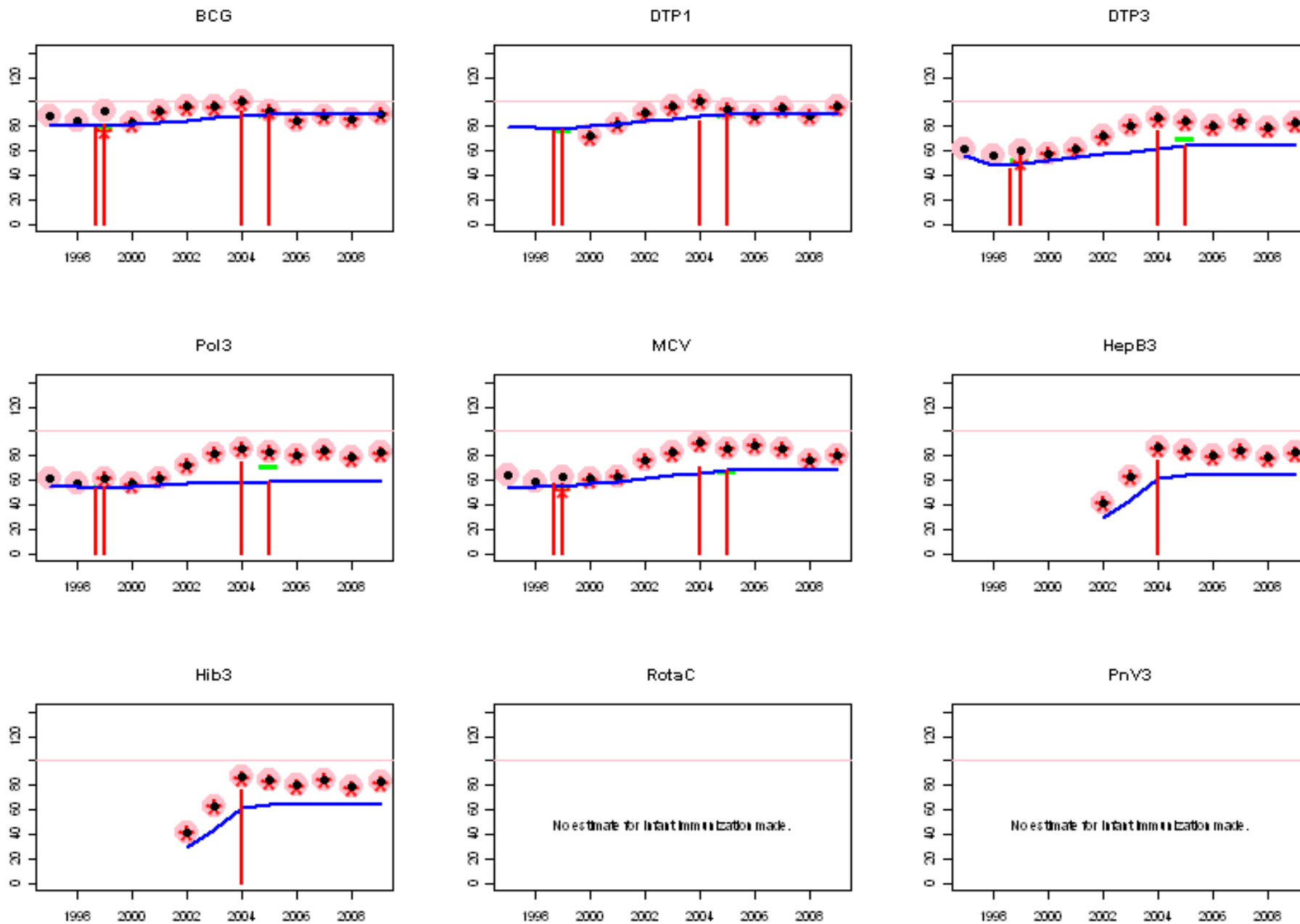
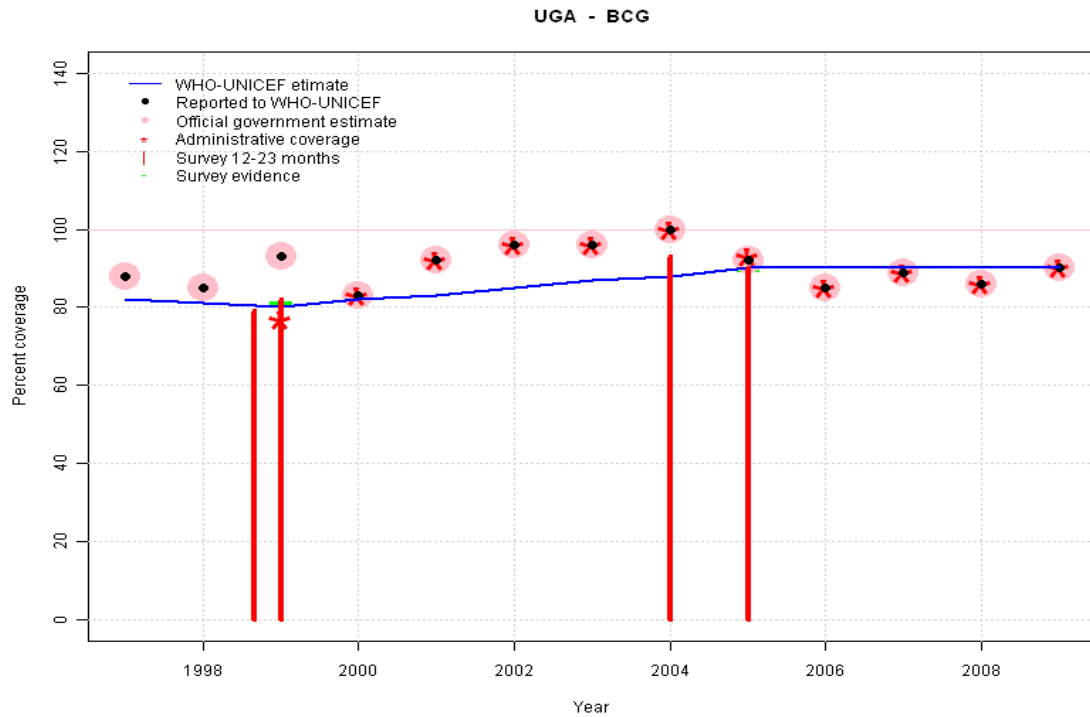


Uganda: WHO and UNICEF estimates of immunization coverage, 1997 - 2009



# Uganda - BCG



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	82	81	80	82	83	85	87	88	90	90	90	90	90
Reported	88	85	93	83	92	96	96	100	92	85	89	86	90
Official	88	85	93	83	92	96	96	100	92	85	89	86	90
Administrative	NA	NA	77	83	92	96	96	100	93	85	89	86	90
Survey	NA	NA	81	NA	NA	NA	NA	NA	90	NA	NA	NA	NA

## Description:

1997: Legacy estimate.

1998: Estimate interpolated between 1997 and 1999 estimates.

1999: Nationally reported data may overestimate coverage due to an underestimate of size of the target population.

2000: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2001: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2002: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2003: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2004: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting. Survey results of 93 percent with sample size 232 ignored; sample size less than 300.

2005: Data Quality Self Assessment identified signification reporting problems. Nationally reported data may overestimate coverage due to an underestimate of size of the target population.

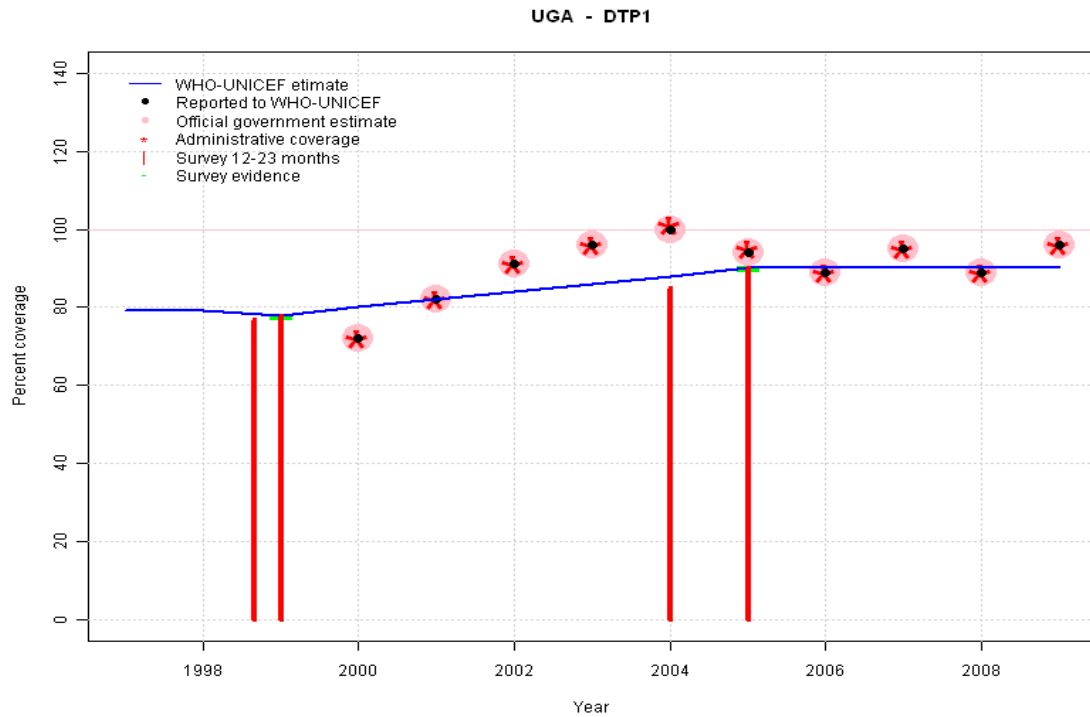
2006: Estimate extrapolated from 2005 level (90 percent).

2007: Estimate extrapolated from 2005 level (90 percent).

2008: Estimate extrapolated from 2005 level (90 percent).

2009: Estimate extrapolated from 2005 level (90 percent).

# Uganda - DTP1



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	79	79	78	80	82	84	86	88	90	90	90	90	90
Reported	NA	NA	NA	72	82	91	96	100	94	89	95	89	96
Official	NA	NA	NA	72	82	91	96	100	94	89	95	89	96
Administrative	NA	NA	NA	72	82	91	96	101	95	89	95	89	96
Survey	NA	NA	78	NA	NA	NA	NA	NA	90	NA	NA	NA	NA

## Description:

1997: Legacy estimate.

1998: Estimate interpolated between 1997 and 1999 estimates.

1999: Nationally reported data may overestimate coverage due to an underestimate of size of the target population.

2000: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2001: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2002: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2003: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting. Shortage of DTP-HepB-Hib combination vaccine. DTP trivalent vaccine available.

2004: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting. Survey results of 85 percent with sample size 232 ignored; sample size less than 300.

2005: Data Quality Self Assessment identified signification reporting problems. Nationally reported data may overestimate coverage due to an underestimate of size of the target population.

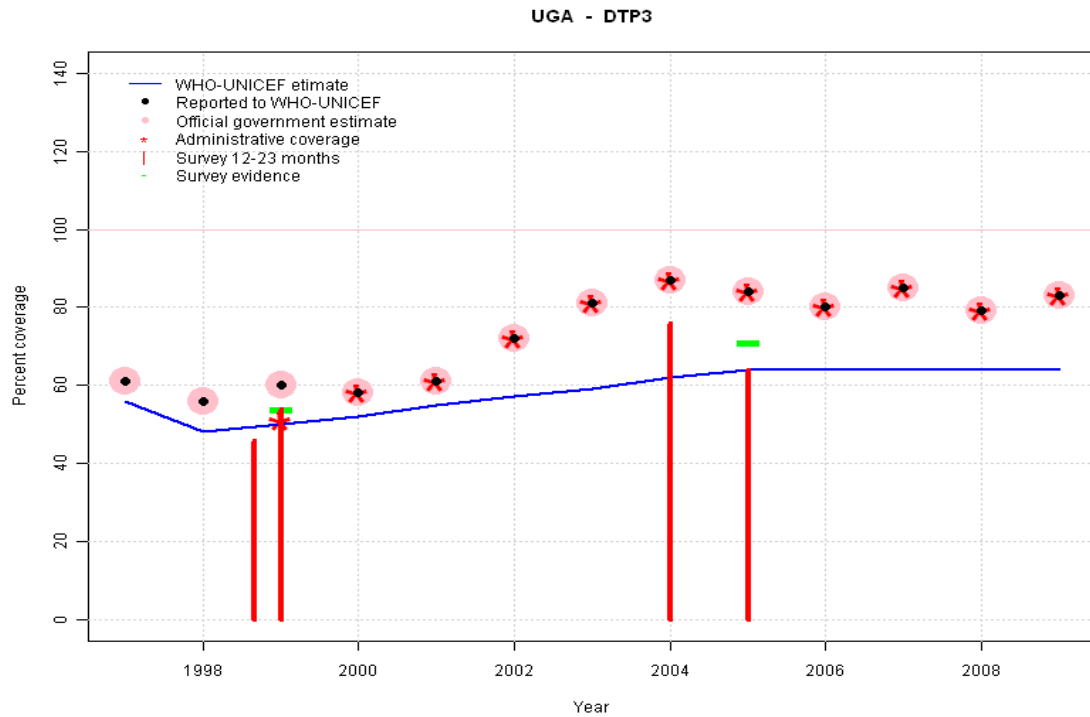
2006: Estimate extrapolated from 2005 level (90 percent).

2007: Estimate extrapolated from 2005 level (90 percent).

2008: Estimate extrapolated from 2005 level (90 percent).

2009: Estimate extrapolated from 2005 level (90 percent).

# Uganda - DTP3



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	56	48	50	52	55	57	59	62	64	64	64	64	64
Reported	61	56	60	58	61	72	81	87	84	80	85	79	83
Official	61	56	60	58	61	72	81	87	84	80	85	79	83
Administrative	NA	NA	51	58	61	72	81	87	84	80	85	79	83
Survey	NA	NA	54	NA	NA	NA	NA	NA	71	NA	NA	NA	NA

## Description:

1997: Legacy estimate.

1998: Reported data (56 percent) calibrated to 1997 and 1999 levels.

1999: Nationally reported data may overestimate coverage due to an underestimate of size of the target population. Survey results (46 percent) adjusted for recall bias to 53 percent based on first dose card or history coverage (77 percent) and documented drop-out between first (45 percent) and third (31 percent) doses.

2000: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2001: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2002: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2003: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting. Shortage of DTP-HepB-Hib combination vaccine. DTP trivalent vaccine available.

2004: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting. Survey results of 76 percent with sample size 232 ignored; sample size less than 300.

2005: Data Quality Self Assessment identified signification reporting problems. Nationally reported data may overestimate coverage due to an underestimate of size of the target population. Survey results (64 percent) adjusted for recall bias to 71 percent based on first dose card or history coverage (90 percent) and documented drop-out between first (62 percent) and third (49 percent) doses.

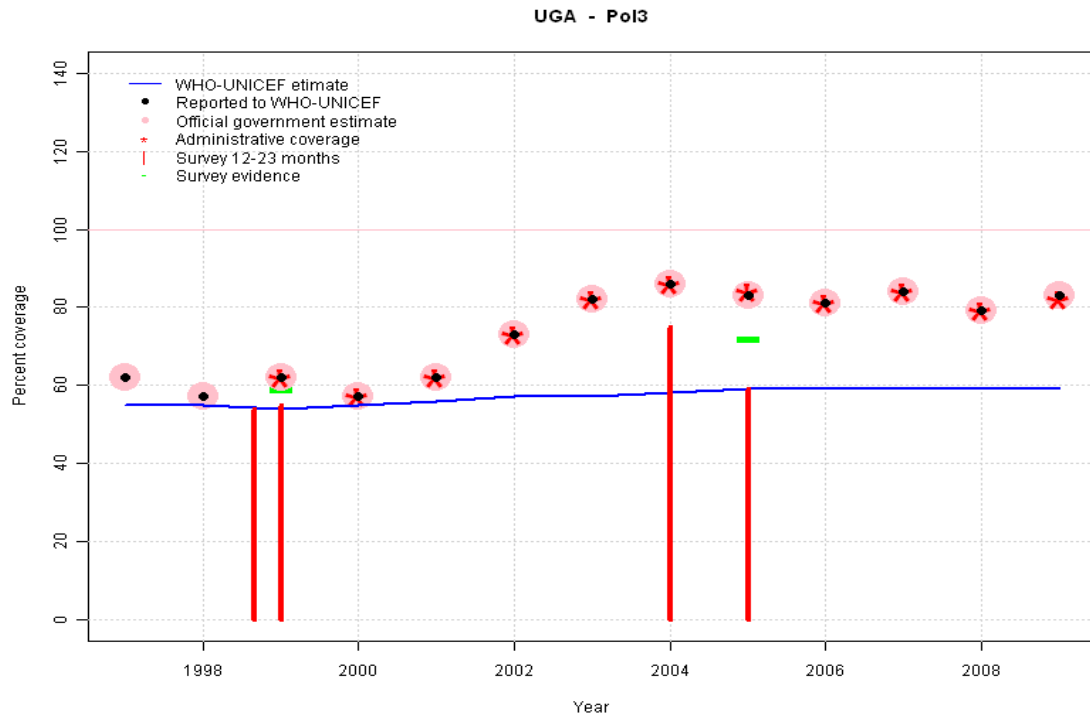
2006: Estimate extrapolated from 2005 level (64 percent).

2007: Estimate extrapolated from 2005 level (64 percent).

2008: Estimate extrapolated from 2005 level (64 percent).

2009: Estimate extrapolated from 2005 level (64 percent).

# Uganda - Pol3



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	55	55	54	55	56	57	57	58	59	59	59	59	59
Reported	62	57	62	57	62	73	82	86	83	81	84	79	83
Official	62	57	62	57	62	73	82	86	83	81	84	79	83
Administrative	NA	NA	62	57	62	73	82	86	84	81	84	79	82
Survey	NA	NA	59	NA	NA	NA	NA	NA	72	NA	NA	NA	NA

## Description:

1997: Legacy estimate.

1998: Estimate interpolated between 1997 and 1999 estimates.

1999: Nationally reported data may overestimate coverage due to an underestimate of size of the target population. Survey results (54 percent) adjusted for recall bias to 62 percent based on first dose card or history coverage (84 percent) and documented drop-out between first (46 percent) and third (34 percent) doses.

2000: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2001: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2002: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2003: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2004: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting. Survey results of 75 percent with sample size 232 ignored; sample size less than 300.

2005: Data Quality Self Assessment identified signification reporting problems. Nationally reported data may overestimate coverage due to an underestimate of size of the target population. Survey results (59 percent) adjusted for recall bias to 72 percent based on first dose card or history coverage (90 percent) and documented drop-out between first (61 percent) and third (49 percent) doses.

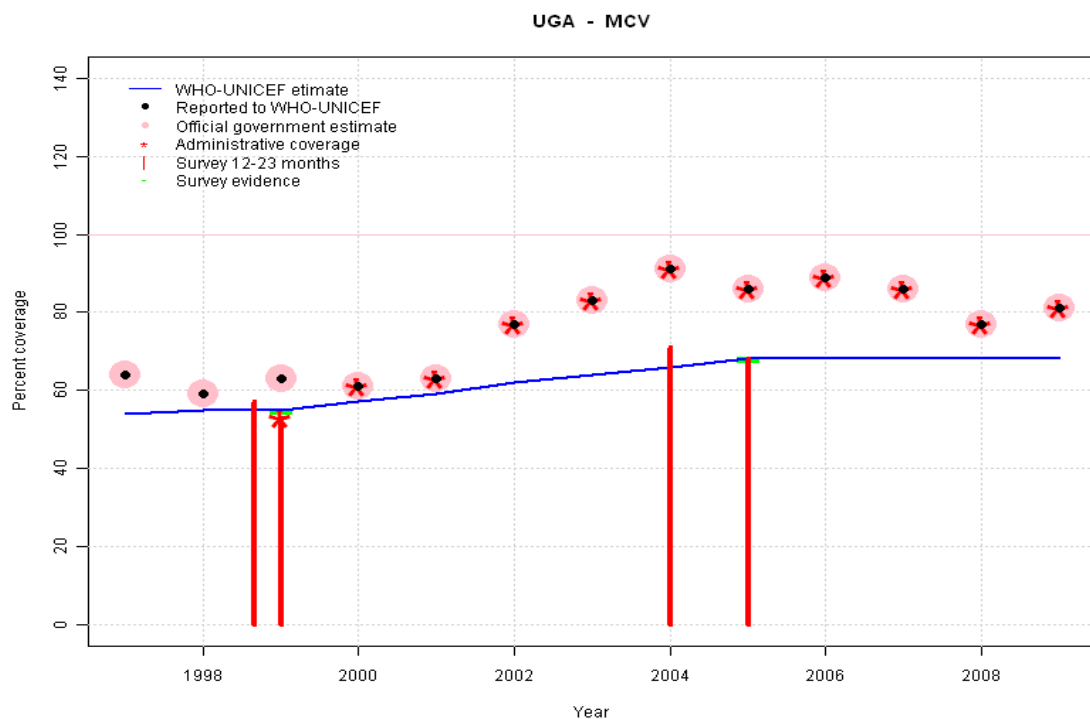
2006: Estimate extrapolated from 2005 level (59 percent).

2007: Estimate extrapolated from 2005 level (59 percent).

2008: Estimate extrapolated from 2005 level (59 percent).

2009: Estimate extrapolated from 2005 level (59 percent).

# Uganda - MCV



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	54	55	55	57	59	62	64	66	68	68	68	68	68
Reported	64	59	63	61	63	77	83	91	86	89	86	77	81
Official	64	59	63	61	63	77	83	91	86	89	86	77	81
Administrative	NA	NA	53	61	63	77	83	91	86	89	86	77	81
Survey	NA	NA	55	NA	NA	NA	NA	NA	68	NA	NA	NA	NA

## Description:

1997: Legacy estimate.

1998: Estimate interpolated between 1997 and 1999 estimates.

1999: Nationally reported data may overestimate coverage due to an underestimate of size of the target population.

2000: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2001: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2002: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2003: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting.

2004: Estimate based on working group decision to interpolated between 1999 and 2005. Estimates based on survey results. Flucations in reported data suggest poor quality administrative recording and reporting. Survey results of 71 percent with sample size 232 ignored; sample size less than 300.

2005: Data Quality Self Assessment identified signification reporting problems. Nationally reported data may overestimate coverage due to an underestimate of size of the target population.

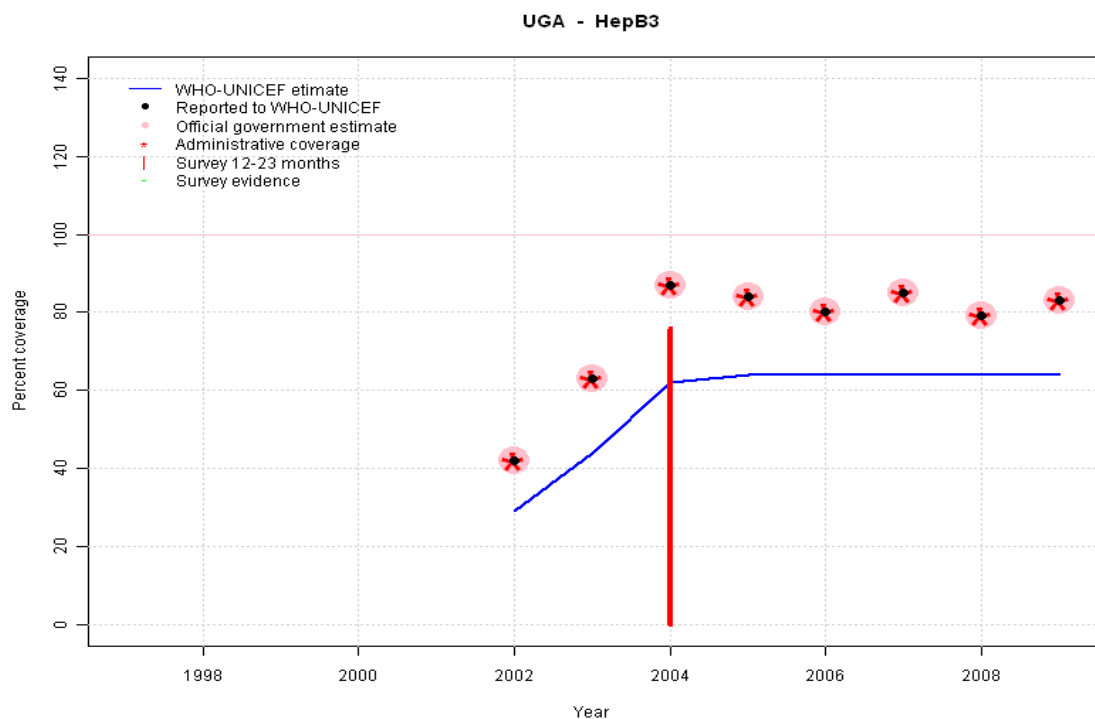
2006: Estimate extrapolated from 2005 level (68 percent).

2007: Estimate extrapolated from 2005 level (68 percent).

2008: Estimate extrapolated from 2005 level (68 percent).

2009: Estimate extrapolated from 2005 level (68 percent).

# Uganda - HepB3

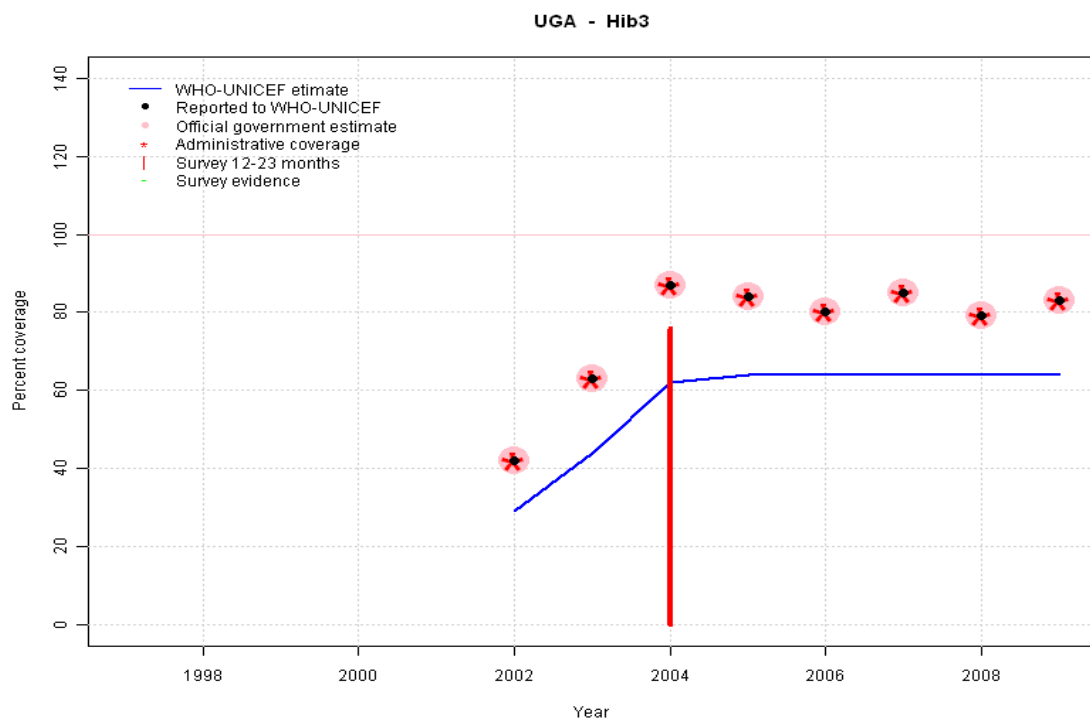


## Description:

- 2002: Data Quality Self Assessment identified significant reporting problems. Nationally reported data may overestimate coverage due to an underestimate of size of the target population. HepB introduced in 2002. Vaccine presentation is DTP-HepB-Hib.
- 2003: Reported data (63 percent) calibrated to 2002 and 2004 levels. Shortage of DTP-HepB-Hib combination vaccine. HepB monovalent vaccine available.
- 2004: DTP-HepB-Hib combination vaccine used; estimates set to level of DTP3 estimate. Survey results of 76 percent with sample size 232 ignored; sample size less than 300.
- 2005: DTP-HepB-Hib combination vaccine used; estimates set to level of DTP3 estimate.
- 2006: Estimate extrapolated from 2005 level (64 percent).
- 2007: Estimate extrapolated from 2005 level (64 percent).
- 2008: Estimate extrapolated from 2005 level (64 percent).
- 2009: Estimate extrapolated from 2005 level (64 percent).

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	NA	NA	29	44	62	64	64	64	64	64
Reported	NA	NA	NA	NA	NA	42	63	87	84	80	85	79	83
Official	NA	NA	NA	NA	NA	42	63	87	84	80	85	79	83
Administrative	NA	NA	NA	NA	NA	42	63	87	84	80	85	79	83
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

# Uganda - Hib3

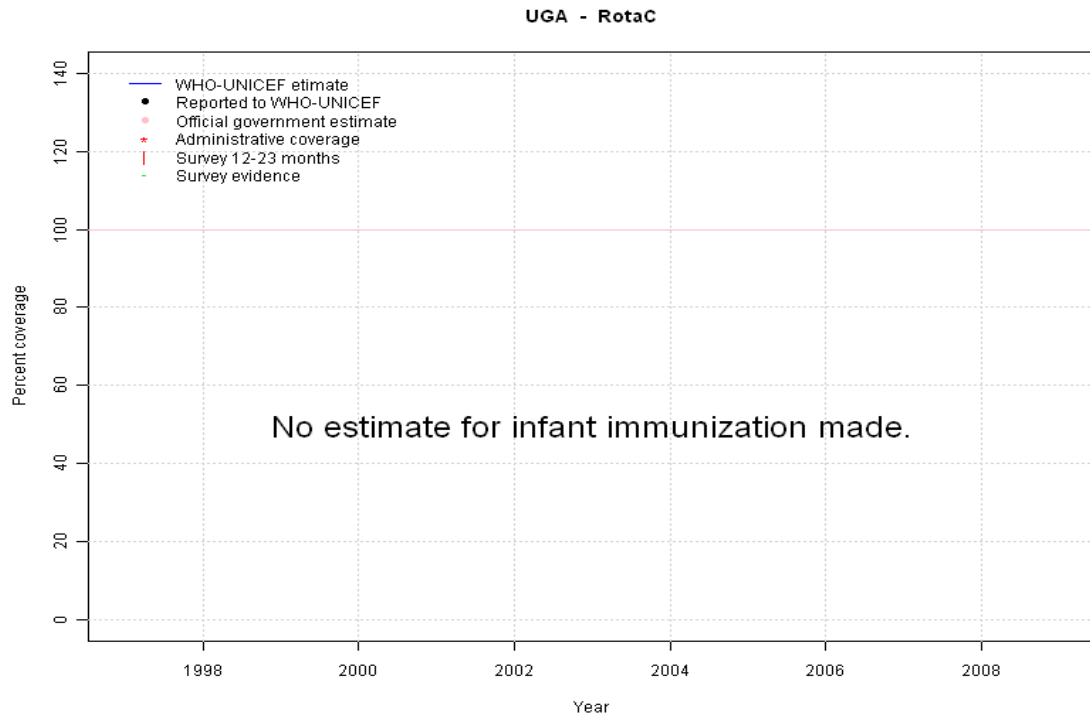


## Description:

- 2002: Data Quality Self Assessment identified signification reporting problems. Nationally reported data may overestimate coverage due to an underestimate of size of the target population. Hib introduced in 2002 Vaccine presentation is DTP-HepB-Hib.
- 2003: Reported data (63 percent) calibrated to 2002 and 2004 levels. Shortage of DTP-HepB-Hib combination vaccine.
- 2004: DTP-HepB-Hib combination vaccine used; estimates set to level of DTP3 estimate. Survey results of 76 percent with sample size 232 ignored; sample size less than 300.
- 2005: DTP-HepB-Hib combination vaccine used; estimates set to level of DTP3 estimate.
- 2006: Estimate extrapolated from 2005 level (64 percent).
- 2007: Estimate extrapolated from 2005 level (64 percent).
- 2008: Estimate extrapolated from 2005 level (64 percent).
- 2009: Estimate extrapolated from 2005 level (64 percent).

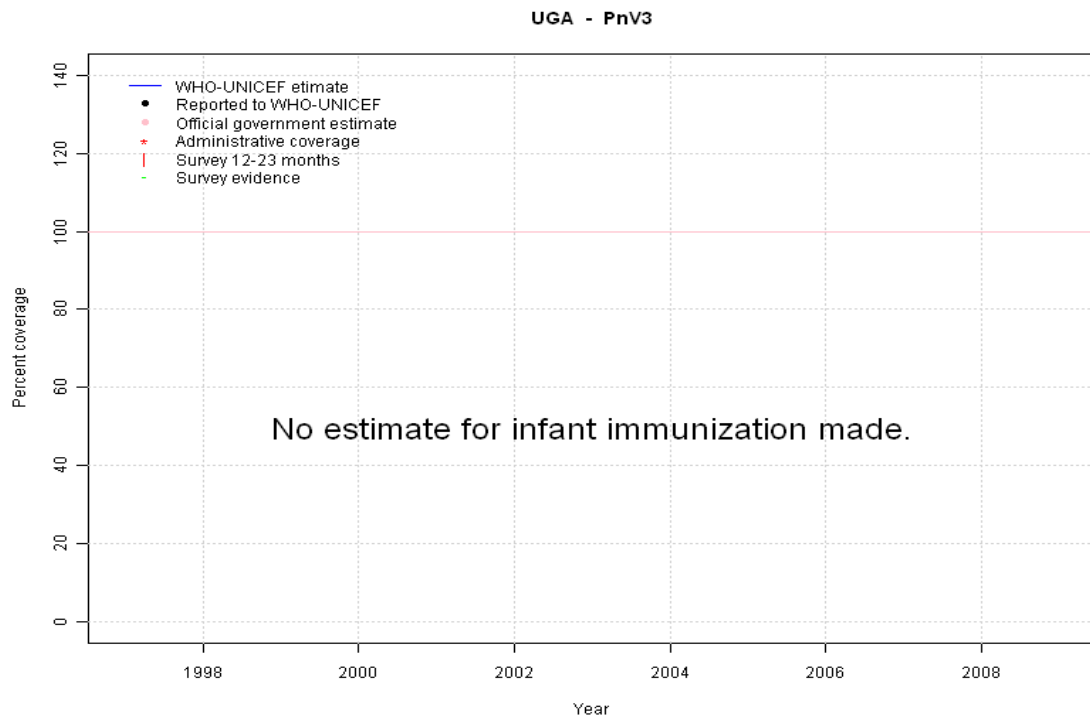
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	NA	NA	29	44	62	64	64	64	64	64
Reported	NA	NA	NA	NA	NA	42	63	87	84	80	85	79	83
Official	NA	NA	NA	NA	NA	42	63	87	84	80	85	79	83
Administrative	NA	NA	NA	NA	NA	42	63	87	84	80	85	79	83
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

# Uganda - 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

# Uganda - 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

# Uganda - survey details

## 2005 Uganda Demographic and Health Survey 2006

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	89	12-23 m	1590	63
BCG	Card	62	12-23 m	1590	63
BCG	Card or History	90	12-23 m	1590	63
BCG	History	29	12-23 m	1590	63
DTP1	C or H <12 months	87	12-23 m	1590	63
DTP1	Card	62	12-23 m	1590	63
DTP1	Card or History	90	12-23 m	1590	63
DTP1	History	28	12-23 m	1590	63
DTP3	History	14	12-23 m	1590	63
DTP3	C or H <12 months	59	12-23 m	1590	63
DTP3	Card or History	64	12-23 m	1590	63
DTP3	Card	49	12-23 m	1590	63
MCV	C or H <12 months	52	12-23 m	1590	63
MCV	Card	46	12-23 m	1590	63
MCV	Card or History	68	12-23 m	1590	63
MCV	History	22	12-23 m	1590	63
Pol1	C or H <12 months	88	12-23 m	1590	63
Pol1	Card	61	12-23 m	1590	63
Pol1	Card or History	90	12-23 m	1590	63
Pol1	History	29	12-23 m	1590	63
Pol3	History	10	12-23 m	1590	63
Pol3	C or H <12 months	55	12-23 m	1590	63
Pol3	Card	49	12-23 m	1590	63
Pol3	Card or History	59	12-23 m	1590	63

## 2004 Uganda EPI Plus Coverage Survey 2006

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	93	12-23 m	232	73
DTP1	Card or History	85	12-23 m	232	73
DTP3	Card or History	76	12-23 m	232	73
HepB1	Card or History	85	12-23 m	232	73
HepB3	Card or History	76	12-23 m	232	73
Hib3	Card or History	76	12-23 m	232	73
MCV	Card or History	71	12-23 m	232	73

Pol1	Card or History	88	12-23 m	232	73
Pol3	Card or History	75	12-23 m	232	73

## 1999 Uganda Demographic and Health Survey 2000-2001

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	75	12-23 m	1504	0
BCG	Card	46	12-23 m	1504	0
BCG	Card or History	79	12-23 m	1504	0
BCG	History	32	12-23 m	1504	0
DTP1	Card	45	12-23 m	1504	0
DTP1	Card or History	77	12-23 m	1504	0
DTP1	C or H <12 months	73	12-23 m	1504	0
DTP1	History	32	12-23 m	1504	0
DTP3	C or H <12 months	42	12-23 m	1504	0
DTP3	Card	31	12-23 m	1504	0
DTP3	Card or History	46	12-23 m	1504	0
DTP3	History	15	12-23 m	1504	0
MCV	Card	32	12-23 m	1504	0
MCV	C or H <12 months	42	12-23 m	1504	0
MCV	History	25	12-23 m	1504	0
MCV	Card or History	57	12-23 m	1504	0
Pol1	History	38	12-23 m	1504	0
Pol1	C or H <12 months	79	12-23 m	1504	0
Pol1	Card or History	84	12-23 m	1504	0
Pol1	Card	46	12-23 m	1504	0
Pol3	C or H <12 months	50	12-23 m	1504	0
Pol3	Card	34	12-23 m	1504	0
Pol3	Card or History	54	12-23 m	1504	0
Pol3	History	21	12-23 m	1504	0

## 1999 Uganda Immunization Coverage Validation Survey 1998/1999

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	82	12-23 m	10466	0
DTP1	Card or History	78	12-23 m	10466	0
DTP3	Card or History	54	12-23 m	10466	0

## Uganda - survey details

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MCV	Card or History	53	12-23 m	10466	0
Pol1	Card or History	79	12-23 m	10466	0

Pol3	Card or History	55	12-23 m	10466	0
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Further information and estimates for 1980-1996 are available at:

[http://www.childinfo.org/immunization\\_countryreports.html](http://www.childinfo.org/immunization_countryreports.html)

[http://www.who.int/immunization\\_monitoring/routine/immunization\\_coverage/en/index4.html](http://www.who.int/immunization_monitoring/routine/immunization_coverage/en/index4.html)

## Uganda

### 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	72
1998	68
1999	69
2000	70
2001	72
2002	78
2003	78
2004	82
2005	85
2006	83
2007	85
2008	85
2009	89

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<sup>1</sup> 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.