

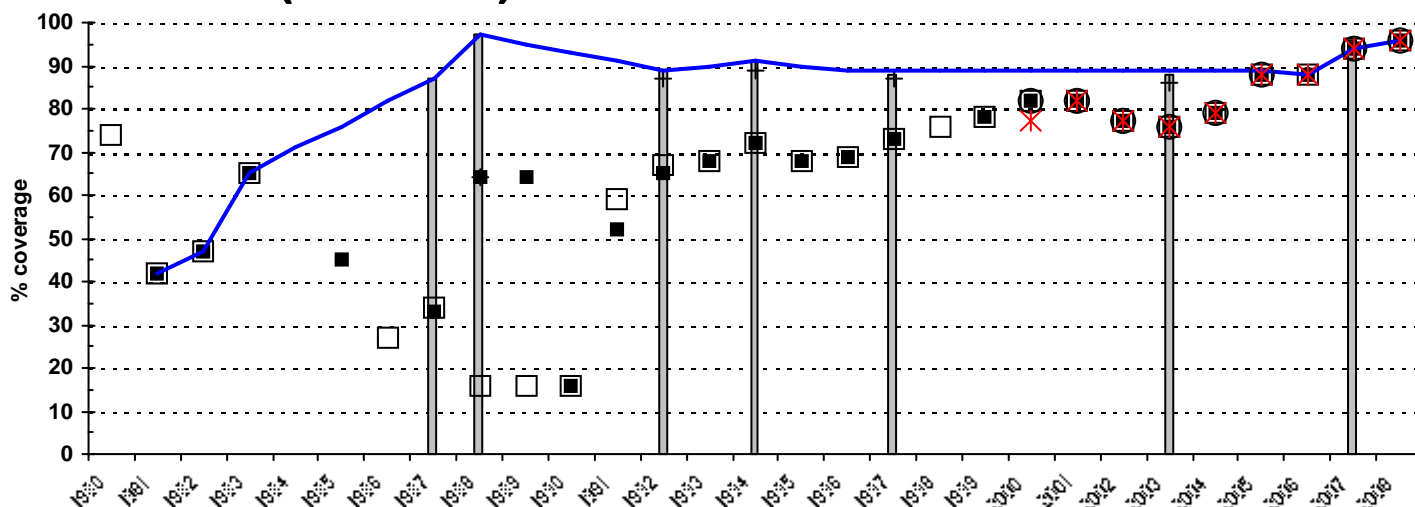
**WHO/UNICEF
Review of National Immunization Coverage
1980-2008**

Turkey

July, 2009

Turkey

BCG (1980-2008)



Description of trend

Officially reported data are fluctuating, comparably low and inconsistent with survey data and with coverage data reported for other antigens. trend follows five survey points between 1987 and 1997 which show more consistent coverage rates. A slight increase can be observed between 1987 and 1988, which might be due to a campaign that accelerated coverage. Estimates between 1997-2004 are based on survey results. From 2005 onward survey results support reported data.

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	42	74					
1981	47	42	42				
1982	65	47	47				
1983	71	65	65				
1984	76		45				
1985	82	27					
1986	87	34	33			87	
1987	97	16	64			97	64
1988	95	16	64				
1989	93	16	16				
1990	91	59	52				
1991	89	67	65			89	87
1992	90	68	68				
1993	91	72	72			91	89
1994	90	68	68				
1995	89	69	69				
1996	89	73	73			88	87
1997	89	76					
1998	89	78	78				
1999	89	82	82	82	77		
2000	89	82	82	82	82		
2001	89	77	77	77	77		
2002	89	76	76	76	76	88	86
2003	89	79	79	79	79		
2004	89	88	88	88	88		
2005	88	88	88	88	88		
2006	94	94	94	94	94	96	
2007	96	96	96	96	96		
2008							

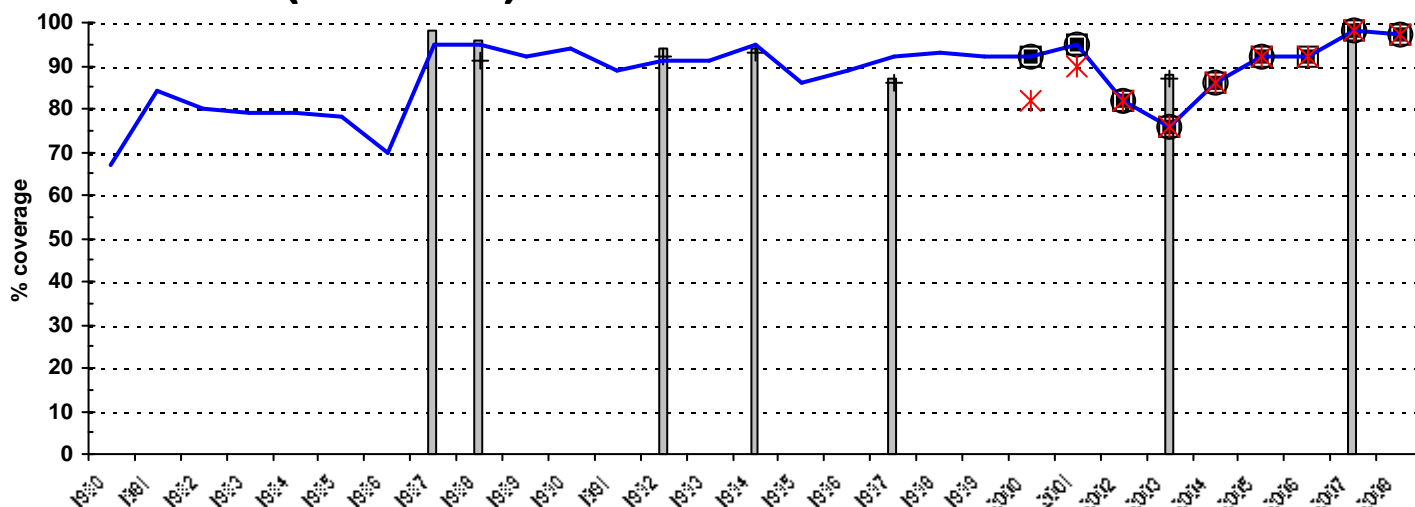
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Turkey

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 2000-2004 are based on these reports. 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. Estimates since 2000 are based on reported data 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	67						
1981	84						
1982	80						
1983	79						
1984	79						
1985	78						
1986	70						
1987	95					98	
1988	95					96	91
1989	92						
1990	94						
1991	89						
1992	91					94	92
1993	91						
1994	95					94	93
1995	86						
1996	89						
1997	92					87	86
1998	93						
1999	92						
2000	92	92	92	92	82		
2001	95	95	95	95	90		
2002	82	82	82	82	82		
2003	76	76	76	76	76	88	87
2004	86	86	86	86	86		
2005	92	92	92	92	92		
2006	92	92	92	92	92		
2007	98	98	98	98	98	97	
2008	97	97	97	97	97		

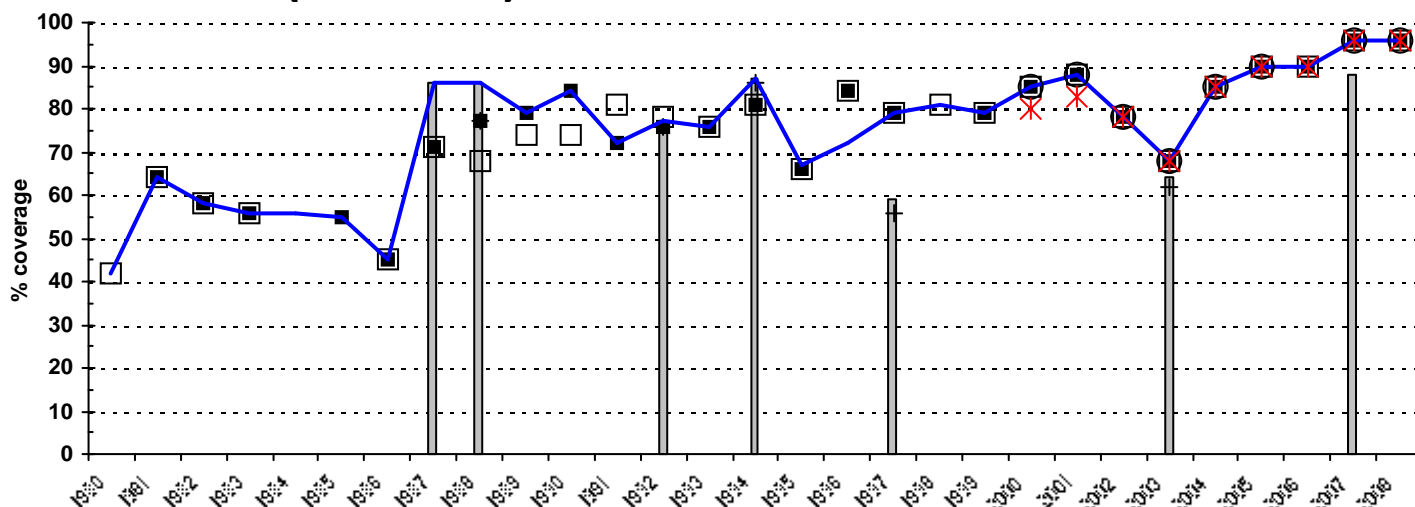
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

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

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Turkey

DTP3 (1980-2008)



Description of trend

A steep increase is reported in the late 1980s with survey data showing higher coverage rates than officially reported. Survey data support of reported data in the mid 1990s. DHS results for 1997 suggest a lower than anticipated DTP3 coverage. Estimates since 2000 are based on the government's official estimate confirmed by survey results.

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	42	42					
1981	64	64	64				
1982	58	58	58				
1983	56	56	56				
1984	56						
1985	55		55				
1986	45	45	45				
1987	86	71	71			86	
1988	86	68	77			86	77
1989	79	74	79				
1990	84	74	84				
1991	72	81	72				
1992	77	78	76			77	76
1993	76	76	76				
1994	87	81	81			87	86
1995	67	66	66				
1996	72	84	84				
1997	79	79	79			59	56
1998	81	81					
1999	79	79	79				
2000	85	85	85	85	80		
2001	88	88	88	88	83		
2002	78	78	78	78	78		
2003	68	68	68	68	68	64	62
2004	85	85	85	85	85		
2005	90	90	90	90	90		
2006	90	90	90	90	90		
2007	96	96	96	96	96	88	
2008	96	96	96	96	96		

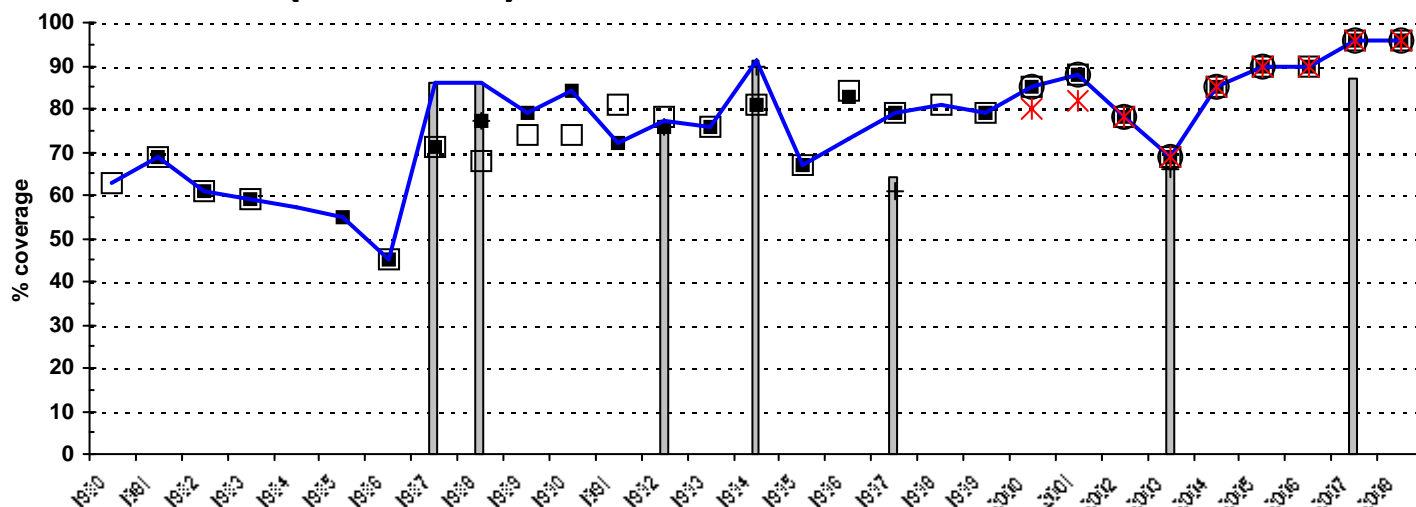
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Turkey

Pol3 (1980-2008)



Description of trend

Estimates since 1989 are based on the government's official estimate confirmed by surveys.

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	63	63					
1981	69	69	69				
1982	61	61	61				
1983	59	59	59				
1984	57						
1985	55		55				
1986	45	45	45				
1987	86	71	71			86	
1988	86	68	77			86	77
1989	79	74	79				
1990	84	74	84				
1991	72	81	72				
1992	77	78	76			77	76
1993	76	76	76				
1994	91	81	81			91	90
1995	67	67	67				
1996	73	84	83				
1997	79	79	79			64	61
1998	81	81					
1999	79	79	79				
2000	85	85	85	85	80		
2001	88	88	88	88	82		
2002	78	78	78	78	78		
2003	69	69	69	69	69	69	66
2004	85	85	85	85	85		
2005	90	90	90	90	90		
2006	90	90	90	90	90		
2007	96	96	96	96	96	87	
2008	96	96	96	96	96		

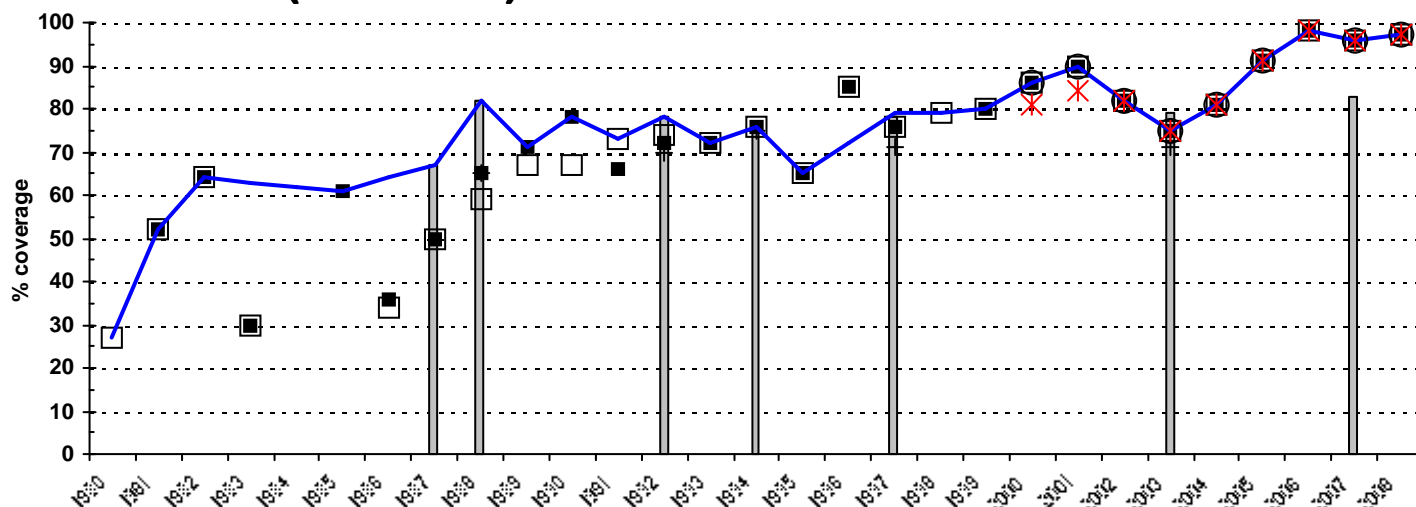
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Turkey

MCV (1980-2008)



Description of trend

Estimates since 1989 are based on the government's official estimate confirmed by surveys. 2007 DHS show lower coverage.

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	27	27					
1981	52	52	52				
1982	64	64	64				
1983	63	30	30				
1984	62						
1985	61		61				
1986	64	34	36				
1987	67	50	50			67	
1988	82	59	65			82	65
1989	71	67	71				
1990	78	67	78				
1991	73	73	66				
1992	78	74	72			78	70
1993	72	72	72				
1994	76	76	76			76	75
1995	65	65	65				
1996	72	85	85				
1997	79	76	76			78	71
1998	79	79					
1999	80	80	80				
2000	86	86	86	86	81		
2001	90	90	90	90	84		
2002	82	82	82	82	82		
2003	75	75	75	75	75	79	71
2004	81	81	81	81	81		
2005	91	91	91	91	91		
2006	98	98	98	98	98		
2007	96	96	96	96	96	83	
2008	97	97	97	97	97		

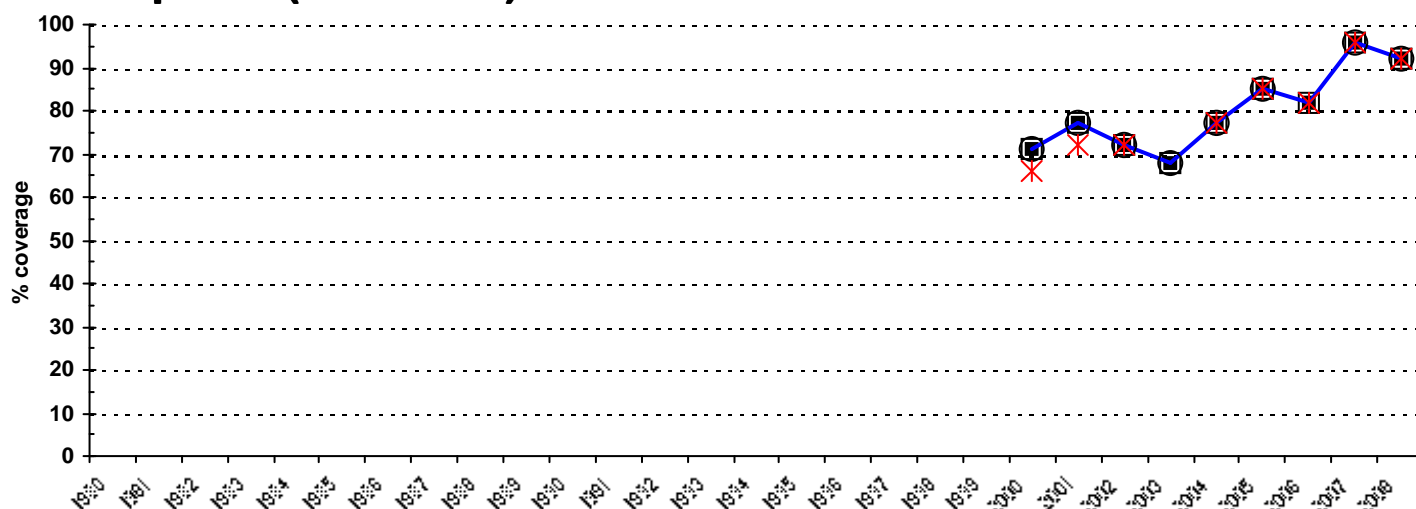
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Turkey

HepB3 (1980-2008)



Description of trend

Hepatitis B vaccine was introduced in 2000. Estimates are based on the government's official estimate.

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	71	71	71	71	66		
2001	77	77	77	77	72		
2002	72	72	72	72	72		
2003	68	68	68	68			
2004	77	77	77	77	77		
2005	85	85	85	85	85		
2006	82	82	82	82	82		
2007	96	96	96	96	96		
2008	92	92	92	92	92		

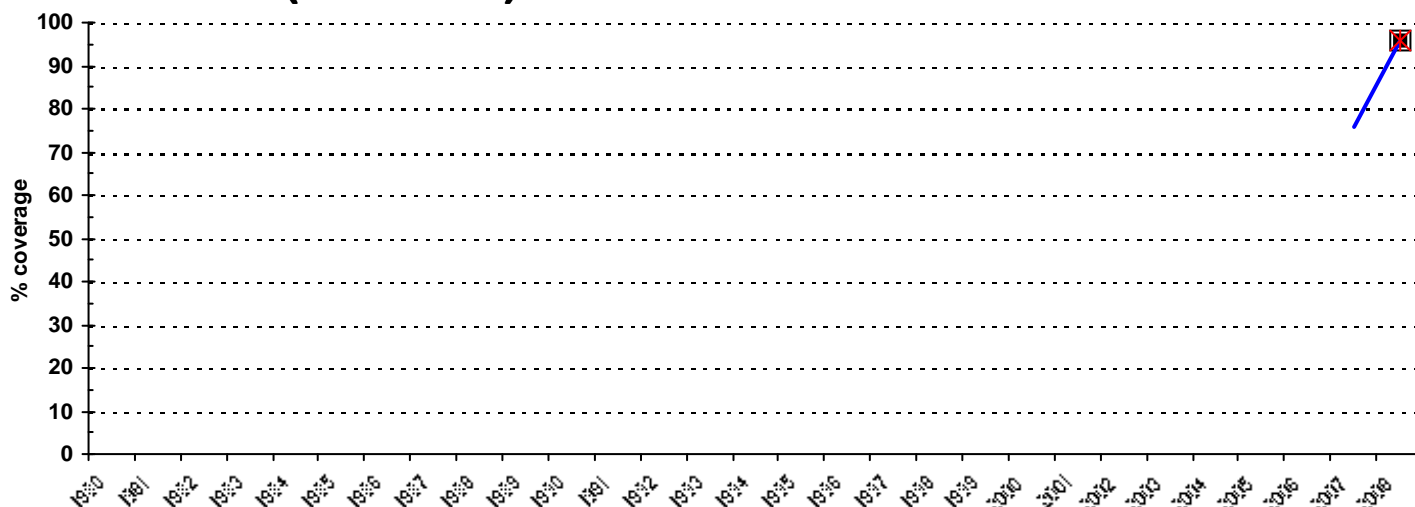
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Turkey

Hib3 (1980-2008)



Description of trend

Hib vaccine introduced in 2006. 91% national coverage achieved during last 10 months of 2007.

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							
2004							
2005							
2006							
2007	76						
2008	96	96	96		96		

*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.

Turkey

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
2007 Turkey Demographic and Health Survey 2008, Preliminary Report								
BCG	Card or History	96		12-23 m	698	77.4	2008/2009	
DTP1	Card or History	97.3		12-23 m	698	77.4	2008/2009	
DTP3	Card or History	88.5		12-23 m	698	77.4	2008/2009	
Pol3	Card or History	87.4		12-23 m	698	77.4	2008/2009	
MCV	Card or History	83.2		12-23 m	698	77.4	2008/2009	
2003 Turkey Demographic and Health Survey 2003								
BCG	History	36.2		12-23 m	749	53.7	2003	
BCG	Card or history	87.7		12-23 m	749	53.7	2003	
BCG	Card	51.5		12-23 m	749	53.7	2003	
BCG	C or H <12 month	86.2		12-23 m	749	53.7	2003	
DTP1	History	36.6		12-23 m	749	53.7	2003	
DTP1	Card or history	88.5		12-23 m	749	53.7	2003	
DTP1	Card	51.9		12-23 m	749	53.7	2003	
DTP1	C or H <12 month	86.9		12-23 m	749	53.7	2003	
DTP3	History	15.9		12-23 m	749	53.7	2003	
DTP3	Card or history	64.4		12-23 m	749	53.7	2003	
DTP3	Card	48.5		12-23 m	749	53.7	2003	
DTP3	C or H <12 month	62.2		12-23 m	749	53.7	2003	
Pol3	History	20.7		12-23 m	749	53.7	2003	
Pol3	Card or history	69.1		12-23 m	749	53.7	2003	
Pol3	Card	48.4		12-23 m	749	53.7	2003	
Pol3	C or H <12 month	66.5		12-23 m	749	53.7	2003	
MCV	History	30.5		12-23 m	749	53.7	2003	
MCV	Card or history	79.4		12-23 m	749	53.7	2003	
MCV	Card	48.9		12-23 m	749	53.7	2003	
MCV	C or H <12 month	71.2		12-23 m	749	53.7	2003	
1997 Turkish Demographic and Health Survey 1998, 1999								
BCG	Card or History	88.5		12-23 m	689	38.5	1998	
BCG	C or H <12 month	87.4		12-23 m	689	38.5	1998	
BCG	C or H <12 month	83.7		24-35 m	612	25	1998	
BCG	C or H <12 month	76.1		36-47 m	612	12.8	1998	
BCG	C or H <12 month	83.8		48-59 m	674	13.5	1998	
DTP1	Card or History	86.9		12-23 m	689	38.5	1998	
DTP1	C or H <12 month	85.5		12-23 m	689	38.5	1998	
DTP1	C or H <12 month	79.6		24-35 m	612	25	1998	
DTP1	C or H <12 month	64.3		36-47 m	612	12.8	1998	
DTP1	C or H <12 month	77.8		48-59 m	674	13.5	1998	
DTP3	Card or History	58.7		12-23 m	689	38.5	1998	
DTP3	C or H <12 month	55.8		12-23 m	689	38.5	1998	
DTP3	C or H <12 month	46.9		24-35 m	612	25	1998	
DTP3	C or H <12 month	41.4		36-47 m	612	12.8	1998	
DTP3	C or H <12 month	48		48-59 m	674	13.5	1998	
Pol3	Card or History	64.4		12-23 m	689	38.5	1998	
Pol3	C or H <12 month	60.8		12-23 m	689	38.5	1998	
Pol3	C or H <12 month	55.9		24-35 m	612	25	1998	
Pol3	C or H <12 month	49.4		36-47 m	612	12.8	1998	
Pol3	C or H <12 month	58.3		48-59 m	674	13.5	1998	
MCV	Card or History	78.5		12-23 m	689	38.5	1998	
MCV	C or H <12 month	70.9		12-23 m	689	38.5	1998	

Turkey

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
MCV	C or H <12 month	58.8		24-35 m	612	25	1998	
MCV	C or H <12 month	52.7		36-47 m	612	12.8	1998	
MCV	C or H <12 month	58		48-59 m	674	13.5	1998	

1994 The Turkey Multiple Indicator Cluster Survey 1995, Preliminary Report

BCG	Card or History	90.8		12-23 m		55.4	1995	
BCG	C or H <12 month	89.1		12-23 m		55.4	1995	
DTP1	Card or History	94.2		12-23 m		55.4	1995	
DTP1	C or H <12 month	93		12-23 m		55.4	1995	
DTP3	Card or History	87.4		12-23 m		55.4	1995	
DTP3	C or H <12 month	86.4		12-23 m		55.4	1995	
Pol3	Card or History	90.6		12-23 m		55.4	1995	
Pol3	C or H <12 month	89.7		12-23 m		55.4	1995	
MCV	Card or History	75.8		12-23 m		55.4	1995	
MCV	C or H <12 month	75.3		12-23 m		55.4	1995	

1992 Turkish Demographic and Health Survey 1993, 1994

BCG	Card or History	89.1		12-23 m	716	41.6	1993	
BCG	C or H <12 month	87.4		12-23 m	716	41.6	1993	
BCG	C or H <12 month	84.3		24-35 m	653	26.7	1993	
BCG	C or H <12 month	86.7		36-47 m	717	19	1993	
BCG	C or H <12 month	74.8		48-59 m	697	15.1	1993	
DTP1	Card or History	93.5		12-23 m	716	41.6	1993	
DTP1	C or H <12 month	91.8		12-23 m	716	41.6	1993	
DTP1	C or H <12 month	89.6		24-35 m	653	26.7	1993	
DTP1	C or H <12 month	85.3		36-47 m	717	19	1993	
DTP1	C or H <12 month	80.4		48-59 m	697	15.1	1993	
DTP3	Card or History	77.1		12-23 m	716	41.6	1993	
DTP3	C or H <12 month	76.2		12-23 m	716	41.6	1993	
DTP3	C or H <12 month	70.9		24-35 m	653	26.7	1993	
DTP3	C or H <12 month	68.8		36-47 m	717	19	1993	
DTP3	C or H <12 month	67.9		48-59 m	697	15.1	1993	
Pol3	Card or History	77.2		12-23 m	716	41.6	1993	
Pol3	C or H <12 month	76.4		12-23 m	716	41.6	1993	
Pol3	C or H <12 month	71.2		24-35 m	653	26.7	1993	
Pol3	C or H <12 month	69.3		36-47 m	717	19	1993	
Pol3	C or H <12 month	68.2		48-59 m	697	15.1	1993	
MCV	Card or History	77.8		12-23 m	716	41.6	1993	
MCV	C or H <12 month	69		12-23 m	716	41.6	1993	
MCV	C or H <12 month	70.2		24-35 m	653	26.7	1993	
MCV	C or H <12 month	59.4		36-47 m	717	19	1993	
MCV	C or H <12 month	58		48-59 m	697	15.1	1993	

1988 Bağışıklama oranı değerlendirme araştırması sonuçları, Türkiye 1989

BCG	Card or History	97		12-23 m			1989	
BCG	C or H <12 month	64		12-23 m			1989	
DTP1	Card or History	96		12-23 m			1989	
DTP1	C or H <12 month	91		12-23 m			1989	
DTP3	Card or History	86		12-23 m			1989	
DTP3	C or H <12 month	77		12-23 m			1989	
Pol3	Card or History	86		12-23 m			1989	
Pol3	C or H <12 month	77		12-23 m			1989	
MCV	Card or History	82		12-23 m			1989	

Turkey

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
MCV	C or H <12 month	65		12-23 m			1989	

1987 National Programme Review, EPI Turkey, Final Draft, February 1988

BCG	Card or History	87		12-23 m	2519	67	1988	Weighted average, Confirmation method also includes Scar
DTP1	Card or History	98		12-23 m	2519	67	1988	Weighted average
DTP3	Card or History	86		12-23 m	2519	67	1988	Weighted average
Pol3	Card or History	86		12-23 m	2519	67	1988	Weighted average
MCV	Card or History	67		12-23 m	2519	67	1988	Weighted average

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.

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.

Turkey

Year	PAB coverage estimate (%)
1980	
1981	
1982	
1983	
1984	
1985	
1986	
1987	
1988	11
1989	15
1990	20
1991	75
1992	75
1993	75
1994	43
1995	42
1996	43
1997	47
1998	48
1999	49
2000	50
2001	52
2002	52
2003	53
2004	77
2005	62
2006	68
2007	70
2008	71