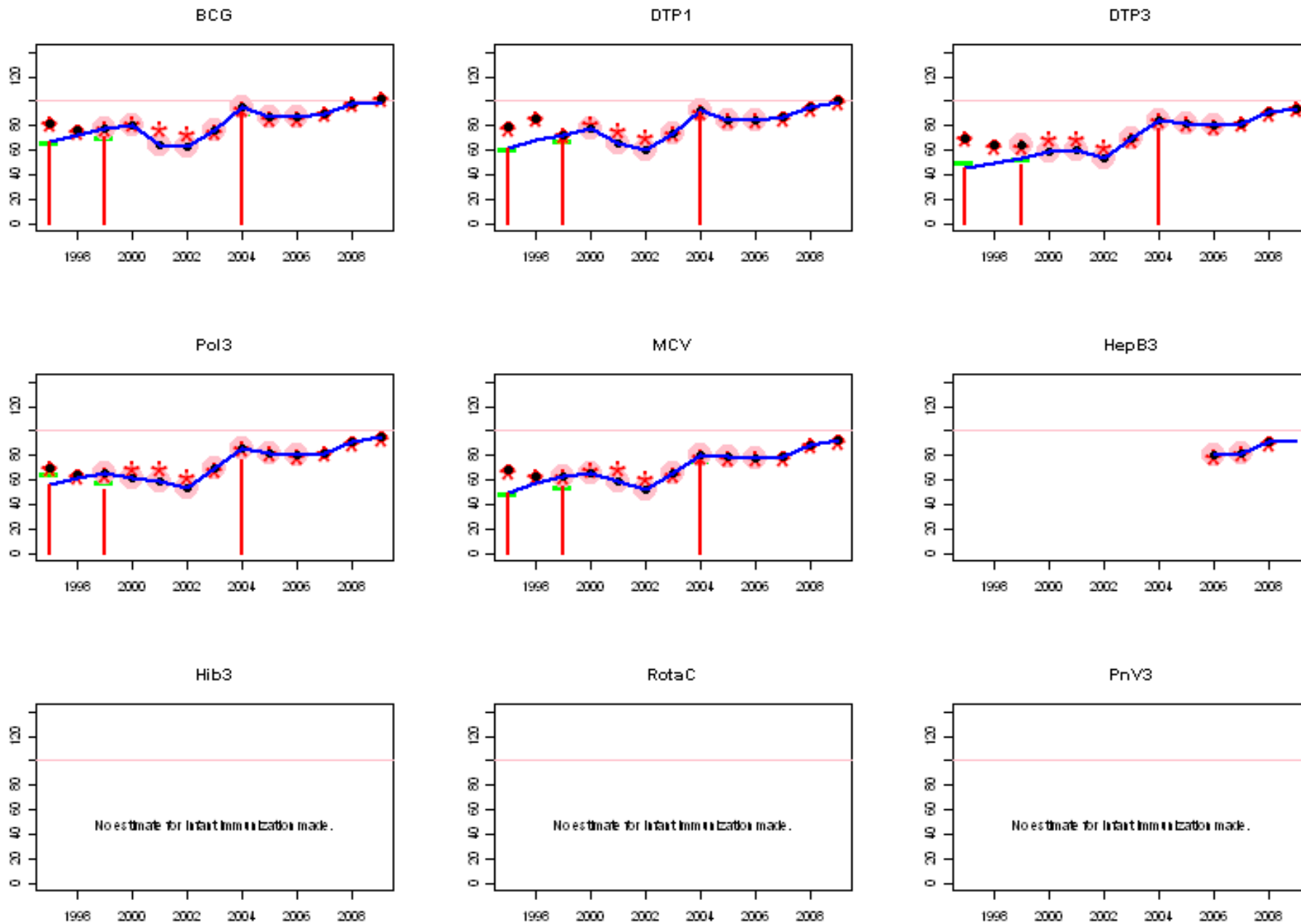
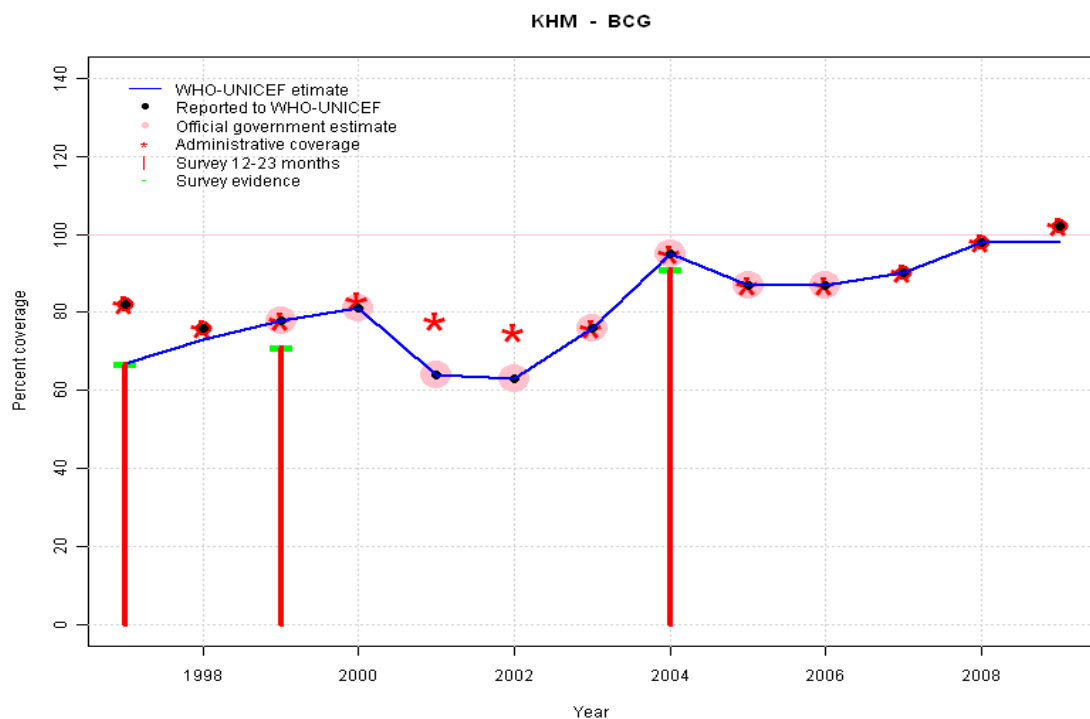


Cambodia: WHO and UNICEF estimates of immunization coverage, 1997 - 2009



Cambodia - BCG

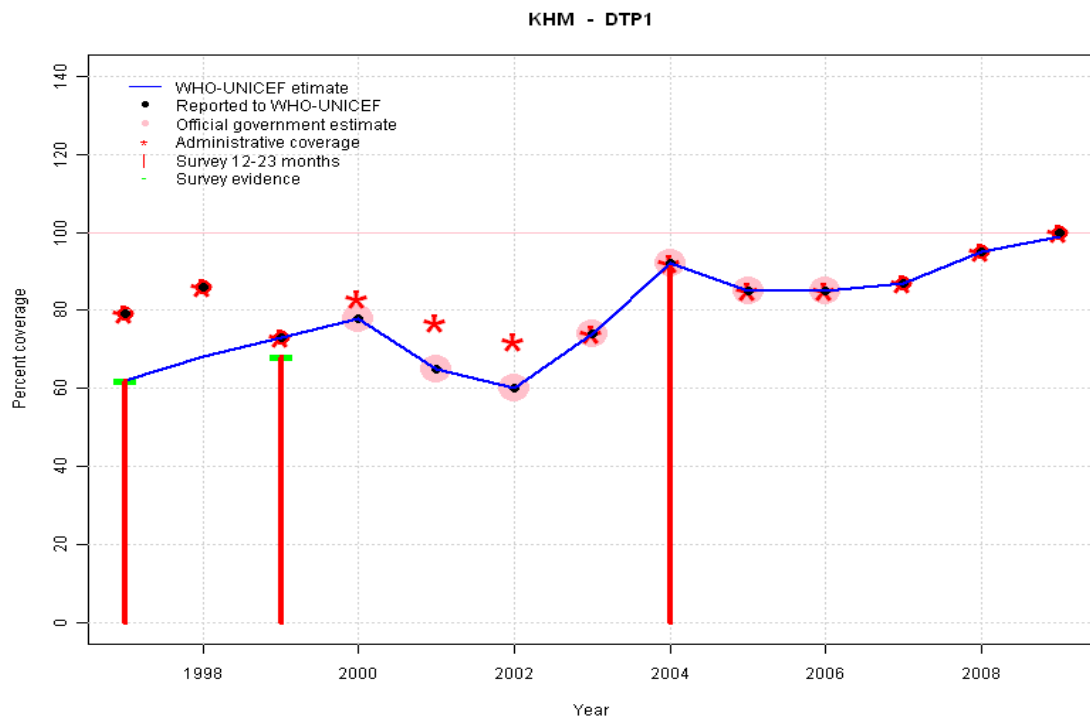


Description:

- 1997: Legacy estimate.
- 1998: Estimate interpolated between 1997 and 1999 estimates.
- 1999: Estimate based on reported data (78 percent) confirmed by survey (71 percent).
- 2000: Estimate based on reported data.
- 2001: Estimate based on reported data.
- 2002: Estimate based on reported data.
- 2003: Estimate based on reported data.
- 2004: Estimate based on reported data (95 percent) confirmed by survey (91 percent).
- 2005: Estimate based on reported data.
- 2006: Estimate based on reported data.
- 2007: Estimate based on reported data.
- 2008: Estimate based on reported data.
- 2009: Estimate based on trend in reported data. Missing or ignored reported value estimated by extrapolation from 2008 reported value of 98 percent. 2009 reported data (102 percent) ignored; greater than 100 percent.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	67	73	78	81	64	63	76	95	87	87	90	98	98
Reported	82	76	78	81	64	63	76	95	87	87	90	98	102
Official	NA	NA	78	81	64	63	76	95	87	87	NA	NA	NA
Administrative	82	76	78	83	78	75	76	95	87	87	90	98	102
Survey	67	NA	71	NA	NA	NA	NA	91	NA	NA	NA	NA	NA

Cambodia - DTP1

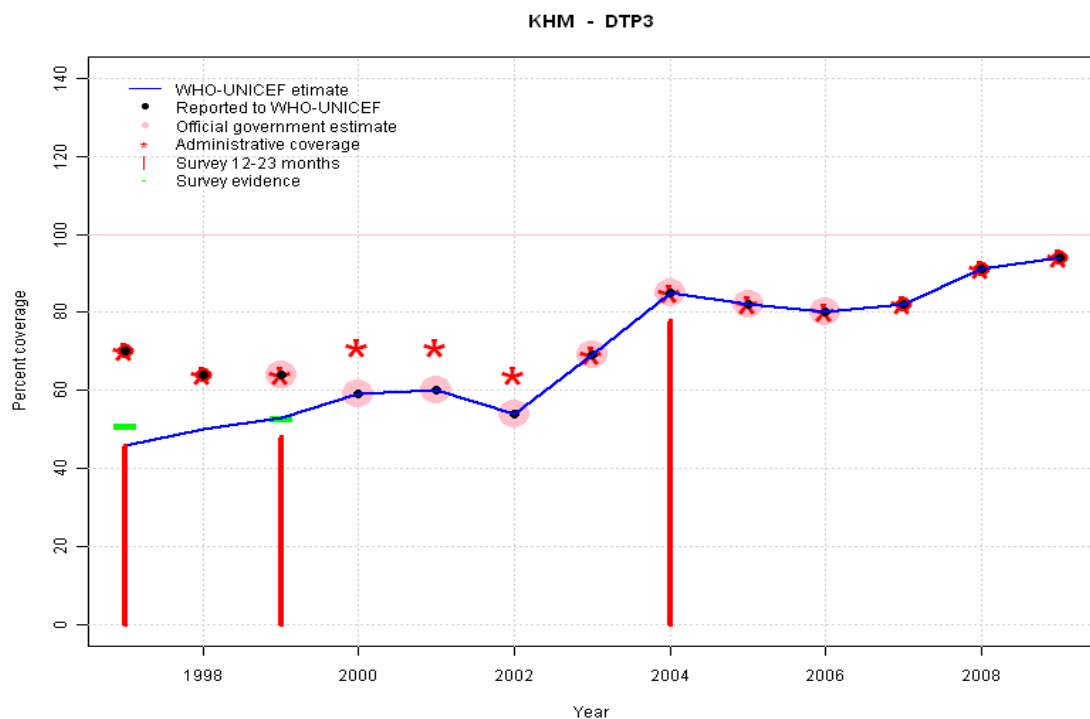


Description:

- 1997: Legacy estimate.
- 1998: Estimate interpolated between 1997 and 1999 estimates.
- 1999: Estimate based on reported data (73 percent) confirmed by survey (68 percent).
- 2000: Estimate based on reported data.
- 2001: Estimate based on reported data.
- 2002: Estimate based on reported data.
- 2003: Estimate based on reported data.
- 2004: Estimate based on reported data (92 percent) confirmed by survey (91 percent).
- 2005: Estimate based on reported data.
- 2006: Estimate based on reported data.
- 2007: Estimate based on reported data.
- 2008: Estimate based on reported data.
- 2009: Estimate based on reported data.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	62	68	73	78	65	60	74	92	85	85	87	95	99
Reported	79	86	73	78	65	60	74	92	85	85	87	95	100
Official	NA	NA	NA	78	65	60	74	92	85	85	NA	NA	NA
Administrative	79	86	73	83	77	72	74	92	85	85	87	95	100
Survey	62	NA	68	NA	NA	NA	NA	91	NA	NA	NA	NA	NA

Cambodia - DTP3



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	46	50	53	59	60	54	69	85	82	80	82	91	94
Reported	70	64	64	59	60	54	69	85	82	80	82	91	94
Official	NA	NA	64	59	60	54	69	85	82	80	NA	NA	NA
Administrative	70	64	64	71	71	64	69	85	82	80	82	91	94
Survey	51	NA	53	NA	NA	NA	NA	84	NA	NA	NA	NA	NA

Description:

1997: Legacy estimate. Survey results (46 percent) adjusted for recall bias to 51 percent based on first dose card or history coverage (62 percent) and documented drop-out between first (33 percent) and third (27 percent) doses.

1998: Estimate interpolated between 1997 and 1999 estimates.

1999: Estimate based on survey results. Reported data (64 percent) not consistent with survey results (53 percent). Survey results (48 percent) adjusted for recall bias to 53 percent based on first dose card or history coverage (68 percent) and documented drop-out between first (46 percent) and third (36 percent) doses.

2000: Estimate based on administrative data adjusted for accuracy by the Ministry of Health following a data quality audit.

2001: Estimate based on reported data.

2002: Estimate based on reported data.

2003: Estimate based on reported data. 2003 reported data confirmed by data quality audit.

2004: Estimate based on reported data (85 percent) confirmed by survey (84 percent). Survey results (78 percent) adjusted for recall bias to 84 percent based on first dose card or history coverage (91 percent) and documented drop-out between first (66 percent) and third (61 percent) doses. In 2004 the Ministry of Health and the Ministry of Planning revised the estimated number of births resulting in an increased proportion of children vaccinated.

2005: Estimate based on reported data.

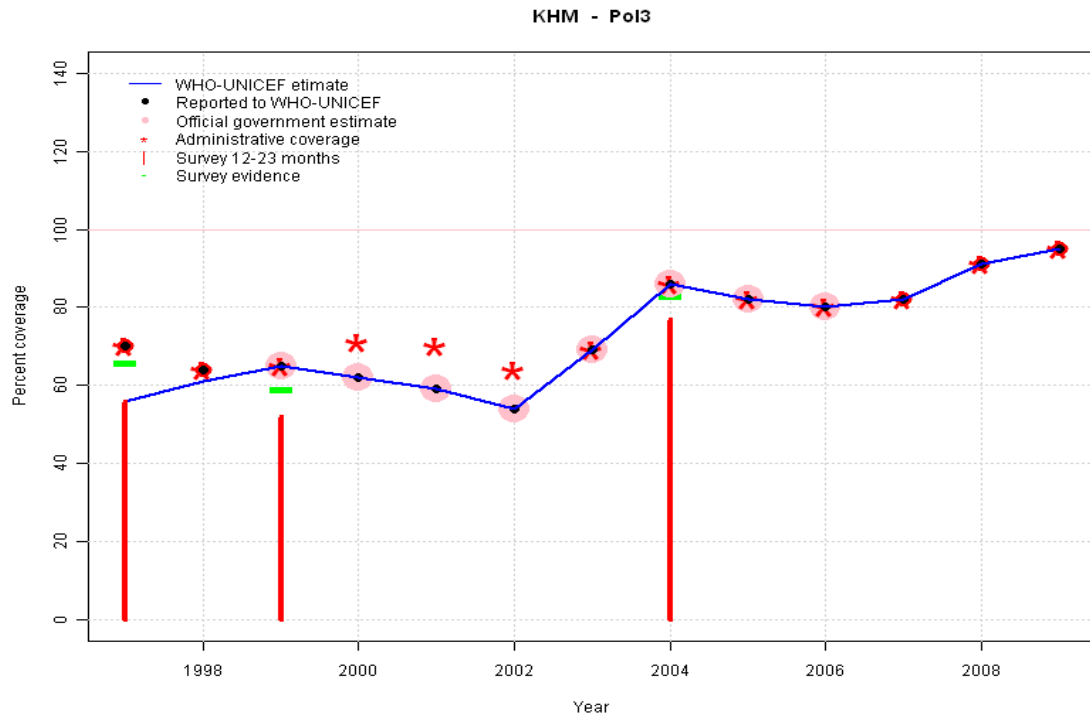
2006: Estimate based on reported data.

2007: Estimate based on reported data.

2008: Estimate based on reported data. Increase in 2008 due to change in the denominator based on the General Population Census, 2008.

2009: Estimate based on reported data.

Cambodia - Pol3



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	56	61	65	62	59	54	69	86	82	80	82	91	95
Reported	70	64	65	62	59	54	69	86	82	80	82	91	95
Official	NA	NA	65	62	59	54	69	86	82	80	NA	NA	NA
Administrative	70	64	65	71	70	64	69	86	82	80	82	91	95
Survey	66	NA	59	NA	NA	NA	NA	83	NA	NA	NA	NA	NA

Description:

1997: Legacy estimate. Survey results (56 percent) adjusted for recall bias to 66 percent based on first dose card or history coverage (81 percent) and documented drop-out between first (33 percent) and third (27 percent) doses.

1998: Estimate interpolated between 1997 and 1999 estimates.

1999: Estimate based on reported data (65 percent) confirmed by survey (59 percent). Survey results (52 percent) adjusted for recall bias to 59 percent based on first dose card or history coverage (75 percent) and documented drop-out between first (46 percent) and third (36 percent) doses.

2000: Estimate based on reported data.

2001: Estimate based on reported data.

2002: Estimate based on reported data.

2003: Estimate based on reported data. 2003 reported data confirmed by data quality audit.

2004: Estimate based on reported data (86 percent) confirmed by survey (83 percent). Survey results (77 percent) adjusted for recall bias to 83 percent based on first dose card or history coverage (91 percent) and documented drop-out between first (66 percent) and third (60 percent) doses. In 2004 the Ministry of Health and the Ministry of Planning revised the estimated number of births resulting in an increased proportion of children vaccinated.

2005: Estimate based on reported data.

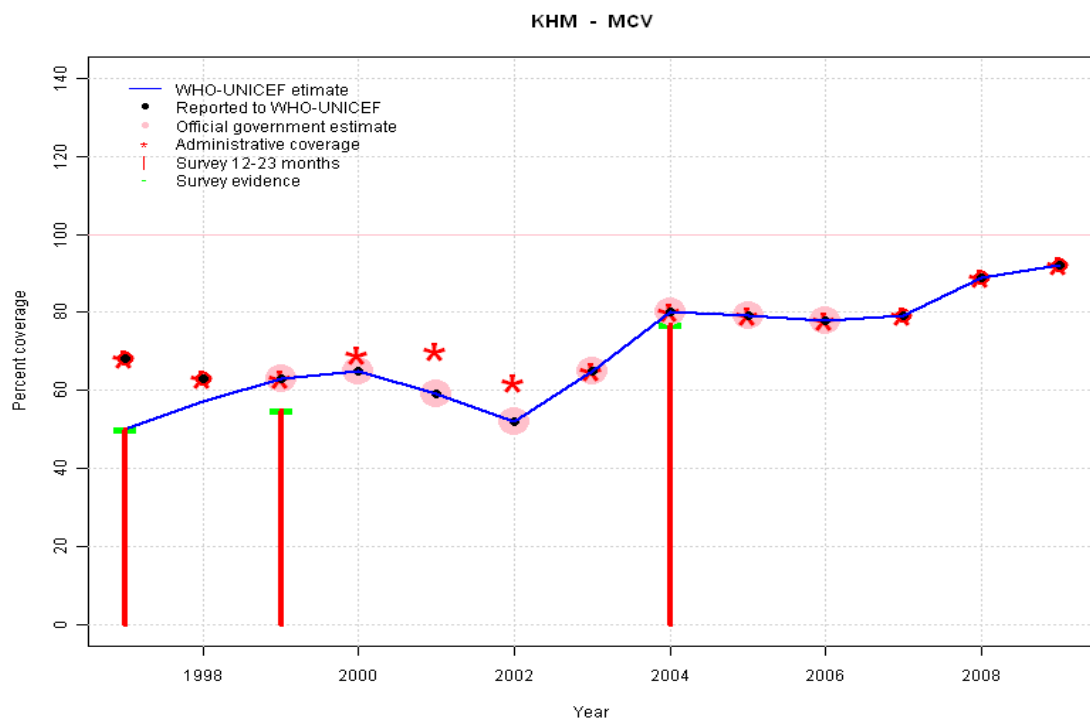
2006: Estimate based on reported data.

2007: Estimate based on reported data.

2008: Estimate based on reported data. Increase in 2008 due to change in the denominator based on the General Population Census, 2008.

2009: Estimate based on reported data.

Cambodia - MCV



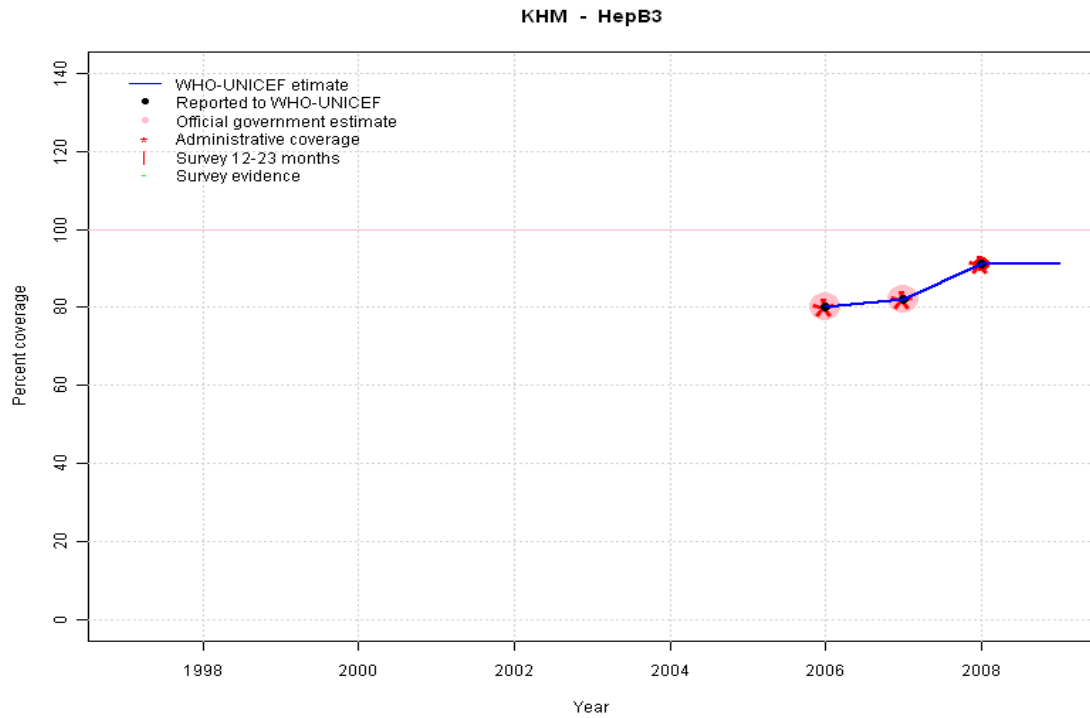
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	50	57	63	65	59	52	65	80	79	78	79	89	92
Reported	68	63	63	65	59	52	65	80	79	78	79	89	92
Official	NA	NA	63	65	59	52	65	80	79	78	NA	NA	NA
Administrative	68	63	63	69	70	62	65	80	79	78	79	89	92
Survey	50	NA	55	NA	NA	NA	NA	77	NA	NA	NA	NA	NA

Description:

- 1997: Legacy estimate.
- 1998: Estimate interpolated between 1997 and 1999 estimates.
- 1999: Estimate based on reported data (63 percent) confirmed by survey (55 percent).
- 2000: Estimate based on reported data.
- 2001: Estimate based on reported data.
- 2002: Estimate based on reported data.
- 2003: Estimate based on reported data. 2003 reported data confirmed by data quality audit.
- 2004: Estimate based on reported data (80 percent) confirmed by survey (77 percent). In 2004 the Ministry of Health and the Ministry of Planning revised the estimated number of births resulting in an increased proportion of children vaccinated.
- 2005: Estimate based on reported data.
- 2006: Estimate based on reported data.
- 2007: Estimate based on reported data.
- 2008: Estimate based on reported data. Increase in 2008 due to change in the denominator based on the General Population Census, 2008. Increase is consistent with other vaccines.
- 2009: Estimate based on reported data.

Cambodia - HepB3

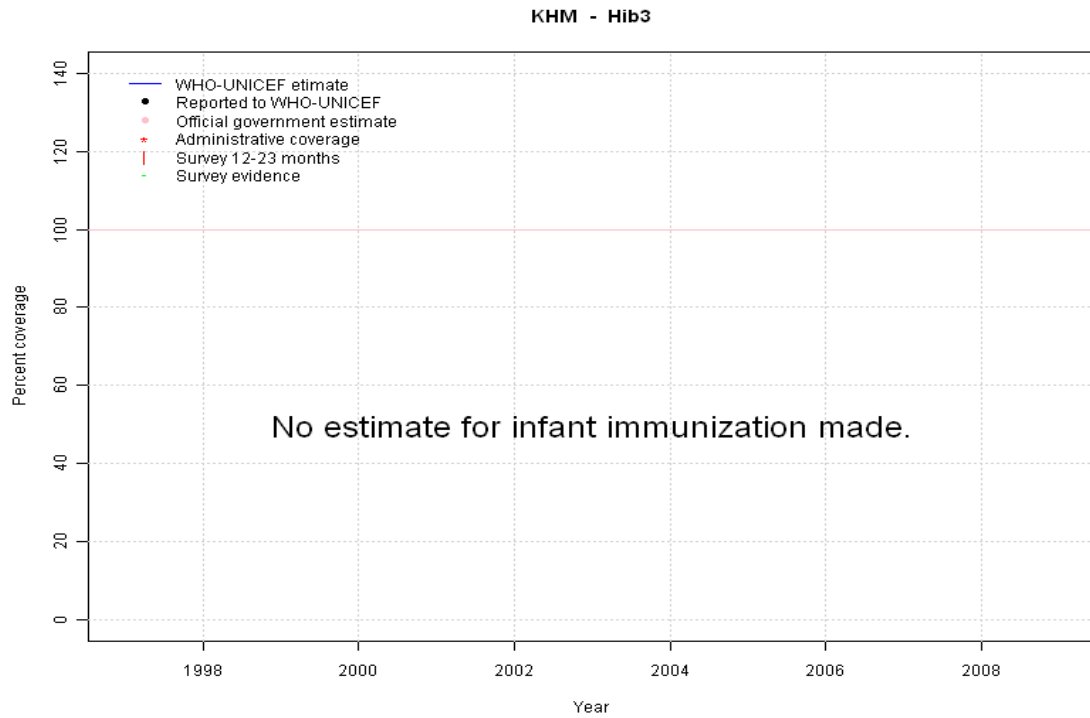
Description:



- 2006: Estimate based on reported data. HepB introduced in 2006
- 2007: Estimate based on reported data.
- 2008: Estimate based on reported data. Increase in 2008 due to change in the denominator based on the General Population Census, 2008.
- 2009: Estimate based on reported data. Missing or ignored reported value estimated by extrapolation from 2008 reported value of 91 percent.

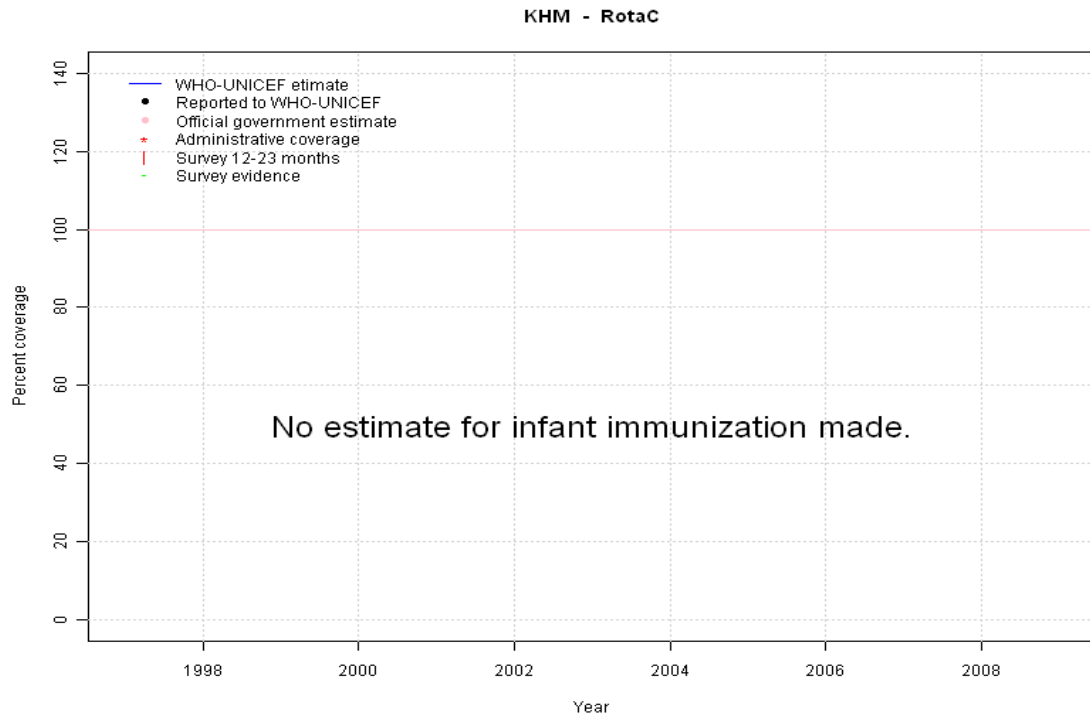
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	80	82	91	91
Reported	NA	NA	NA	NA	NA	NA	NA	NA	NA	80	82	91	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	80	82	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	80	82	91	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Cambodia - Hib3



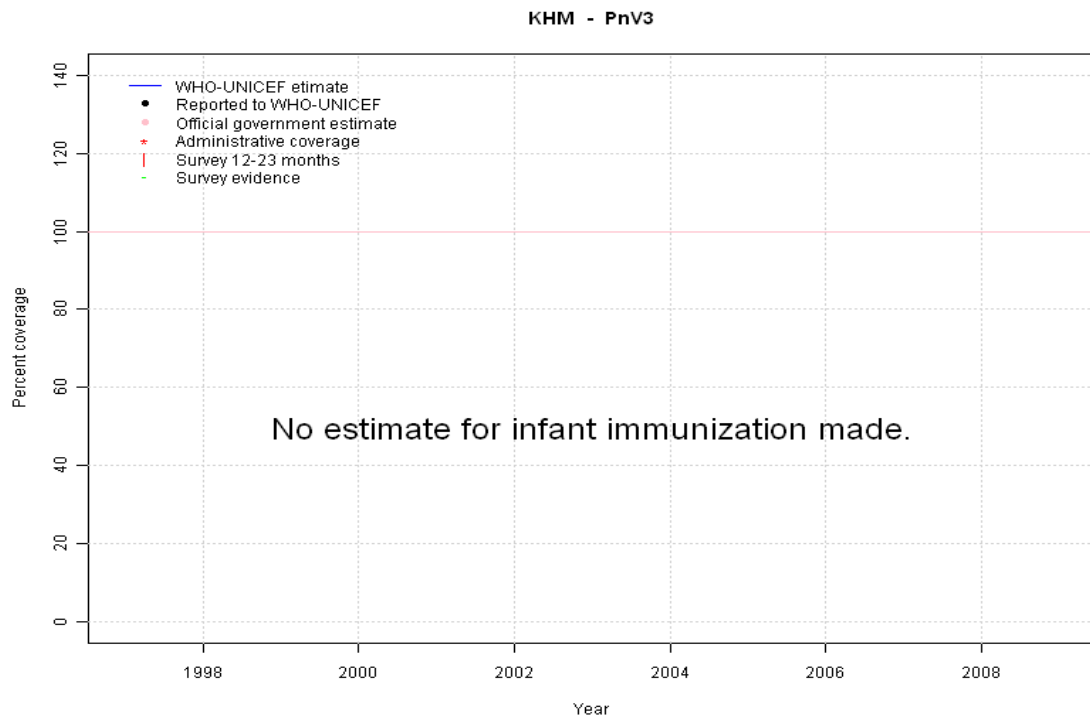
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Reported	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA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

Cambodia - RotaC



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

Cambodia - PnV3



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

Cambodia - survey details

2004 Cambodia Demographic and Health Survey 2005

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	91	12-23 m	1517	67
BCG	Card	66	12-23 m	1517	67
BCG	Card or History	91	12-23 m	1517	67
BCG	History	26	12-23 m	1517	67
DTP1	Card or History	91	12-23 m	1517	67
DTP1	Card	66	12-23 m	1517	67
DTP1	History	24	12-23 m	1517	67
DTP1	C or H <12 months	90	12-23 m	1517	67
DTP3	History	17	12-23 m	1517	67
DTP3	Card or History	78	12-23 m	1517	67
DTP3	Card	61	12-23 m	1517	67
DTP3	C or H <12 months	76	12-23 m	1517	67
MCV	History	21	12-23 m	1517	67
MCV	Card or History	77	12-23 m	1517	67
MCV	Card	56	12-23 m	1517	67
MCV	C or H <12 months	70	12-23 m	1517	67
Pol1	History	24	12-23 m	1517	67
Pol1	Card	66	12-23 m	1517	67
Pol1	Card or History	91	12-23 m	1517	67
Pol1	C or H <12 months	90	12-23 m	1517	67
Pol3	History	17	12-23 m	1517	67
Pol3	Card or History	77	12-23 m	1517	67
Pol3	C or H <12 months	74	12-23 m	1517	67
Pol3	Card	60	12-23 m	1517	67

1999 Cambodia Demographic and Health Survey 2000, 2001

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	66	12-23 m	1253	48
BCG	Card	46	12-23 m	1253	48
BCG	Card or History	71	12-23 m	1253	48
BCG	History	26	12-23 m	1253	48
DTP1	C or H <12 months	63	12-23 m	1253	48
DTP1	Card	46	12-23 m	1253	48
DTP1	Card or History	68	12-23 m	1253	48

DTP1	History	22	12-23 m	1253	48
DTP3	Card or History	48	12-23 m	1253	48
DTP3	C or H <12 months	43	12-23 m	1253	48
DTP3	Card	36	12-23 m	1253	48
DTP3	History	13	12-23 m	1253	48
MCV	Card	36	12-23 m	1253	48
MCV	Card or History	55	12-23 m	1253	48
MCV	History	19	12-23 m	1253	48
MCV	C or H <12 months	41	12-23 m	1253	48
Pol1	History	29	12-23 m	1253	48
Pol1	C or H <12 months	69	12-23 m	1253	48
Pol1	Card	46	12-23 m	1253	48
Pol1	Card or History	75	12-23 m	1253	48
Pol3	History	16	12-23 m	1253	48
Pol3	Card or History	52	12-23 m	1253	48
Pol3	C or H <12 months	45	12-23 m	1253	48
Pol3	Card	36	12-23 m	1253	48

1997 National Health Survey Cambodia 1998, 1999

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	33	12-23 m	804	0
BCG	Card or History	67	12-23 m	804	0
BCG	History	33	12-23 m	804	0
DTP1	History	29	12-23 m	804	0
DTP1	Card or History	62	12-23 m	804	0
DTP1	C or H <12 months	61	12-23 m	804	0
DTP1	Card	33	12-23 m	804	0
DTP3	C or H <12 months	44	12-23 m	804	0
DTP3	History	20	12-23 m	804	0
DTP3	Card or History	46	12-23 m	804	0
DTP3	Card	27	12-23 m	804	0
MCV	History	24	12-23 m	804	0
MCV	Card or History	50	12-23 m	804	0
MCV	Card	26	12-23 m	804	0
MCV	C or H <12 months	45	12-23 m	804	0
Pol1	History	48	12-23 m	804	0
Pol1	C or H <12 months	80	12-23 m	804	0
Pol1	Card or History	81	12-23 m	804	0

Cambodia - survey details

Pol1	Card	33	12-23 m	804	0
Pol3	C or H <12 months	54	12-23 m	804	0
Pol3	Card	27	12-23 m	804	0

Pol3	Card or History	56	12-23 m	804	0
Pol3	History	30	12-23 m	804	0

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

Cambodia

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	46
1998	47
1999	50
2000	58
2001	62
2002	64
2003	71
2004	79
2005	81
2006	84
2007	87
2008	87
2009	91

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.