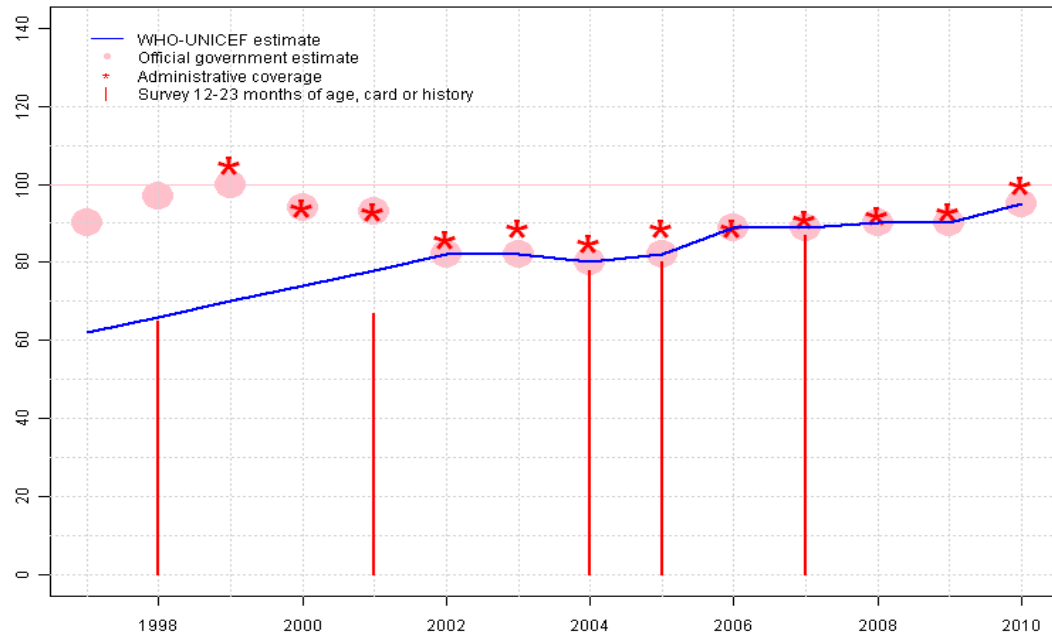


# Pakistan - BCG

PAK - BCG



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	62	66	70	74	78	82	82	80	82	89	89	90	90	95
Official	90	97	100	94	93	82	82	80	82	89	89	90	90	95
Administrative	NA	NA	105	94	93	86	89	85	89	89	91	92	93	100
Survey	NA	65	NA	NA	67	NA	NA	78	80	NA	87	NA	NA	NA

## Description:

1997: Legacy estimate.

1998: Estimate based on interpolation between 1997 and 2002. Survey results not accepted. Sample size 0 less than 300. Reported data inconsistent with trend in survey results.

1999: Estimate based on interpolation between 1997 and 2002. Reported data inconsistent with trend in survey results.

2000: Estimate based on interpolation between 1997 and 2002. Reported data inconsistent with trend in survey results.

2001: Estimate based on interpolation between 1997 and 2002. Survey results not accepted. Sample size 0 less than 300. Reported data inconsistent with trend in survey results.

2002: Reported data supported by 2004 survey.

2003: Estimate based on reported data.

2004: Estimate based on reported data. 78 percent survey results supports reported data of 80 percent.

2005: Estimate based on reported data. Survey not accepted. DHS 2005 survey results with sample size of 1,522 inconsistent with 2004 National Coverage survey with sample size of 72,2080.

2006: Estimate based on reported data.

2007: Estimate based on reported data. 87 percent survey results supports reported data of 89 percent.

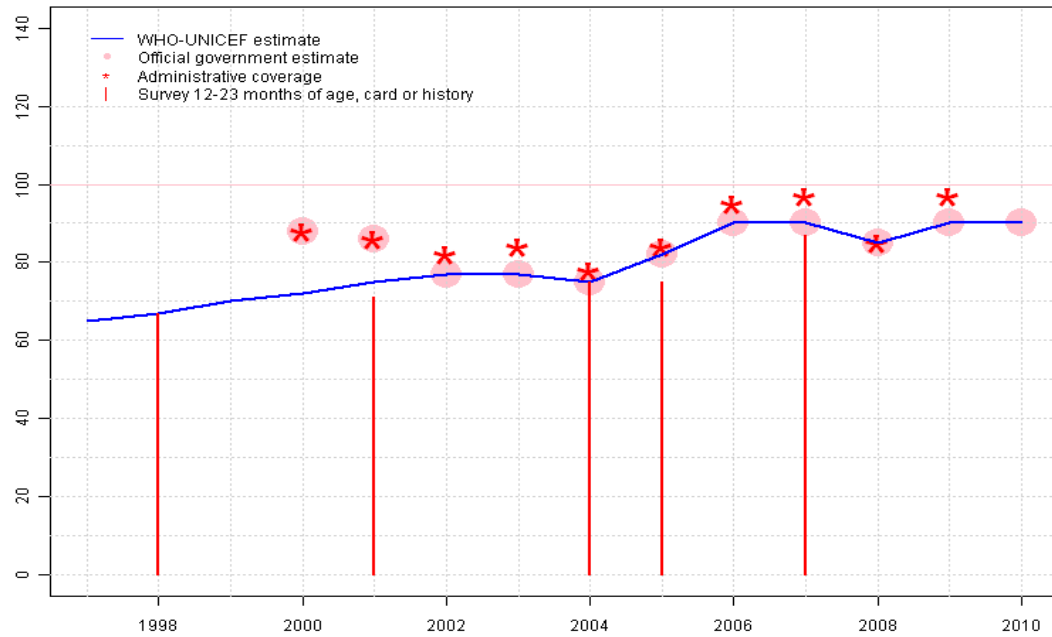
2008: Estimate based on reported data.

2009: Estimate based on reported data.

2010: Estimate based on reported data. Increase in administrative coverage is partially due to the reduction in growth rate used in population projections (from 2.6 to 1.9).

# Pakistan - DTP1

PAK - DTP1



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	65	67	70	72	75	77	77	75	82	90	90	85	90	90
Official	NA	NA	NA	88	86	77	77	75	82	90	90	85	90	90
Administrative	NA	NA	NA	88	86	82	84	78	84	95	97	85	97	NA
Survey	NA	67	NA	NA	71	NA	NA	75	75	NA	87	NA	NA	NA

## Description:

1997: Legacy estimate.

1998: Estimate based on interpolation between 1997 and 2002. Survey results not accepted. Sample size 0 less than 300. Reported data inconsistent with trend in survey results.

1999: Estimate based on interpolation between 1997 and 2002. Reported data inconsistent with trend in survey results.

2000: Estimate based on interpolation between 1997 and 2002. Reported data inconsistent with trend in survey results.

2001: Estimate based on interpolation between 1997 and 2002. Survey results not accepted. Sample size 0 less than 300. Reported data inconsistent with trend in survey results.

2002: Reported data supported by 2004 survey.

2003: Estimate based on reported data.

2004: Estimate based on reported data. 75 percent survey results supports reported data of 75 percent.

2005: Estimate based on reported data. Survey not accepted. DHS 2005 survey results with sample size of 1,522 inconsistent with 2004 National Coverage survey with sample size of 72,2080.

2006: Estimate based on reported data.

2007: Estimate based on reported data. 87 percent survey results supports reported data of 90 percent.

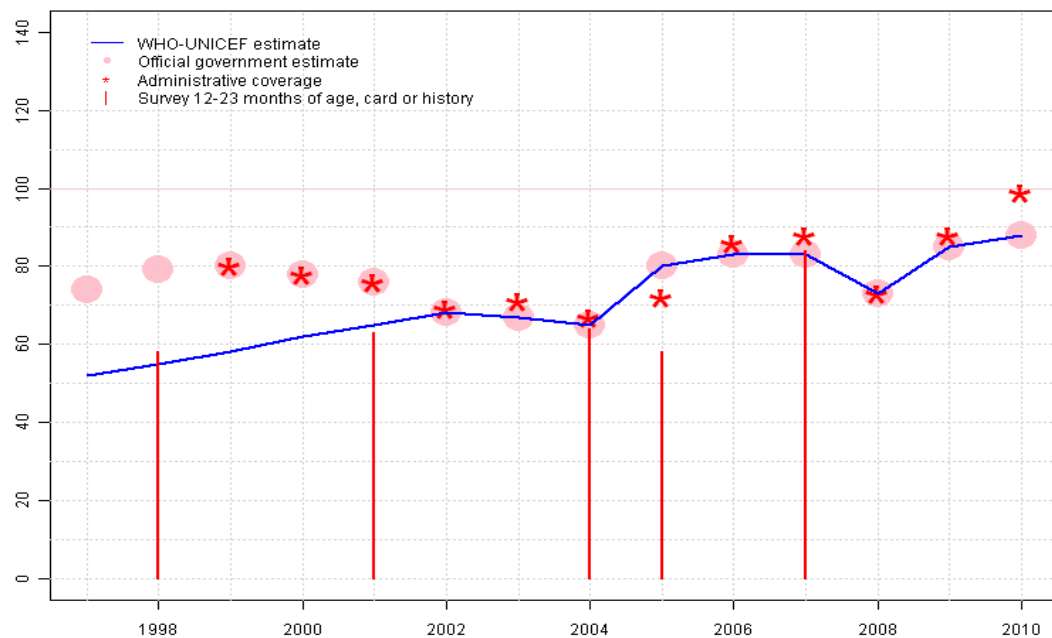
2008: Estimate based on reported data.

2009: Estimate based on reported data.

2010: Estimate based on reported data. Increase in administrative coverage is partially due to the reduction in growth rate used in population projections (from 2.6 to 1.9).

# Pakistan - DTP3

PAK - DTP3



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	52	55	58	62	65	68	67	65	80	83	83	73	85	88
Official	74	79	80	78	76	68	67	65	80	83	83	73	85	88
Administrative	NA	NA	80	78	76	69	71	67	72	86	88	73	88	99
Survey	NA	58	NA	NA	63	NA	NA	64	58	NA	84	NA	NA	NA

## Description:

1997: Legacy estimate.

1998: Estimate based on interpolation between 1997 and 2002. Survey results not accepted. Sample size 0 less than 300. Reported data inconsistent with trend in survey results.

1999: Estimate based on interpolation between 1997 and 2002. Reported data inconsistent with trend in survey results.

2000: Estimate based on interpolation between 1997 and 2002. Reported data inconsistent with trend in survey results.

2001: Estimate based on interpolation between 1997 and 2002. Survey results not accepted. Sample size 0 less than 300. Reported data inconsistent with trend in survey results.

2002: Reported data supported by 2004 survey.

2003: Estimate based on reported data.

2004: Estimate based on reported data. 68 percent survey results supports reported data of 65 percent. Survey results of 64 percent modified for recall bias to 68 percent based on 1st dose card or history coverage of 75 percent, 1st dose card only coverage of 10 percent and 3d dose card only coverage of 9 percent.

2005: Estimate based on reported data. Survey not accepted. DHS 2005 survey results with sample size of 1,522 inconsistent with 2004 National Coverage survey with sample size of 72,2080.

2006: Estimate based on reported data.

2007: Estimate based on reported data. 85 percent survey results supports reported data of 83 percent. Survey results of 84 percent modified for recall bias to 85 percent based on 1st dose card or history coverage of 87 percent, 1st dose card only coverage of 52 percent and 3d dose card only coverage of 51 percent.

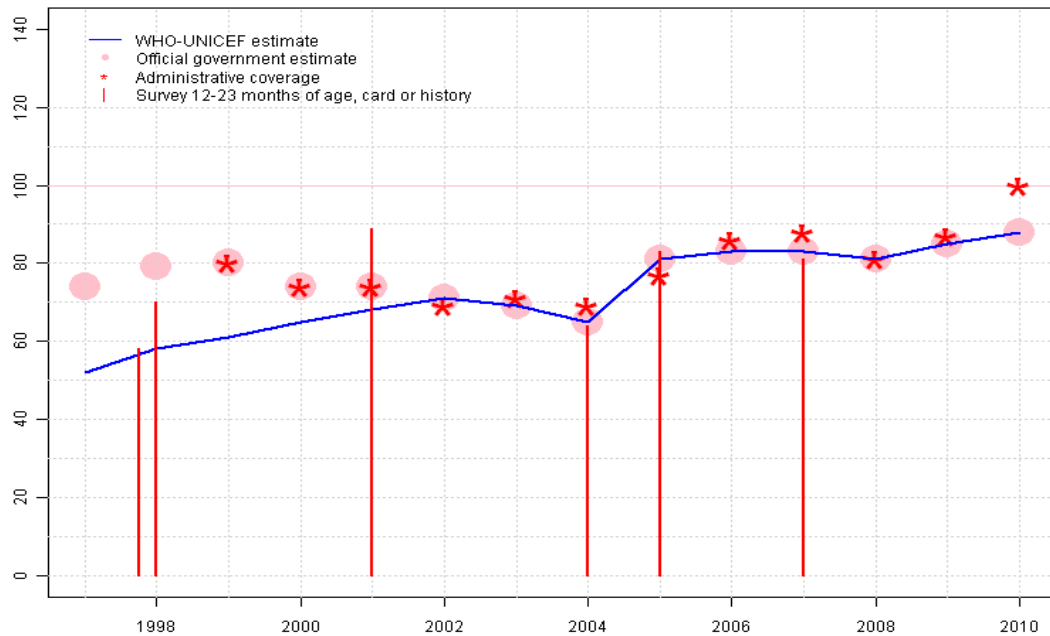
2008: Estimate based on reported data. Supplies of DTP-HepB vaccine were available until mid-2008 when DTP-HepB-Hib pentavalent vaccine introduction was planned. Introduction of pentavalent vaccine was postponed because of delays in transfer of funds by GAVI secretariat resulting in a decline of DTP coverage.

2009: Estimate based on reported data.

2010: Estimate based on reported data. Increase in administrative coverage is partially due to the reduction in growth rate used in population projections (from 2.6 to 1.9).

# Pakistan - Pol3

PAK - Pol3



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	52	58	61	65	68	71	69	65	81	83	83	81	85	88
Official	74	79	80	74	74	71	69	65	81	83	83	81	85	88
Administrative	NA	NA	80	74	74	69	71	69	77	86	88	81	87	100
Survey	NA	*	NA	NA	89	NA	NA	64	83	NA	81	NA	NA	NA

## Description:

1997: Legacy estimate.

1998: Estimate based on survey results. 58 percent survey results does not support reported data of 79 percent. Survey results not accepted. Sample size 0 less than 300. Reported data inconsistent with trend in survey results.

1999: Estimate based on interpolation between 1998 and 2002. Reported data inconsistent with trend in survey results.

2000: Estimate based on interpolation between 1998 and 2002. Reported data inconsistent with trend in survey results.

2001: Estimate based on interpolation between 1998 and 2002. Survey results not accepted. Sample size 0 less than 300. Reported data inconsistent with trend in survey results.

2002: Reported data supported by 2004 survey.

2003: Estimate based on reported data.

2004: Estimate based on reported data. 67 percent survey results supports reported data of 65 percent. Survey results of 64 percent modified for recall bias to 67 percent based on 1st dose card or history coverage of 74 percent, 1st dose card only coverage of 10 percent and 3d dose card only coverage of 9 percent.

2005: Estimate based on reported data. Survey not accepted. DHS 2005 survey results with sample size of 1,522 inconsistent with 2004 National Coverage survey with sample size of 72,2080.

2006: Estimate based on reported data.

2007: Estimate based on reported data. 81 percent survey results supports reported data of 83 percent. Survey results of 81 percent modified for recall bias to 81 percent based on 1st dose card or history coverage of 83 percent, 1st dose card only coverage of 51 percent and 3d dose card only coverage of 50 percent.

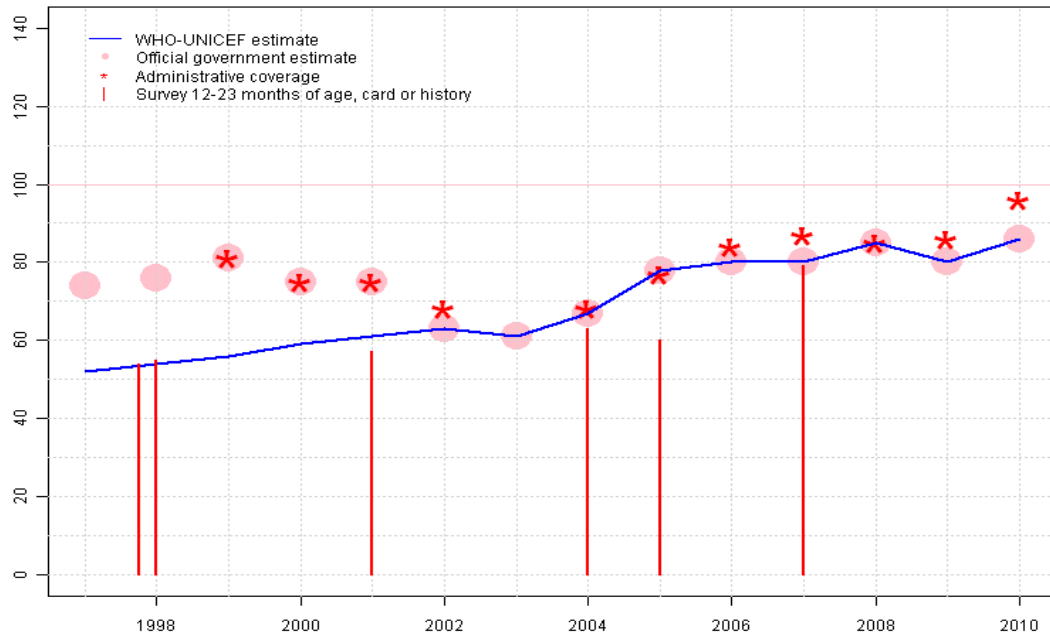
2008: Estimate based on reported data.

2009: Estimate based on reported data.

2010: Estimate based on reported data. Increase in administrative coverage is partially due to the reduction in growth rate used in population projections (from 2.6 to 1.9).

# Pakistan - MCV

PAK - MCV



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	52	54	56	59	61	63	61	67	78	80	80	85	80	86
Official	74	76	81	75	75	63	61	67	78	80	80	85	80	86
Administrative	NA	NA	81	75	75	68	NA	68	77	84	87	85	86	96
Survey	NA	*	NA	NA	57	NA	NA	63	60	NA	79	NA	NA	NA

## Description:

1997: Legacy estimate.

1998: Estimate based on survey results. 54 percent survey results does not support reported data of 76 percent. Survey results not accepted. Sample size 0 less than 300. Reported data inconsistent with trend in survey results.

1999: Estimate based on interpolation between 1998 and 2002. Reported data inconsistent with trend in survey results.

2000: Estimate based on interpolation between 1998 and 2002. Reported data inconsistent with trend in survey results.

2001: Estimate based on interpolation between 1998 and 2002. Survey results not accepted. Sample size 0 less than 300. Reported data inconsistent with trend in survey results.

2002: Reported data supported by 2004 survey.

2003: Estimate based on reported data.

2004: Estimate based on reported data. 63 percent survey results supports reported data of 67 percent.

2005: Estimate based on reported data. Survey not accepted. DHS 2005 survey results with sample size of 1,522 inconsistent with 2004 National Coverage survey with sample size of 72,2080.

2006: Estimate based on reported data.

2007: Estimate based on reported data. 79 percent survey results supports reported data of 80 percent.

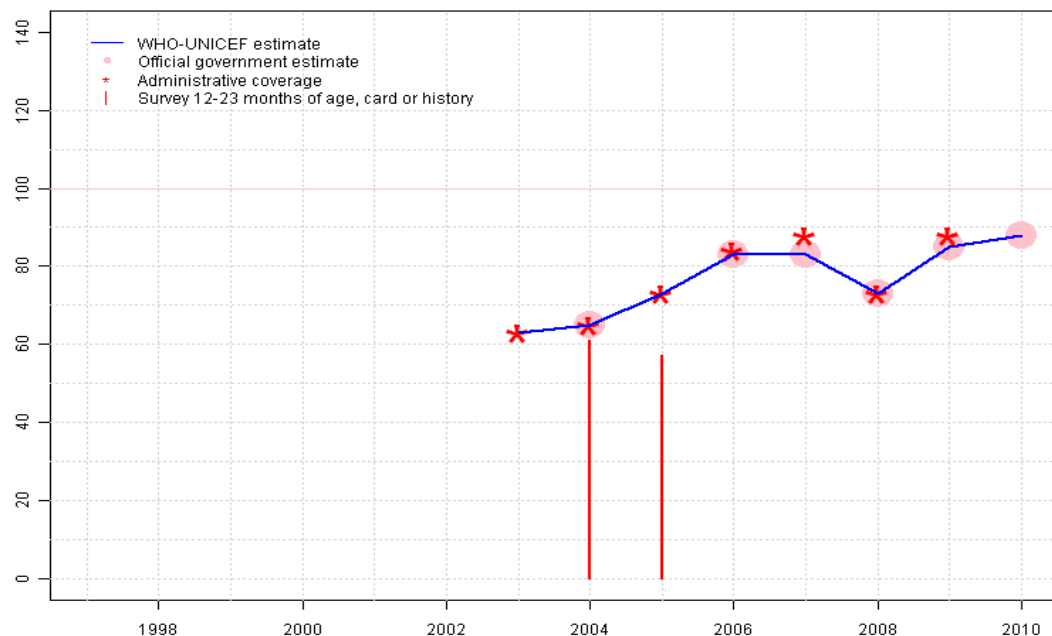
2008: Estimate based on reported data.

2009: Estimate based on reported data.

2010: Estimate based on reported data. Increase in administrative coverage is partially due to the reduction in growth rate used in population projections (from 2.6 to 1.9).

# Pakistan - HepB3

PAK - HepB3



## Description:

- 2003: Estimate based on reported data. HepB introduced in 2002. Reporting started in 2003.
- 2004: Estimate based on reported data. 62 percent survey results supports reported data of 65 percent. Survey results of 61 percent modified for recall bias to 62 percent based on 1st dose card or history coverage of 69 percent, 1st dose card only coverage of 10 percent and 3d dose card only coverage of 9 percent.
- 2005: Estimate based on reported data. Survey not accepted. DHS 2005 survey results with sample size of 1,522 inconsistent with 2004 National Coverage survey with sample size of 72,2080.
- 2006: Estimate based on reported data.
- 2007: Estimate based on reported data.
- 2008: Estimate based on reported data. Supplies of DTP-HepB vaccine were available until mid-2008 when DTP-HepB-Hib pentavalent vaccine introduction was planned. Introduction of pentavalent vaccine was postponed because of delays in transfer of funds by GAVI secretariat resulting in a decline of DTP coverage.
- 2009: Estimate based on reported data.
- 2010: Estimate based on reported data. Increase in administrative coverage is partially due to the reduction in growth rate used in population projections (from 2.6 to 1.9).

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	NA	NA	NA	NA	NA	NA	63	65	73	83	83	73	85	88
Official	NA	NA	NA	NA	NA	NA	NA	65	NA	83	83	73	85	88
Administrative	NA	NA	NA	NA	NA	NA	63	65	73	84	88	73	88	NA
Survey	NA	NA	NA	NA	NA	NA	NA	61	57	NA	NA	NA	NA	NA

# Pakistan - Hib3

PAK - Hib3



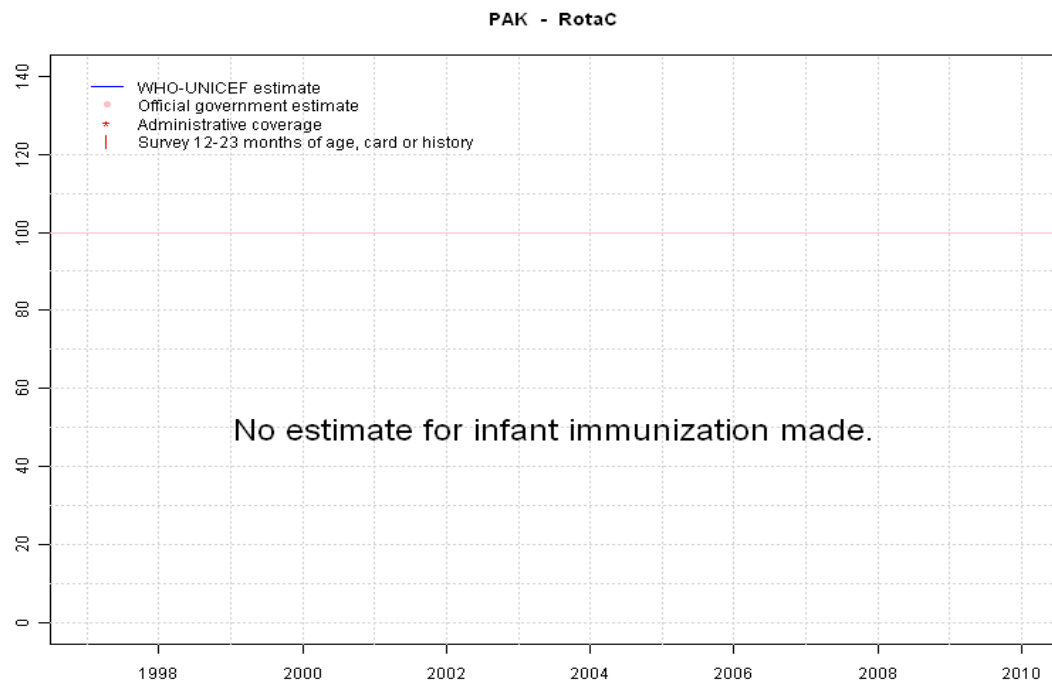
## Description:

2009: Estimate based on reported data. Hib introduced in 2009 Vaccine presentation is DTP-HepB-Hib.

2010: Estimate based on reported data. Increase in administrative coverage is partially due to the reduction in growth rate used in population projections (from 2.6 to 1.9).

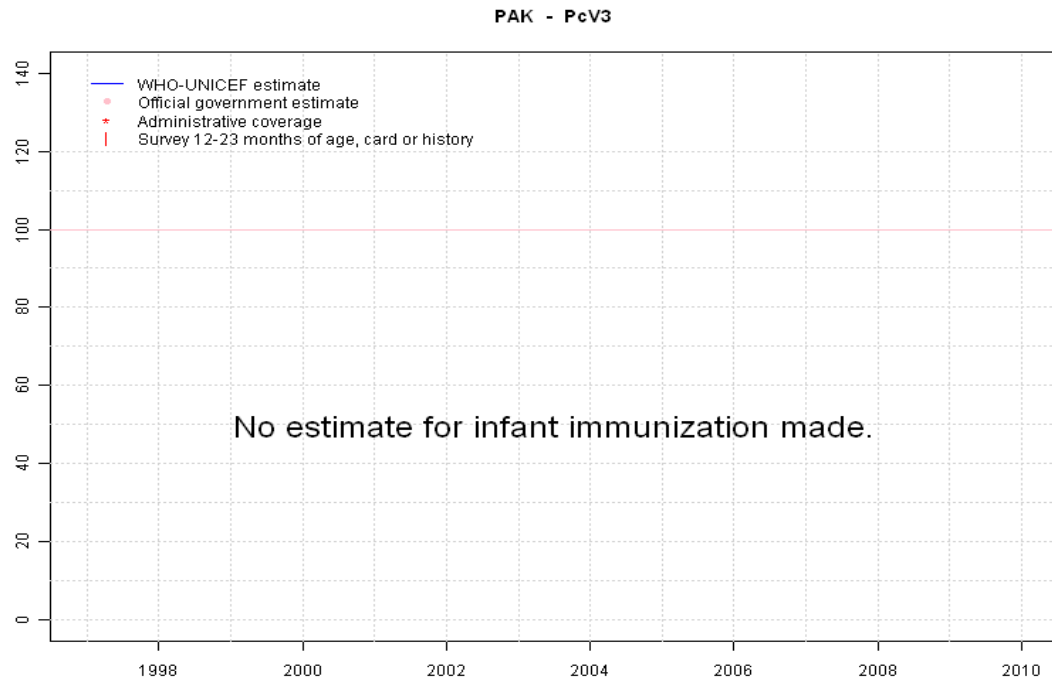
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Estimate	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	85	88
Official	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	85	88
Administrative	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	88	NA
Survey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

# Pakistan - 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

# Pakistan - 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

# Pakistan - survey details

## 2007 Pakistan Social and Living Standards Measurement Survey 2008-2009

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	87	12-23 m	75188	0
BCG	Card	52	12-23 m	75188	0
DTP1	Card or History	87	12-23 m	75188	0
DTP1	Card	52	12-23 m	75188	0
DTP3	Card or History	84	12-23 m	75188	0
DTP3	Card	51	12-23 m	75188	0
MCV	Card	51	12-23 m	75188	0
MCV	Card or History	79	12-23 m	75188	0
Pol1	Card or History	83	12-23 m	75188	0
Pol1	Card	51	12-23 m	75188	0
Pol3	Card or History	81	12-23 m	75188	0
Pol3	Card	50	12-23 m	75188	0

## 2005 Pakistan Demographic and Health Survey 2006-07

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	C or H <12 months	78	12-23 m	1522	24
BCG	History	57	12-23 m	1522	24
BCG	Card	24	12-23 m	1522	24
BCG	Card or History	80	12-23 m	1522	24
DTP1	C or H <12 months	72	12-23 m	1522	24
DTP1	Card	23	12-23 m	1522	24
DTP1	Card or History	75	12-23 m	1522	24
DTP1	History	52	12-23 m	1522	24
DTP3	C or H <12 months	56	12-23 m	1522	24
DTP3	Card	21	12-23 m	1522	24
DTP3	Card or History	58	12-23 m	1522	24
DTP3	History	38	12-23 m	1522	24
HepB1	History	48	12-23 m	1522	24
HepB1	C or H <12 months	68	12-23 m	1522	24
HepB1	Card or History	71	12-23 m	1522	24
HepB1	Card	23	12-23 m	1522	24
HepB3	Card	21	12-23 m	1522	24
HepB3	Card or History	57	12-23 m	1522	24

HepB3	History	36	12-23 m	1522	24
HepB3	C or H <12 months	54	12-23 m	1522	24
MCV	C or H <12 months	50	12-23 m	1522	24
MCV	Card	19	12-23 m	1522	24
MCV	Card or History	60	12-23 m	1522	24
MCV	History	41	12-23 m	1522	24
Pol1	History	70	12-23 m	1522	24
Pol1	C or H <12 months	89	12-23 m	1522	24
Pol1	Card or History	93	12-23 m	1522	24
Pol1	Card	23	12-23 m	1522	24
Pol3	Card	21	12-23 m	1522	24
Pol3	Card or History	83	12-23 m	1522	24
Pol3	History	62	12-23 m	1522	24
Pol3	C or H <12 months	79	12-23 m	1522	24

## 2004 EPI Coverage Evaluation Survey, Draft Report, Pakistan 2006

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	History	68	12-23 m	72280	11
BCG	Card	10	12-23 m	72280	11
BCG	Card or History	78	12-23 m	72280	11
DTP1	Card	10	12-23 m	72280	11
DTP1	History	64	12-23 m	72280	11
DTP1	Card or History	75	12-23 m	72280	11
DTP3	Card or History	64	12-23 m	72280	11
DTP3	History	55	12-23 m	72280	11
DTP3	Card	9	12-23 m	72280	11
HepB1	Card or History	69	12-23 m	72280	11
HepB1	Card	10	12-23 m	72280	11
HepB1	History	59	12-23 m	72280	11
HepB3	Card or History	61	12-23 m	72280	11
HepB3	History	52	12-23 m	72280	11
HepB3	Card	9	12-23 m	72280	11
MCV	Card	9	12-23 m	72280	11
MCV	Card or History	63	12-23 m	72280	11
MCV	History	54	12-23 m	72280	11
Pol1	Card	10	12-23 m	72280	11
Pol1	Card or History	74	12-23 m	72280	11

# Pakistan - survey details

Pol1	History	64	12-23 m	72280	11
Pol3	History	55	12-23 m	72280	11
Pol3	Card	9	12-23 m	72280	11
Pol3	Card or History	64	12-23 m	72280	11

MCV	Card or History	57	12-23 m	0	0
MCV	Card	30	12-23 m	0	0
Pol1	Card or History	68	12-23 m	0	0
Pol1	Card	34	12-23 m	0	0
Pol3	Card or History	89	12-23 m	0	0
Pol3	Card	36	12-23 m	0	0

## 2003 Pakistan Social and Living Standards Measurement Survey 2004-2005

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	51	12-23 m	0	0
BCG	C or H <12 months	82	12-23 m	0	0
DTP1	Card	51	12-23 m	0	0
DTP1	C or H <12 months	82	12-23 m	0	0
DTP3	C or H <12 months	80	12-23 m	0	0
DTP3	Card	50	12-23 m	0	0
MCV	C or H <12 months	78	12-23 m	0	0
MCV	Card	49	12-23 m	0	0
Pol1	C or H <12 months	82	12-23 m	0	0
Pol1	Card	51	12-23 m	0	0
Pol3	C or H <12 months	81	12-23 m	0	0
Pol3	Card	50	12-23 m	0	0

## 2001 Pakistan Integrated Household Survey, 2002

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card	34	12-23 m	0	0
BCG	Card or History	67	12-23 m	0	0
DTP1	Card	36	12-23 m	0	0
DTP1	Card or History	71	12-23 m	0	0
DTP3	Card or History	63	12-23 m	0	0
DTP3	Card	33	12-23 m	0	0

## 1998 Assessment of Immunization Coverage, Pakistan February - April 1999

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or Scar	72	12-23 m	3664	37
MCV	Card or History	54	12-23 m	3664	37
Pol3	Card or History	58	12-23 m	3664	37

## 1998 Pakistan Integrated Household Survey, 2002

Vaccine	Confirmation method	Coverage	Age cohort	Sample	Cards seen
BCG	Card or History	65	12-23 m	0	0
BCG	Card	39	12-23 m	0	0
DTP1	Card	41	12-23 m	0	0
DTP1	Card or History	67	12-23 m	0	0
DTP3	Card	37	12-23 m	0	0
DTP3	Card or History	58	12-23 m	0	0
MCV	Card	36	12-23 m	0	0
MCV	Card or History	55	12-23 m	0	0
Pol1	Card or History	77	12-23 m	0	0
Pol1	Card	42	12-23 m	0	0
Pol3	Card	39	12-23 m	0	0
Pol3	Card or History	70	12-23 m	0	0

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)

## Pakistan

### 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	67
1998	68
1999	70
2000	71
2001	74
2002	79
2003	79
2004	78
2005	78
2006	80
2007	78
2008	80
2009	84
2010	84

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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.