months	27	12-23 m	873	23
YFV	Card	7	12-23 m	873	23
YFV	Card or History	31	12-23 m	873	23
YFV	History	24	12-23 m	873	23

Chad - survey details

Further information and estimates for 1980-1996 are available at:

http://www.childinfo.org/immunization_countryreports.html

http://www.who.int/immunization_monitoring/routine/immunization_coverage/en/index4.html

Chad

WHO/UNICEF Estimates of Protection at Birth (PAB) against tetanus

In countries where tetanus is recommended for girls and women coverage is usually reported as "TT2+", i.e. the proportion of (pregnant) women who have received their second or superior TT dose in a given year. TT2 + coverage, however, can under-represent the actual proportion of births that are protected against tetanus as it does not include women who have previously received protective doses, women who received one dose without documentation of previous doses, and women who received doses in TT (or Td) supplemental immunization activities (SIA). In addition, girls who have received DTP in their childhood and are entering childbearing age, may be protected with TT booster doses.

WHO and UNICEF have developed a model that takes into account the above scenarios, and calculates the proportion of births in a given year that can be considered as having been protected against tetanus - "Protection at Birth".

In this model, annual cohorts of women are followed from infancy through their life. A proportion receive DTP in infancy (estimated based on the WHO-UNICEF estimates of DTP3 coverage). In addition some of these women also receive TT through routine services when they are pregnant and may also receive TT during SIAs. The model also adjusts reported data, taking into account coverage patterns in other years, and/or results available through surveys. The duration of protection is then calculated, based on WHO estimates of the duration of protection by doses ever received. The proportion of births that are protected against tetanus as a result of maternal immunization reflects the tetanus immunization received by the mother throughout her life rather than simply the TT immunizations received during the current pregnancy.

Year	PAB coverage estimate (%)
1997	49
1998	47
1999	43
2000	39
2001	37
2002	48
2003	60
2004	61
2005	61
2006	60
2007	60
2008	58
2009	60
2010	60

¹ This model is described in: Griffiths U., Wolfson L., Quddus A., Younus M., Hafiz R.. Incremental cost-effectiveness of supplementary immunization activities to prevent neo-natal tetanus in Pakistan. Bulletin of the World Health Organization 2004; 82:643-651.