

**WHO/UNICEF  
Review of National Immunization Coverage  
1980-2008**

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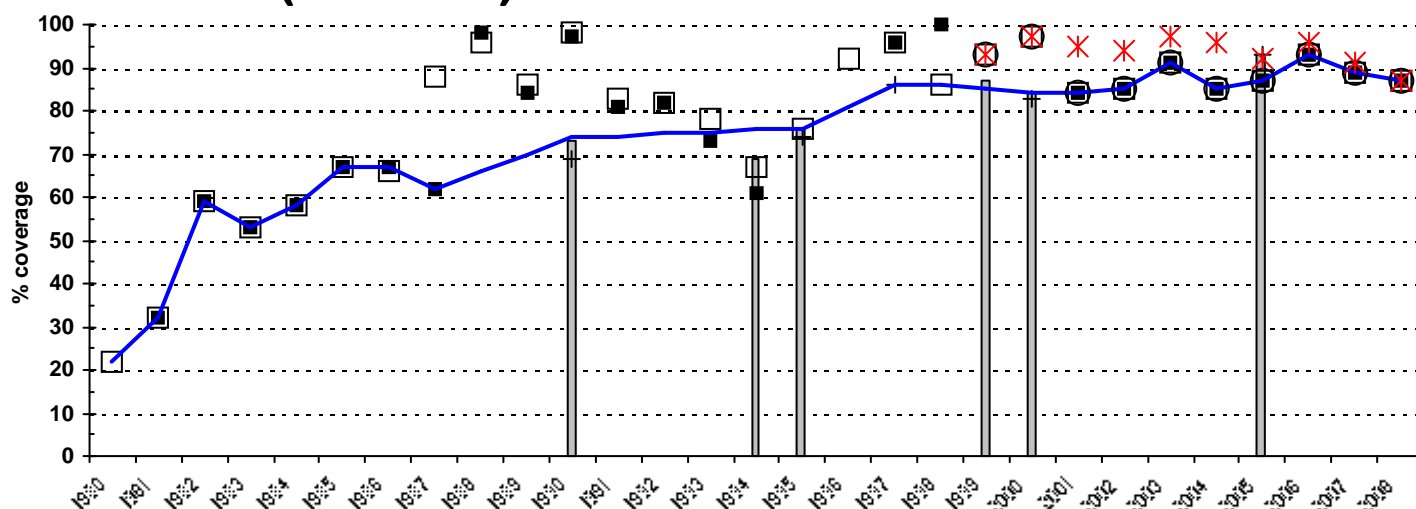
***Nepal***

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**July, 2009**

# Nepal

## BCG (1980-2008)



### Description of trend

Estimates are based on national reports from 1980-1987. From 1987-2000 estimates are based on survey results. From 2001 estimates are based on national reports, supported by survey.

### Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980	22	22					
1981	32	32	32				
1982	59	59	59				
1983	53	53	53				
1984	58	58	58				
1985	67	67	67				
1986	67	66	67				
1987	62	88	62				
1988	66	96	98				
1989	70	86	84				
1990	74	98	97			73	69
1991	74	83	81				
1992	75	82	82				
1993	75	78	73				
1994	76	67	61			69	
1995	76	76				76	74
1996	81	92					
1997	86	96	96				86
1998	86	86	100				
1999	85	93		93	93	87	
2000	84	97		97	97	84	83
2001	84	84	84	84	95		
2002	85	85	85	85	94		
2003	91	91	91	91	97		
2004	85	85	85	85	96		
2005	87	87	87	87	92	93	93
2006	93	93	93	93	96		
2007	89	89	89	89	91		
2008	87	87	87	87	87		

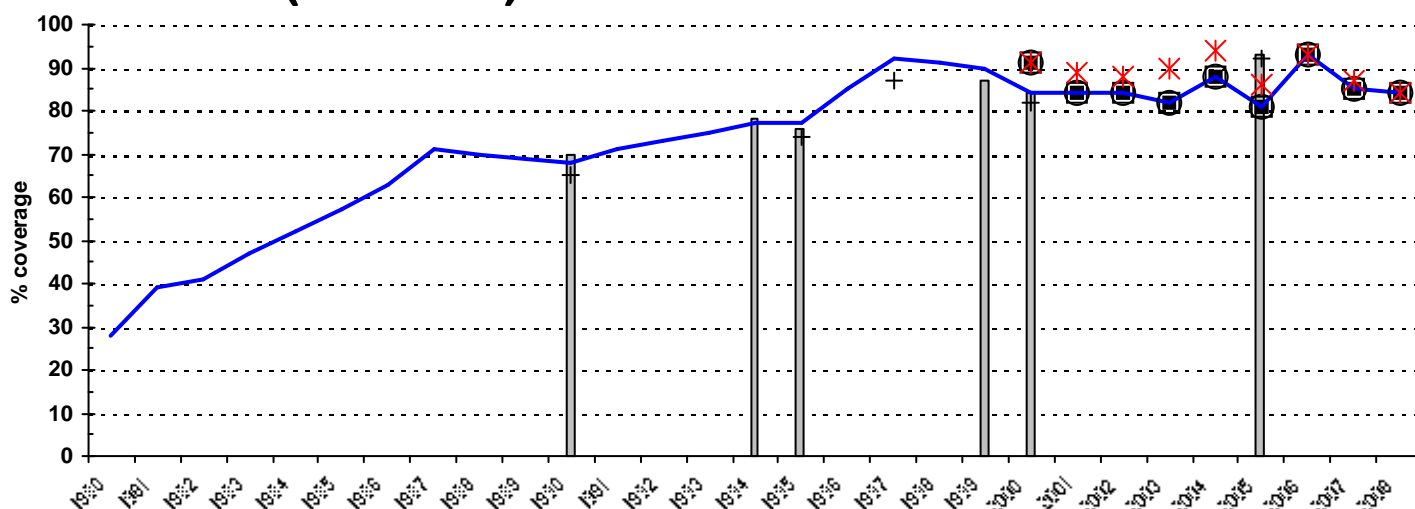
\*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

\*\*Coverage based on registration of doses administered by health care providers.

\*\*\*In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

# Nepal

## DTP1 (1980-2008)



### Description of trend

WHO and UNICEF began requesting data on DTP1 coverage in 2001 and have received national reports reflecting DTP1 coverage from 2001 onward. The DTP1 estimates from 2000 onward are based on these reports, except for 2000 which is based on survey data. For years prior to 2000 the estimates are derived from the WHO/UNICEF estimates of DTP3 and the relationship between the levels of DTP3 coverage and the drop-out between DTP1 and DTP3. This relationship results from an analysis of 282 surveys conducted in 101 countries which were published between 1980 and 2004.

### Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980	28						
1981	39						
1982	41						
1983	47						
1984	52						
1985	57						
1986	63						
1987	71						
1988	70						
1989	69						
1990	68					70	65
1991	71						
1992	73						
1993	75						
1994	77					78	
1995	77					76	74
1996	85						
1997	92						87
1998	91						
1999	90					87	
2000	84	91	91	91	91	84	82
2001	84	84	84	84	89		
2002	84	84	84	84	88		
2003	82	82	82	82	90		
2004	88	88	88	88	94		
2005	81	81	81	81	86	93	92
2006	93	93	93	93	93		
2007	85	85	85	85	87		
2008	84	84	84	84	84		

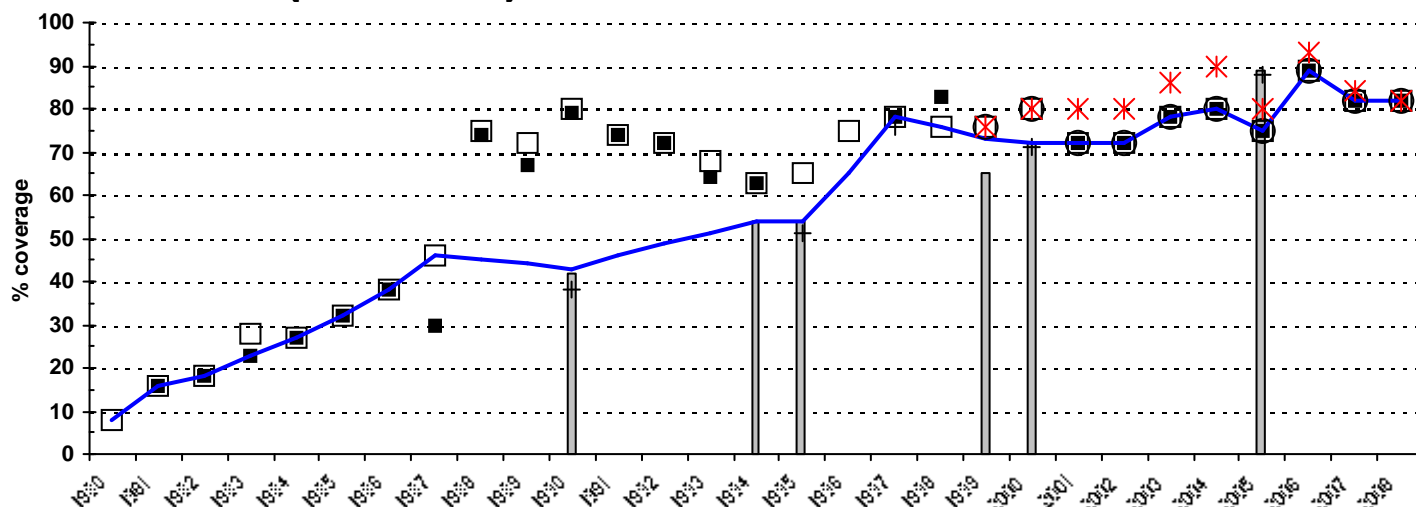
\*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

\*\*Coverage based on registration of doses administered by health care providers.

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# Nepal

## DTP3 (1980-2008)



### Description of trend

Estimates are based on national reports from 1980-1986. From 1987-2000 estimates are based on survey results. From 2001 estimates are based on national reports, supported by survey.

### Data presented in chart

Year	WHO/ UNICEF estimate (%)  —	Reported to:*		Government official estimate (%)  ○	Reported doses administered (%)**  ✕	Survey data (%)***	
		WHO (%)  □	UNICEF (%)  ■			Survey 12-23 months  	Survey <12 months  +
1980	8	8					
1981	16	16	16				
1982	18	18	18				
1983	23	28	23				
1984	27	27	27				
1985	32	32	32				
1986	38	38	38				
1987	46	46	30				
1988	45	75	74				
1989	44	72	67				
1990	43	80	79			42	38
1991	46	74	74				
1992	49	72	72				
1993	51	68	64				
1994	54	63	63			54	
1995	54	65				54	51
1996	65	75					
1997	78	78	78				76
1998	76	76	83				
1999	73	76		76	76	65	
2000	72	80		80	80	72	71
2001	72	72	72	72	80		
2002	72	72	72	72	80		
2003	78	78	78	78	86		
2004	80	80	80	80	90		
2005	75	75	75	75	80		
2006	89	89	89	89	93	89	88
2007	82	82	82	82	84		
2008	82	82	82	82	82		

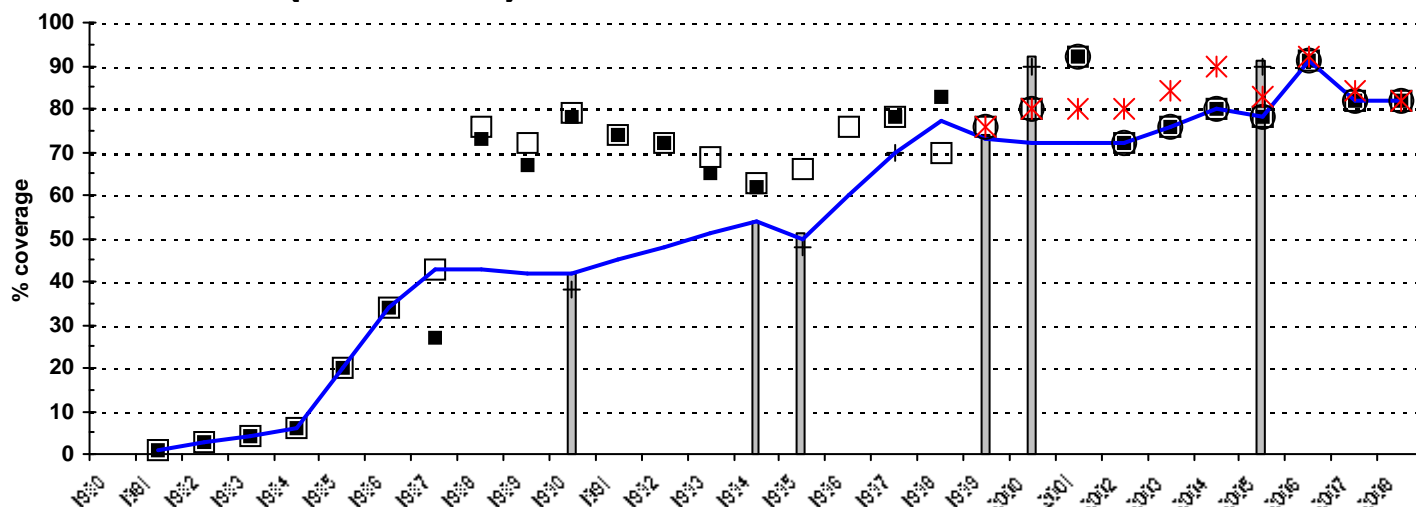
\*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

\*\*Coverage based on registration of doses administered by health care providers.

\*\*\*In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

# Nepal

## Pol3 (1980-2008)



### Description of trend

Estimates are based on national reports from 1980-1986. From 1987-2000 estimates are based on survey results. From 2001 estimates are based on national reports, supported by survey. In 2007 there was a national stock out of polio vaccine for two months.

### Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%) □	UNICEF (%) ■			Survey 12-23 months ▮	Survey <12 months +
1980							
1981	1	1	1				
1982	3	3	3				
1983	4	4	4				
1984	6	6	6				
1985	20	20	20				
1986	34	34	34				
1987	43	43	27				
1988	43	76	73				
1989	42	72	67				
1990	42	79	78			42	38
1991	45	74	74				
1992	48	72	72				
1993	51	69	65				
1994	54	63	62			54	
1995	50	66				51	48
1996	60	76					
1997	70	78	78				70
1998	77	70	83				
1999	73	76		76	76	74	
2000	72	80		80	80	92	90
2001	72	92	92	92	80		
2002	72	72	72	72	80		
2003	76	76	76	76	84		
2004	80	80	80	80	90		
2005	78	78	78	78	83	91	90
2006	91	91	91	91	92		
2007	82	82	82	82	84		
2008	82	82	82	82	82		

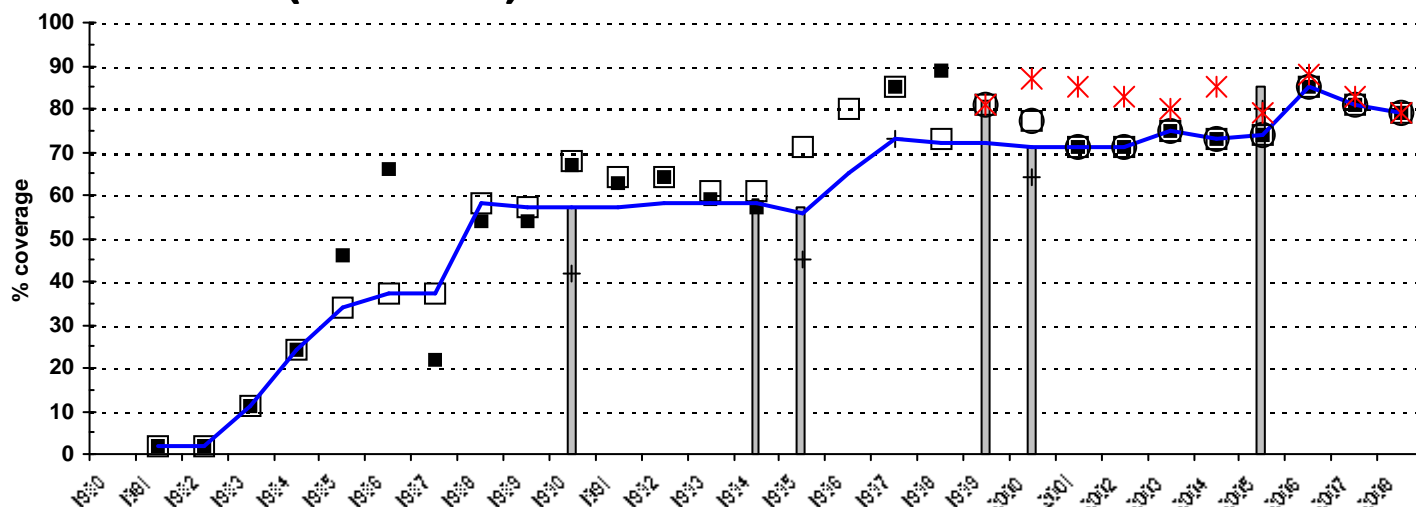
\*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

\*\*Coverage based on registration of doses administered by health care providers.

\*\*\*In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

# Nepal

## MCV (1980-2008)



### Description of trend

Estimates are based on national reports from 1980-1986. From 1987-2000 estimates are based on survey results. From 2001 estimates are based on national reports, supported by survey.

### Data presented in chart

Year	WHO/ UNICEF estimate (%)  —	Reported to:*		Government official estimate (%)  ○	Reported doses administered (%)**  ✕	Survey data (%)***	
		WHO (%)  □	UNICEF (%)  ■			Survey 12-23 months  	Survey <12 months  +
1980							
1981	2	2	2				
1982	2	2	2				
1983	11	11	11				
1984	24	24	24				
1985	34	34	46				
1986	37	37	66				
1987	37	37	22				
1988	58	58	54				
1989	57	57	54				
1990	57	68	67			57	42
1991	57	64	63				
1992	58	64	64				
1993	58	61	59				
1994	58	61	57			59	
1995	56	71				57	45
1996	65	80					
1997	73	85	85				73
1998	72	73	89				
1999	72	81		81	81	82	
2000	71	77		77	87	71	64
2001	71	71	71	71	85		
2002	71	71	71	71	83		
2003	75	75	75	75	80		
2004	73	73	73	73	85		
2005	74	74	74	74	79	85	80
2006	85	85	85	85	88		
2007	81	81	81	81	83		
2008	79	79	79	79	79		

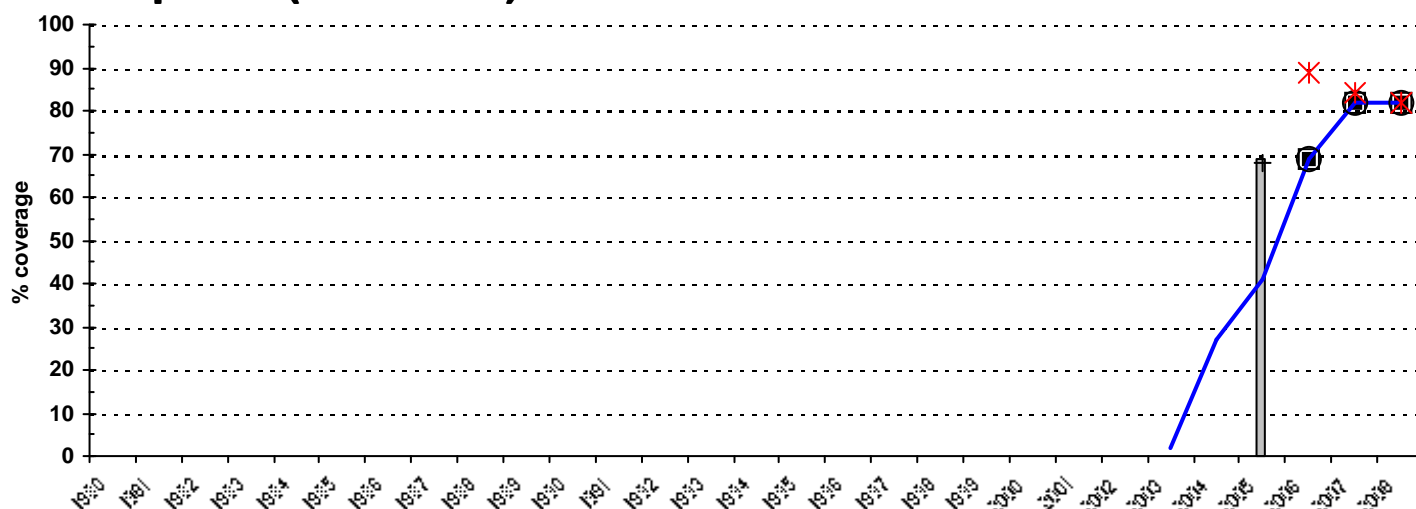
\*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

\*\*Coverage based on registration of doses administered by health care providers.

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# Nepal

## HepB3 (1980-2008)



### Description of trend

Hepatitis B introduced in 2003 for part of the country. National introduction completed in 2004. In 2003 approximately 17% of the country with 15% coverage was achieved; in 2004, 87% coverage was reached in 31% of the country. In 2005, 52% coverage was reached in 41% of the country. In 2007 there was a national stock out of HepB vaccine for one month. WHO & UNICEF estimates based on surviving infants for the country.

### Data presented in chart

Year	WHO/ UNICEF estimate (%)	Reported to:*		Government official estimate (%)	Reported doses administered (%)**	Survey data (%)***	
		WHO (%)	UNICEF (%)			Survey 12-23 months	Survey <12 months
1980							
1981							
1982							
1983							
1984							
1985							
1986							
1987							
1988							
1989							
1990							
1991							
1992							
1993							
1994							
1995							
1996							
1997							
1998							
1999							
2000							
2001							
2002							
2003	2						
2004	27						
2005	41					69	68
2006	69	69	69	69	89	69	68
2007	82	82	82	82	84	82	82
2008	82	82	82	82	82	82	82

\*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

\*\*Coverage based on registration of doses administered by health care providers.

\*\*\*In case more than one survey was implemented in a certain year the highest value is presented. Details of all data are presented in the second section of this report.

# Nepal

## Details Survey Data

### Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
<b>2005 Nepal Demographic and Health Survey 2006</b>								
BCG	Card or History	93.4		12-23 m	984	31.8	2006	
BCG	C or H <12 month	93.2		12-23 m	984	31.8	2006	
DTP1	Card or History	92.7		12-23 m	984	31.8	2006	
DTP1	C or H <12 month	92.5		12-23 m	984	31.8	2006	
DTP3	Card or History	88.6		12-23 m	984	31.8	2006	
DTP3	C or H <12 month	88		12-23 m	984	31.8	2006	
Pol3	Card or History	91.1		12-23 m	984	31.8	2006	
Pol3	C or H <12 month	90.5		12-23 m	984	31.8	2006	
MCV	Card or History	85		12-23 m	984	31.8	2006	
MCV	C or H <12 month	80		12-23 m	984	31.8	2006	
HepB	Card or History	69.4		12-23 m	984	31.8	2006	
HepB	C or H <12 month	68.4		12-23 m	984	31.8	2006	
PAB	n.a.	78.1		CBAW	4066		2006	
<b>2000 Nepal Demographic and Health Survey 2001</b>								
BCG	History	68.3		12-23 m	1313	16.2	2001	
BCG	Card or History	84.5		12-23 m	1313	16.2	2001	
BCG	Card	16.1		12-23 m	1313	16.2	2001	
BCG	C or H <12 month	82.9		12-23 m	1313	16.2	2001	
DTP1	History	68.1		12-23 m	1313	16.2	2001	
DTP1	Card or History	84		12-23 m	1313	16.2	2001	
DTP1	Card	15.8		12-23 m	1313	16.2	2001	
DTP1	C or H <12 month	82.5		12-23 m	1313	16.2	2001	
DTP3	History	58		12-23 m	1313	16.2	2001	
DTP3	Card or History	72.1		12-23 m	1313	16.2	2001	
DTP3	Card	14.2		12-23 m	1313	16.2	2001	
DTP3	C or H <12 month	70.6		12-23 m	1313	16.2	2001	
Pol3	History	76		12-23 m	1313	16.2	2001	
Pol3	Card or History	91.5		12-23 m	1313	16.2	2001	
Pol3	Card	15.5		12-23 m	1313	16.2	2001	
Pol3	C or H <12 month	90.4		12-23 m	1313	16.2	2001	
MCV	History	57.7		12-23 m	1313	16.2	2001	
MCV	Card or History	70.6		12-23 m	1313	16.2	2001	
MCV	Card	12.9		12-23 m	1313	16.2	2001	
MCV	C or H <12 month	63.6		12-23 m	1313	16.2	2001	
<b>1999 Report on the Situation of Women, Children and Households 2000, 2001</b>								
BCG	Card or History	86.8		12-23 m	1068	79.4	2000	
DTP1	Card or History	86.8		12-23 m	1068	79.4	2000	
DTP3	Card or History	65.4		12-23 m	1068	79.4	2000	
Pol3	Card or History	74.4		12-23 m	1068	79.4	2000	
MCV	Card or History	81.8		12-23 m	1068	79.4	2000	
<b>1997 Nepal, Routine Immunization and NID Coverage Survey Report 1998</b>								
BCG	C or H <12 month	86.3		12-23 m		17.2	1998	
DTP1	C or H <12 month	86.8		12-23 m		17.2	1998	
DTP3	C or H <12 month	75.9		12-23 m		17.2	1998	
Pol3	C or H <12 month	70.2		12-23 m		17.2	1998	
MCV	C or H <12 month	73.1		12-23 m		17.2	1998	

# Nepal

## Details Survey Data

### Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
<b>1995 Nepal Family Health Survey 1996, 1997</b>								
BCG	Card or History	76		12-23 m	1379	21.7	1996	
BCG	C or H <12 month	73.1		12-23 m	1379	21.7	1996	
BCG	C or H <12 month	74.2		24-35 m	1332	12.1	1996	
DTP1	Card or History	76.4		12-23 m	1379	21.7	1996	
DTP1	C or H <12 month	73.9		12-23 m	1379	21.7	1996	
DTP1	C or H <12 month	73.3		24-35 m	1332	12.1	1996	
DTP3	Card or History	53.5		12-23 m	1379	21.7	1996	
DTP3	C or H <12 month	50.8		12-23 m	1379	21.7	1996	
DTP3	C or H <12 month	49.3		24-35 m	1332	12.1	1996	
Pol3	Card or History	50.9		12-23 m	1379	21.7	1996	
Pol3	C or H <12 month	48.3		12-23 m	1379	21.7	1996	
Pol3	C or H <12 month	47.9		24-35 m	1332	12.1	1996	
MCV	Card or History	56.6		12-23 m	1379	21.7	1996	
MCV	C or H <12 month	45		12-23 m	1379	21.7	1996	
MCV	C or H <12 month	42		24-35 m	1332	12.1	1996	

### 1994 Nepal Multiple Indicator Surveillance, Phase I, Jan to March 1995, Health and Nutrition

BCG	Card or History	69		< 36 m			1995	Children <36 months, weighted
DTP1	Card or History	78.2		12-36 m			1995	Children 12-36 months, weighted
DTP3	Card or History	54.1		12-36 m			1995	Children 12-36 months, weighted
Pol3	Card or History	54.1		12-36 m			1995	Children 12-36 months, weighted
MCV	Card or History	58.6		12-36 m			1995	Children 12-36 months, weighted

### 1990 Nepal Fertility, Family Planning and Health Survey 1991, 1993

BCG	Card or History	72.9		12-23 m	4104	20.6	1991	
BCG	C or H <12 month	68.8		12-23 m	4104		1991	
BCG	C or H <12 month	58.9		24-35 m	3662		1991	
BCG	C or H <12 month	45.8		36-47 m	3949		1991	
BCG	C or H <12 month	38.4		48-59 m	3407		1991	
DTP1	Card or History	70.1		12-23 m	4104	20.6	1991	
DTP1	C or H <12 month	64.7		12-23 m	4104		1991	
DTP1	C or H <12 month	54.9		24-35 m	3662		1991	
DTP1	C or H <12 month	41.9		36-47 m	3949		1991	
DTP1	C or H <12 month	32		48-59 m	3407		1991	
DTP3	Card or History	42.4		12-23 m	4104	20.6	1991	
DTP3	C or H <12 month	37.8		12-23 m	4104		1991	
DTP3	C or H <12 month	27.5		24-35 m	3662		1991	
DTP3	C or H <12 month	23.2		36-47 m	3949		1991	
DTP3	C or H <12 month	13.4		48-59 m	3407		1991	
Pol3	Card or History	42.4		12-23 m	4104	20.6	1991	
Pol3	C or H <12 month	37.7		12-23 m	4104		1991	
Pol3	C or H <12 month	26.9		24-35 m	3662		1991	
Pol3	C or H <12 month	23.3		36-47 m	3949		1991	
Pol3	C or H <12 month	13.8		48-59 m	3407		1991	
MCV	Card or History	57.4		12-23 m	4104	20.6	1991	
MCV	C or H <12 month	42.4		12-23 m	4104		1991	
MCV	C or H <12 month	25.8		24-35 m	3662		1991	
MCV	C or H <12 month	19.3		36-47 m	3949		1991	
MCV	C or H <12 month	17.5		48-59 m	3407		1991	

## Nepal

### 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.

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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.

## Nepal

<b>Year</b>	<b>PAB coverage estimate (%)</b>
1980	1
1981	4
1982	8
1983	13
1984	15
1985	18
1986	29
1987	25
1988	37
1989	32
1990	35
1991	36
1992	36
1993	45
1994	47
1995	48
1996	49
1997	59
1998	61
1999	62
2000	67
2001	76
2002	85
2003	90
2004	90
2005	88
2006	86
2007	84
2008	81