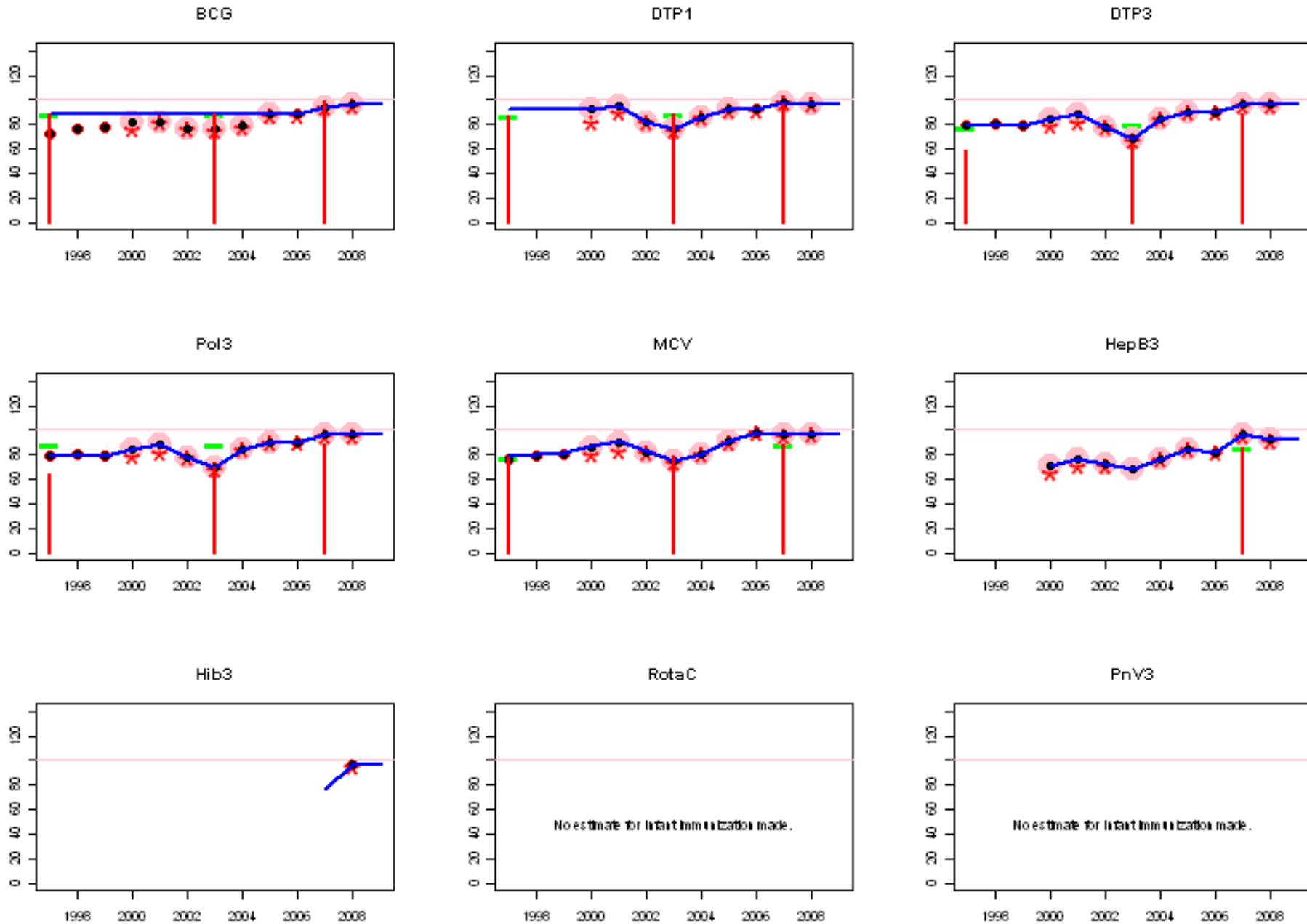
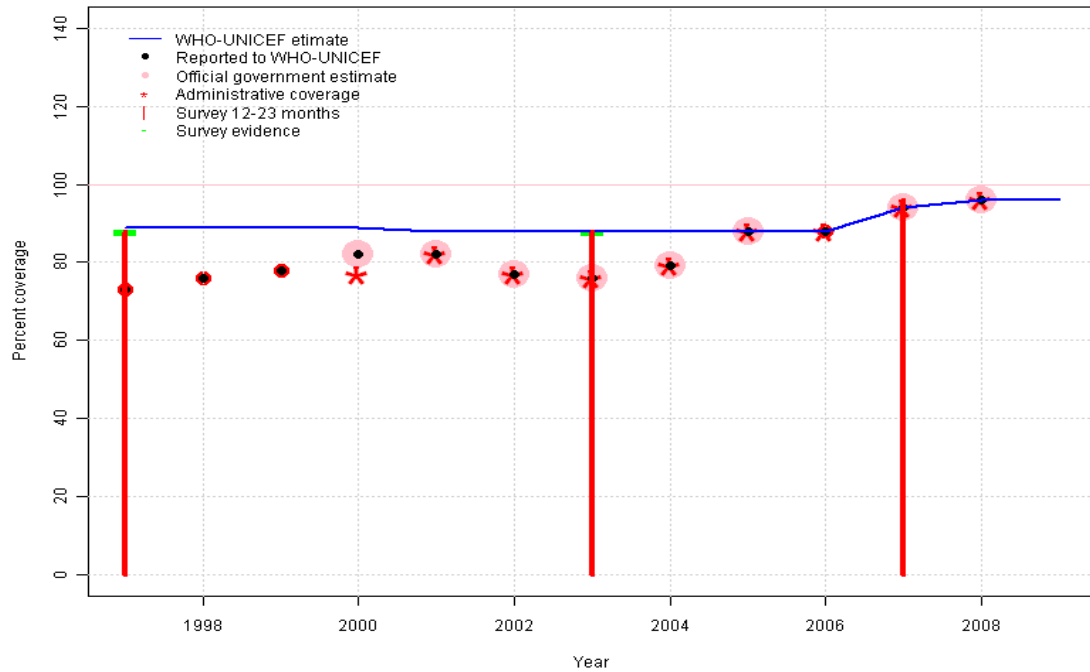


Turkey: WHO and UNICEF estimates of immunization coverage, 1997 - 2009



# Turkey - BCG

TUR - BCG



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	89	89	89	89	88	88	88	88	88	88	94	96	96
Reported	73	76	78	82	82	77	76	79	88	88	94	96	NA
Official	NA	NA	NA	82	82	77	76	79	88	NA	94	96	NA
Administrative	NA	NA	NA	77	82	77	76	79	88	88	94	96	NA
Survey	88	NA	NA	NA	NA	NA	88	NA	NA	NA	96	NA	NA

## Description:

1997: Legacy estimate.

1998: Estimate interpolated between 1997 and 2003 estimates.

1999: Estimate interpolated between 1997 and 2003 estimates.

2000: Estimate interpolated between 1997 and 2003 estimates.

2001: Estimate interpolated between 1997 and 2003 estimates.

2002: Estimate interpolated between 1997 and 2003 estimates.

2003: Estimate based on survey results. Reported data (76 percent) not consistent with survey results (88 percent).

2004: Estimate interpolated between 2003 and 2005 estimates.

2005: From 2005 onward survey results support reported data.

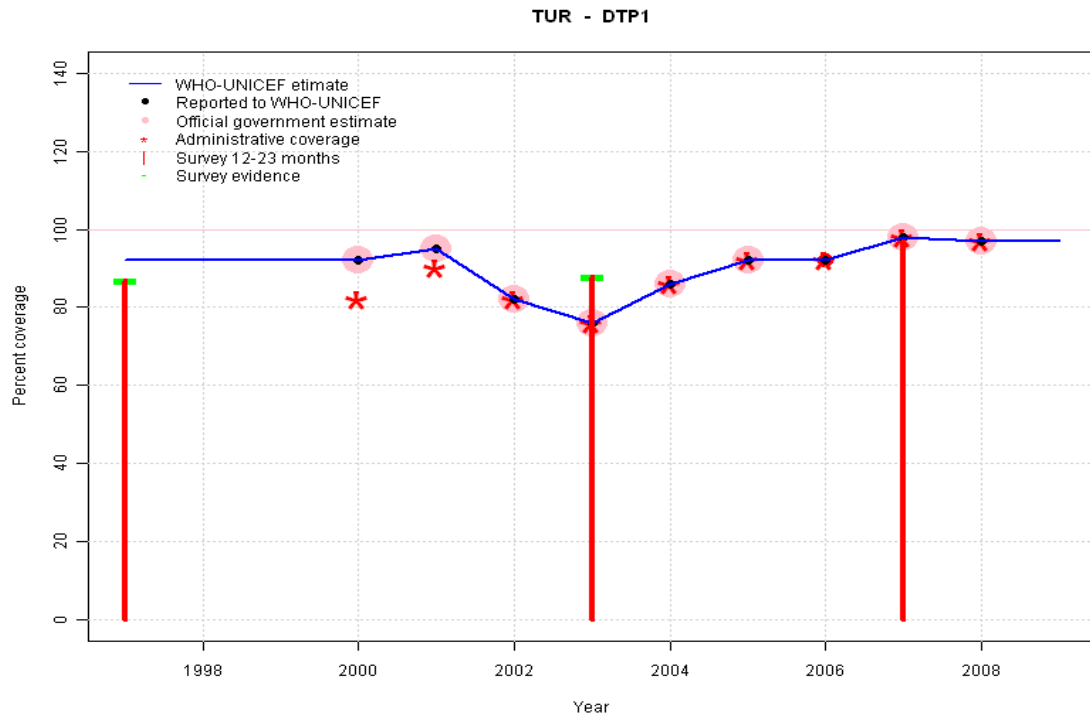
2006: Estimate based on reported data.

2007: Estimate based on reported data (94 percent) confirmed by survey (96 percent).

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 96 percent.

# Turkey - DTP1

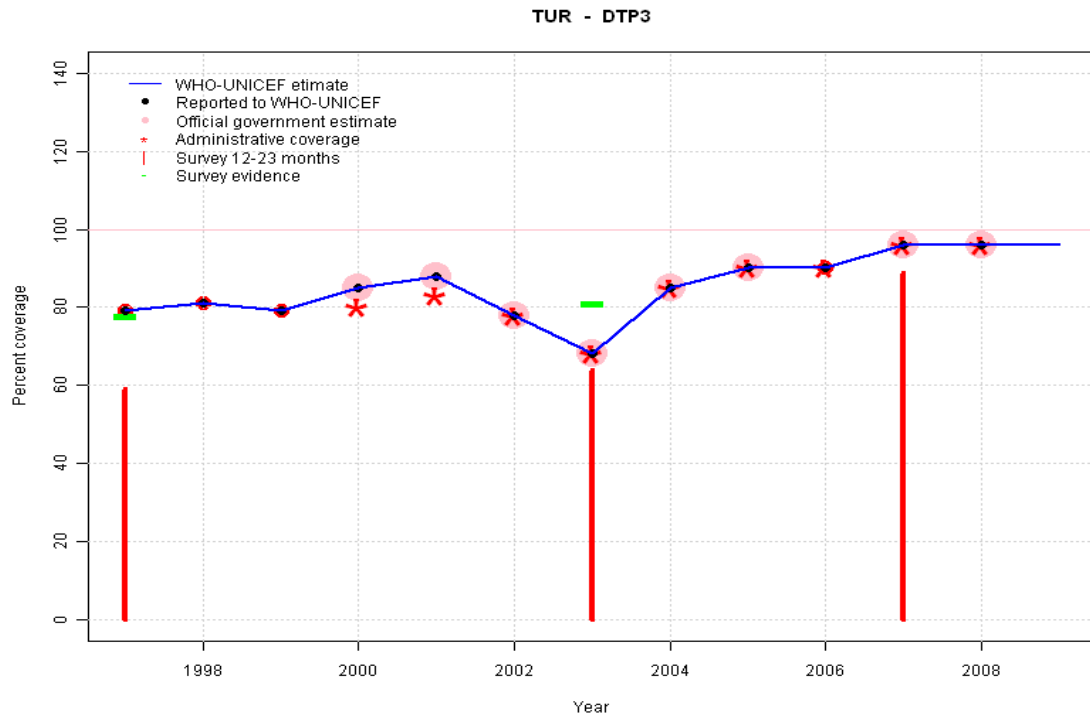


## Description:

- 1997: Legacy estimate.
- 1998: Estimate based on trend in reported data. Missing or ignored reported value estimated by extrapolation from 2000 reported value of 92 percent.
- 1999: Estimate based on trend in reported data. Missing or ignored reported value estimated by extrapolation from 2000 reported value of 92 percent.
- 2000: Estimate based on reported data.
- 2001: Estimate based on reported data.
- 2002: Estimate based on reported data.
- 2003: Survey results support reported data
- 2004: Estimate based on reported data.
- 2005: Estimate based on reported data.
- 2006: Estimate based on reported data.
- 2007: Estimate based on reported data (98 percent) confirmed by survey (97 percent).
- 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 97 percent.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	92	92	92	92	95	82	76	86	92	92	98	97	97
Reported	NA	NA	NA	92	95	82	76	86	92	92	98	97	NA
Official	NA	NA	NA	92	95	82	76	86	92	NA	98	97	NA
Administrative	NA	NA	NA	82	90	82	76	86	92	92	98	97	NA
Survey	87	NA	NA	NA	NA	NA	88	NA	NA	NA	97	NA	NA

# Turkey - DTP3

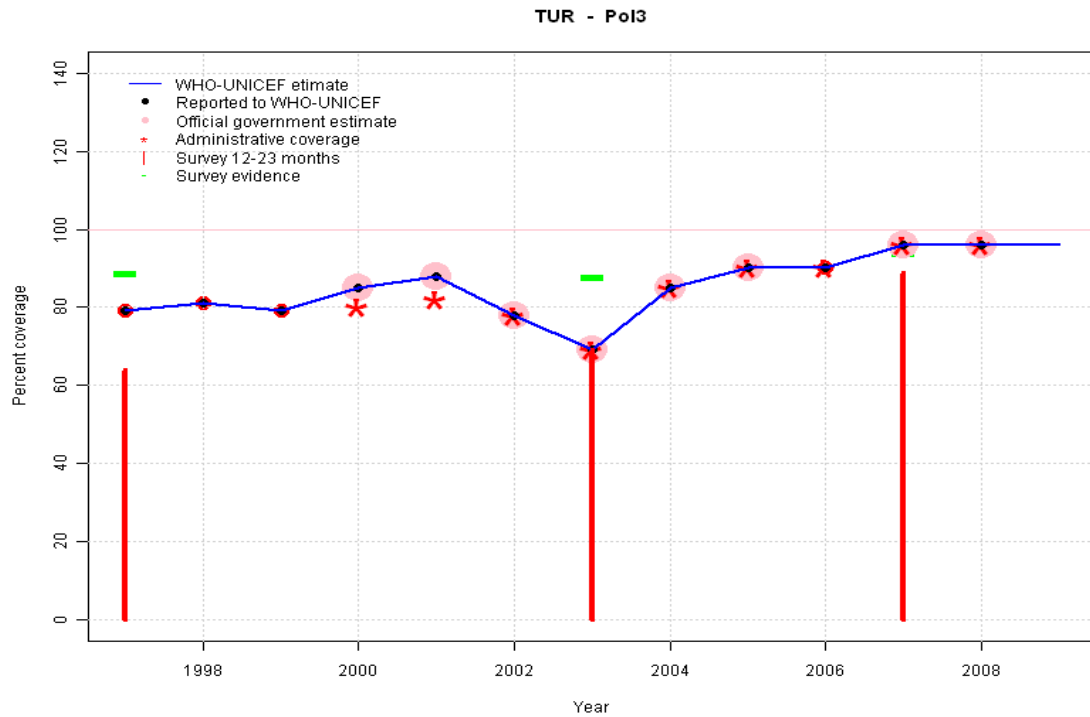


## Description:

- 1997: Legacy estimate. Survey results (59 percent) adjusted for recall bias to 78 percent based on first dose card or history coverage (87 percent) and documented drop-out between first (38 percent) and third (34 percent) doses.
- 1998: Estimate based on reported data.
- 1999: Estimate based on reported data.
- 2000: Estimate based on reported data.
- 2001: Estimate based on reported data.
- 2002: Estimate based on reported data.
- 2003: Survey results support reported data. Survey results (64 percent) adjusted for recall bias to 81 percent based on first dose card or history coverage (88 percent) and documented drop-out between first (52 percent) and third (48 percent) doses.
- 2004: Estimate based on reported data.
- 2005: Estimate based on reported data.
- 2006: Estimate based on reported data.
- 2007: Estimate based on reported data (96 percent) confirmed by survey (96 percent). Survey results (89 percent) adjusted for recall bias to 96 percent based on first dose card or history coverage (97 percent) and documented drop-out between first (72 percent) and third (71 percent) doses.
- 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 96 percent.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	79	81	79	85	88	78	68	85	90	90	96	96	96
Reported	79	81	79	85	88	78	68	85	90	90	96	96	NA
Official	NA	NA	NA	85	88	78	68	85	90	NA	96	96	NA
Administrative	NA	NA	NA	80	83	78	68	85	90	90	96	96	NA
Survey	78	NA	NA	NA	NA	NA	81	NA	NA	NA	96	NA	NA

# Turkey - Pol3



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	79	81	79	85	88	78	69	85	90	90	96	96	96
Reported	79	81	79	85	88	78	69	85	90	90	96	96	NA
Official	NA	NA	NA	85	88	78	69	85	90	NA	96	96	NA
Administrative	NA	NA	NA	80	82	78	69	85	90	90	96	96	NA
Survey	89	NA	NA	NA	NA	NA	88	NA	NA	NA	94	NA	NA

## Description:

1997: Legacy estimate. Survey results (64 percent) adjusted for recall bias to 89 percent based on first dose card or history coverage (94 percent) and documented drop-out between first (38 percent) and third (36 percent) doses.

1998: Estimate based on reported data.

1999: Estimate based on reported data.

2000: Estimate based on reported data.

2001: Estimate based on reported data.

2002: Estimate based on reported data.

2003: Survey results support reported data. Survey results (69 percent) adjusted for recall bias to 88 percent based on first dose card or history coverage (95 percent) and documented drop-out between first (52 percent) and third (48 percent) doses.

2004: Estimate based on reported data.

2005: Estimate based on reported data.

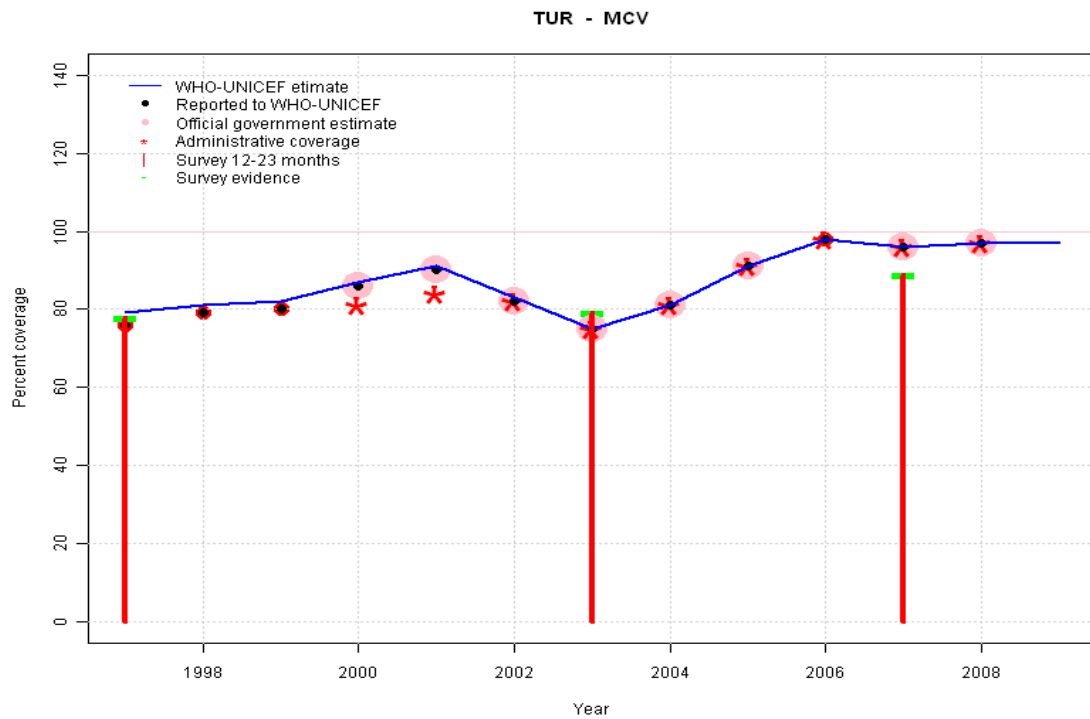
2006: Estimate based on reported data.

2007: Estimate based on reported data (96 percent) confirmed by survey (94 percent). Survey results (89 percent) adjusted for recall bias to 94 percent based on first dose card or history coverage (97 percent) and documented drop-out between first (72 percent) and third (70 percent) doses.

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 96 percent.

# Turkey - MCV

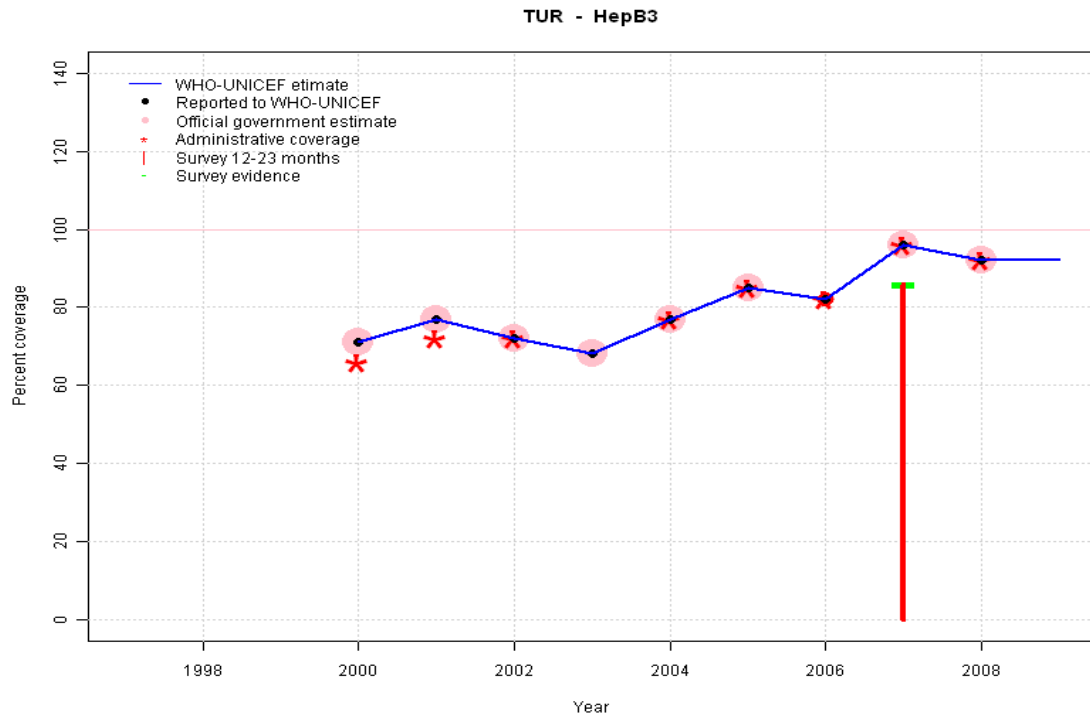


	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	79	81	82	87	91	83	75	81	91	98	96	97	97
Reported	76	79	80	86	90	82	75	81	91	98	96	97	NA
Official	NA	NA	NA	86	90	82	75	81	91	NA	96	97	NA
Administrative	NA	NA	NA	81	84	82	75	81	91	98	96	97	NA
Survey	78	NA	NA	NA	NA	NA	79	NA	NA	NA	89	NA	NA

## Description:

- 1997: Legacy estimate.
- 1998: Reported data (79 percent) calibrated to 1997 and 2003 levels.
- 1999: Reported data (80 percent) calibrated to 1997 and 2003 levels.
- 2000: Reported data (86 percent) calibrated to 1997 and 2003 levels.
- 2001: Reported data (90 percent) calibrated to 1997 and 2003 levels.
- 2002: Reported data (82 percent) calibrated to 1997 and 2003 levels.
- 2003: Survey results support reported data
- 2004: Estimate based on reported data.
- 2005: Estimate based on reported data.
- 2006: Estimate based on reported data.
- 2007: In 2006 the recommended age for measles immunization was changed to 12 months of age. The survey results for children 12-23 months of age under-represented coverage
- 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 97 percent.

# Turkey - HepB3



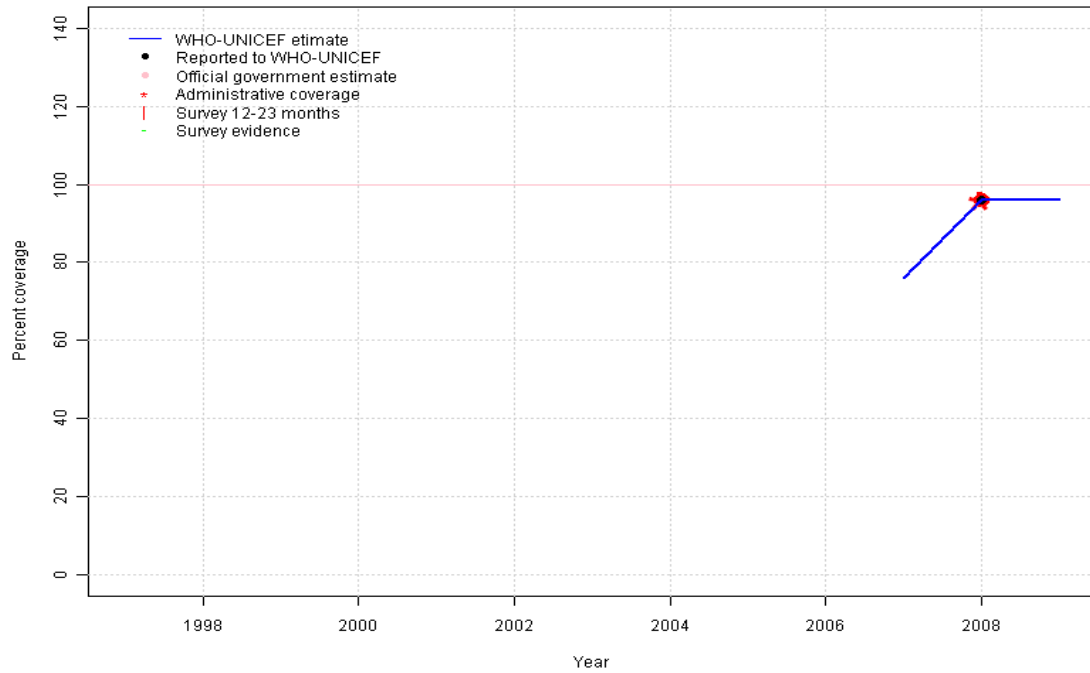
## Description:

- 2000: Estimate based on trend in reported data. HepB introduced in 1998. Reporting started in 2000. Vaccine presentation is HepB .
- 2001: Estimate based on trend in reported data.
- 2002: Estimate based on trend in reported data.
- 2003: Estimate based on trend in reported data.
- 2004: Estimate based on trend in reported data.
- 2005: Estimate based on trend in reported data.
- 2006: Estimate based on trend in reported data.
- 2007: Estimate based on reported data (96 percent) confirmed by survey (86 percent).
- 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 92 percent.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	71	77	72	68	77	85	82	96	92	92
Reported	NA	NA	NA	71	77	72	68	77	85	82	96	92	NA
Official	NA	NA	NA	71	77	72	68	77	85	NA	96	92	NA
Administrative	NA	NA	NA	66	72	72	NA	77	85	82	96	92	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	86	NA	NA

# Turkey - Hib3

TUR - Hib3



## Description:

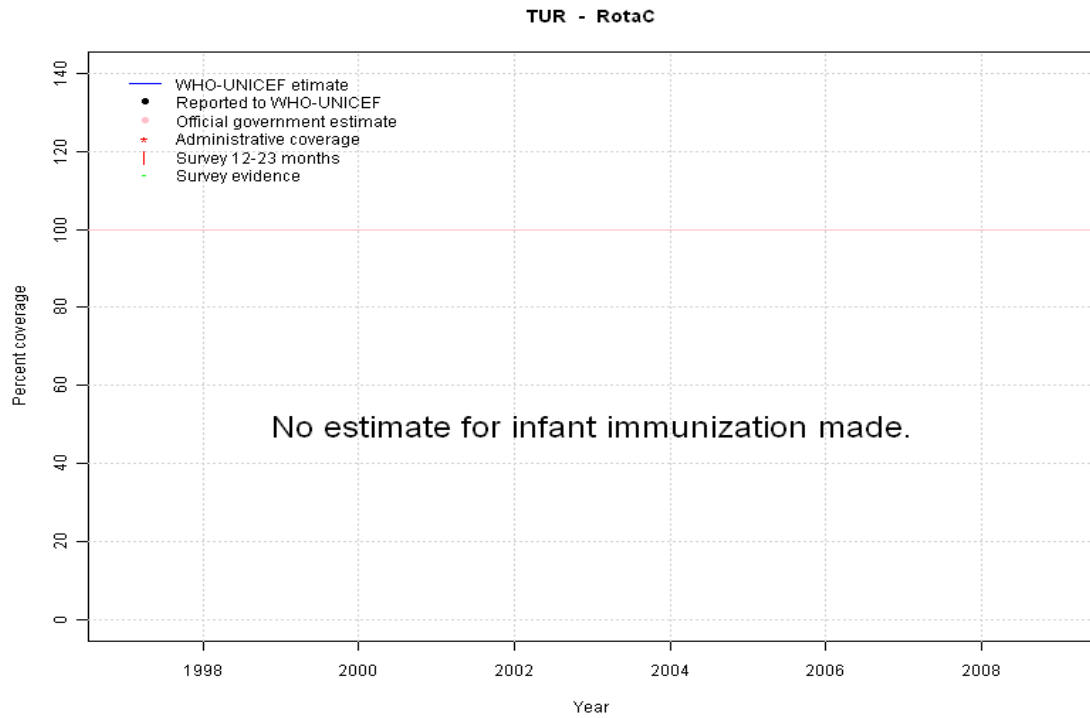
2007: Hib vaccine introduced in 2006. 91 percent coverage achieved during the last 10 months of 2007. Hib introduced in 2006. Reporting started in 2007.

2008: Hib vaccine introduced in 2006 and full coverage achieved in 2008.

2009: Estimate based on trend in reported data. Missing or ignored reported value estimated by extrapolation from 2008 reported value of 96 percent.

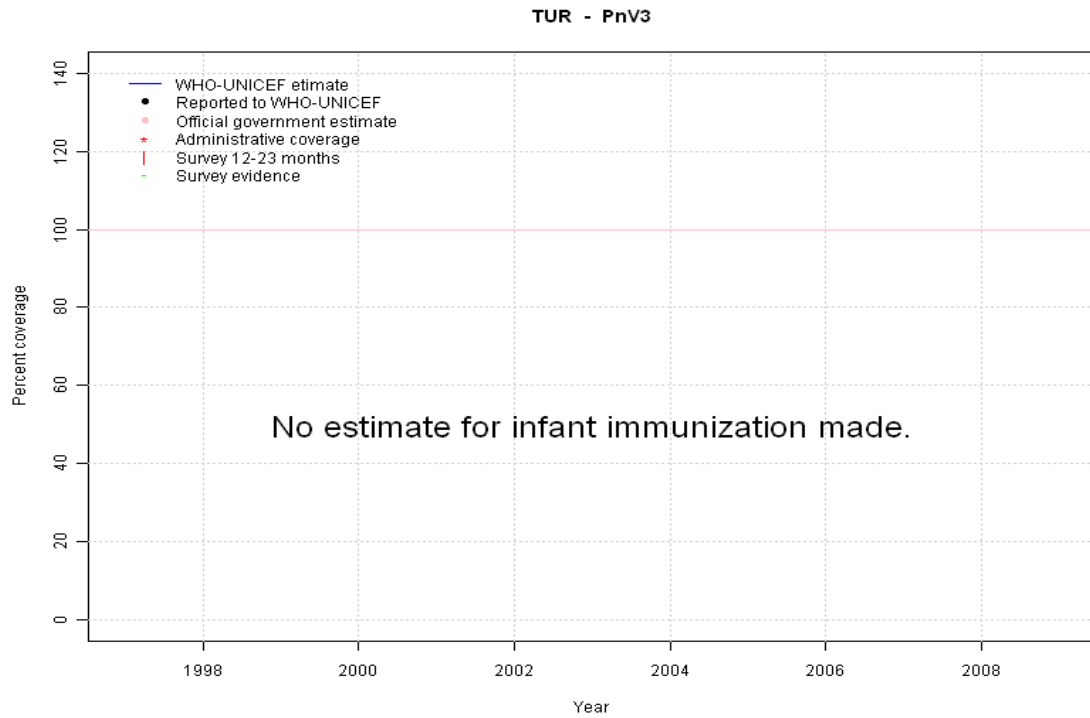
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76	96	96
Reported	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	96	NA
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	96	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

# Turkey - 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

# Turkey - 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

# Turkey - survey details

## 2007 Turkey Demographic and Health Survey 2008

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	71	15-26 m	711	73
BCG	C or H <15 months	96	15-26 m	711	73
BCG	Card or History	96	15-26 m	711	73
BCG	History	25	15-26 m	711	73
DTP1	Card or History	97	15-26 m	711	73
DTP1	History	25	15-26 m	711	73
DTP1	Card	72	15-26 m	711	73
DTP1	C or H <15 months	96	15-26 m	711	73
DTP3	C or H <15 months	85	15-26 m	711	73
DTP3	Card or History	89	15-26 m	711	73
DTP3	History	18	15-26 m	711	73
DTP3	Card	71	15-26 m	711	73
HepB1	History	24	15-26 m	711	73
HepB1	Card or History	96	15-26 m	711	73
HepB1	C or H <15 months	96	15-26 m	711	73
HepB1	Card	72	15-26 m	711	73
HepB3	Card	70	15-26 m	711	73
HepB3	History	16	15-26 m	711	73
HepB3	Card or History	86	15-26 m	711	73
HepB3	C or H <15 months	84	15-26 m	711	73
MCV	C or H <15 months	86	15-26 m	711	73
MCV	History	23	15-26 m	711	73
MCV	Card	66	15-26 m	711	73
MCV	Card or History	89	15-26 m	711	73
Pol1	History	25	15-26 m	711	73
Pol1	Card or History	97	15-26 m	711	73
Pol1	C or H <15 months	96	15-26 m	711	73
Pol1	Card	72	15-26 m	711	73
Pol3	Card	70	15-26 m	711	73
Pol3	History	19	15-26 m	711	73
Pol3	Card or History	89	15-26 m	711	73
Pol3	C or H <15 months	85	15-26 m	711	73

## 2003 Turkey Demographic and Health Survey 2003

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	86	12-23 m	749	54
BCG	Card	52	12-23 m	749	54
BCG	Card or history	88	12-23 m	749	54
BCG	History	36	12-23 m	749	54
DTP1	History	37	12-23 m	749	54
DTP1	C or H <12 months	87	12-23 m	749	54
DTP1	Card or history	88	12-23 m	749	54
DTP1	Card	52	12-23 m	749	54
DTP3	History	16	12-23 m	749	54
DTP3	Card or history	64	12-23 m	749	54
DTP3	Card	48	12-23 m	749	54
DTP3	C or H <12 months	62	12-23 m	749	54
MCV	History	30	12-23 m	749	54
MCV	Card or history	79	12-23 m	749	54
MCV	Card	49	12-23 m	749	54
MCV	C or H <12 months	71	12-23 m	749	54
Pol1	C or H <12 months	92	12-23 m	749	54
Pol1	History	42	12-23 m	749	54
Pol1	Card	52	12-23 m	749	54
Pol1	Card or history	95	12-23 m	749	54
Pol3	C or H <12 months	66	12-23 m	749	54
Pol3	Card	48	12-23 m	749	54
Pol3	Card or history	69	12-23 m	749	54
Pol3	History	21	12-23 m	749	54

## 1997 Turkish Demographic and Health Survey 1998, 1999

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	36	12-23 m	689	38
BCG	Card or History	88	12-23 m	689	38
BCG	History	52	12-23 m	689	38
BCG	C or H <12 months	87	12-23 m	689	38
BCG	C or H <12 months	84	24-35 m	612	25
BCG	C or H <12 months	76	36-47 m	612	13
BCG	C or H <12 months	84	48-59 m	674	14
DTP1	Card	38	12-23 m	689	38
DTP1	C or H <12 months	86	12-23 m	689	38
DTP1	History	49	12-23 m	689	38

## Turkey - survey details

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DTP1	Card or History	87	12-23 m	689	38	MCV	C or H <12 months	58	48-59 m	674	14
DTP1	C or H <12 months	80	24-35 m	612	25	Pol1	Card	38	12-23 m	689	38
DTP1	C or H <12 months	64	36-47 m	612	13	Pol1	History	56	12-23 m	689	38
DTP1	C or H <12 months	78	48-59 m	674	14	Pol1	C or H <12 months	92	12-23 m	689	38
DTP3	C or H <12 months	56	12-23 m	689	38	Pol1	Card or History	94	12-23 m	689	38
DTP3	Card	34	12-23 m	689	38	Pol1	C or H <12 months	85	24-35 m	612	25
DTP3	Card or History	59	12-23 m	689	38	Pol1	C or H <12 months	72	36-47 m	612	13
DTP3	History	24	12-23 m	689	38	Pol1	C or H <12 months	88	48-59 m	674	14
DTP3	C or H <12 months	47	24-35 m	612	25	Pol3	C or H <12 months	61	12-23 m	689	38
DTP3	C or H <12 months	41	36-47 m	612	13	Pol3	Card	36	12-23 m	689	38
DTP3	C or H <12 months	48	48-59 m	674	14	Pol3	Card or History	64	12-23 m	689	38
MCV	History	45	12-23 m	689	38	Pol3	History	29	12-23 m	689	38
MCV	C or H <12 months	71	12-23 m	689	38	Pol3	C or H <12 months	56	24-35 m	612	25
MCV	Card or History	78	12-23 m	689	38	Pol3	C or H <12 months	49	36-47 m	612	13
MCV	Card	33	12-23 m	689	38	Pol3	C or H <12 months	58	48-59 m	674	14
MCV	C or H <12 months	59	24-35 m	612	25						
MCV	C or H <12 months	53	36-47 m	612	13						

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)

## Turkey

### 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	47
1998	48
1999	49
2000	50
2001	52
2002	52
2003	53
2004	77
2005	62
2006	68
2007	70
2008	71
2009	71

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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.