

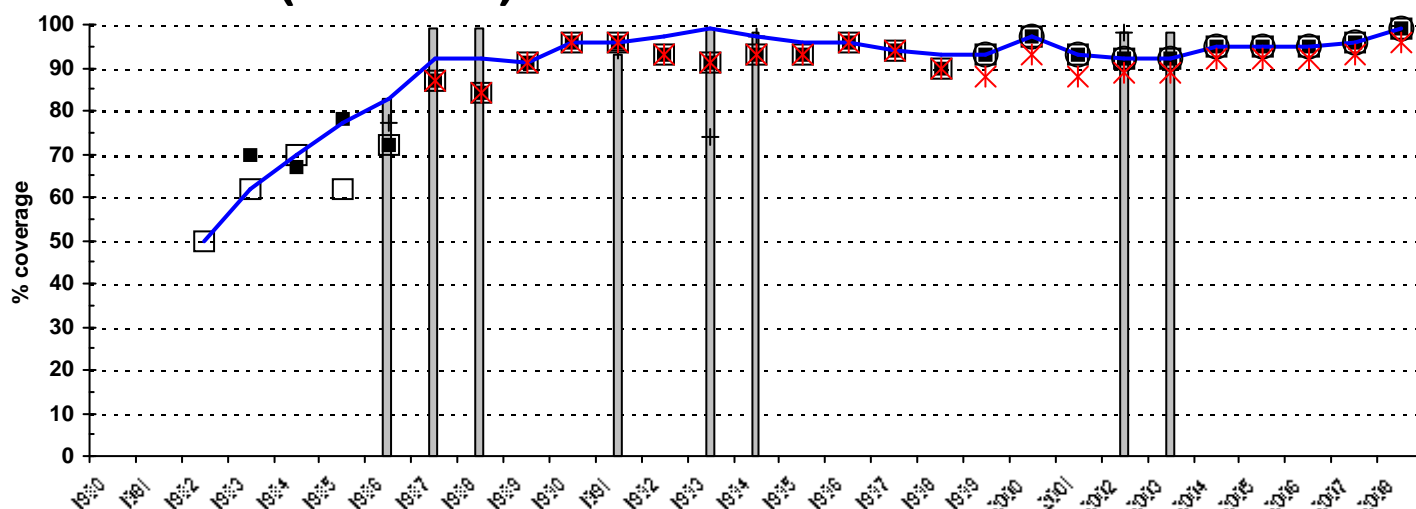
**WHO/UNICEF
Review of National Immunization Coverage
1980-2008**

Morocco

July, 2009

Morocco

BCG (1980-2008)



Description of trend

Estimated immunization coverage levels are based on reported data, supported by survey results. In 1987 and 1988 survey data shows high coverage because the private sector is reflected as well.

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	50	50					
1983	62	62	70				
1984	70	70	67				
1985	77	62	78				
1986	83	72	72			83	77
1987	92	87	87		87	99	
1988	92	84	84		84	99	
1989	91	91	91		91		
1990	96	96	96		96		
1991	96	96	96		96	93	94
1992	97	93	93		93		
1993	99	91	91		91	99	74
1994	97	93	93		93	98	97
1995	96	93	93		93		
1996	96	96	96		96		
1997	94	94	94		94		
1998	93	90	90		90		
1999	93	93	93	93	88		
2000	97	97	97	97	93		
2001	93	93	93	93	88		
2002	92	92	92	92	89	98	98
2003	92	92	92	92	89	98	
2004	95	95	95	95	92		
2005	95	95	95	95	92		
2006	95	95	95	95	92		
2007	96	96	96	96	93		
2008	99	99	99	99	96		

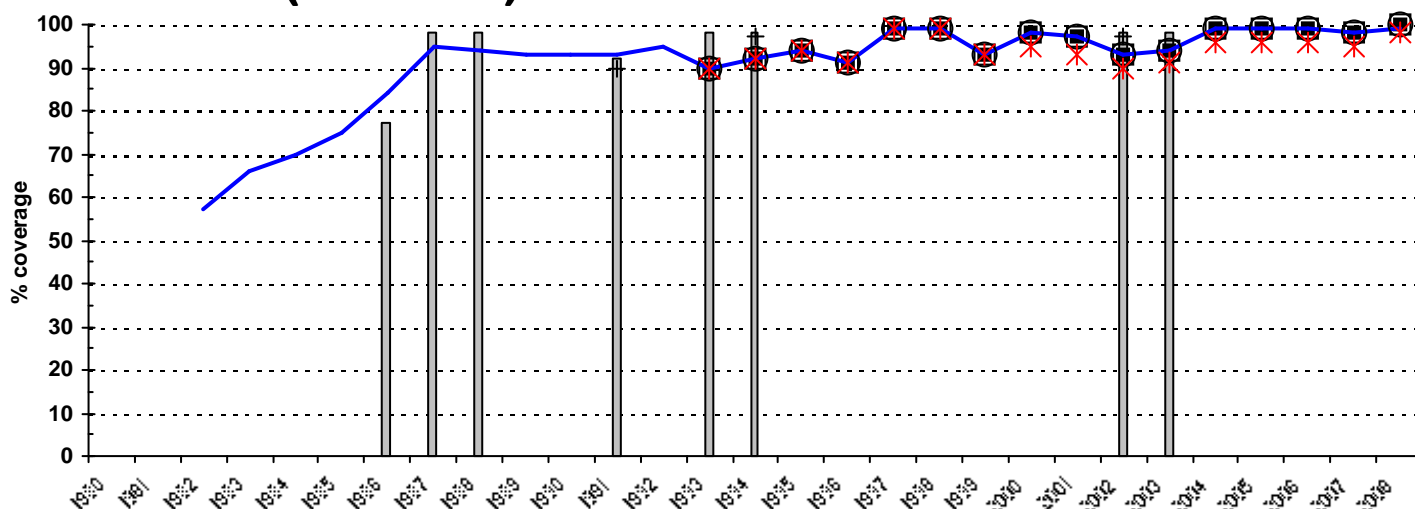
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Morocco

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. 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							
1981							
1982	57						
1983	66						
1984	70						
1985	75						
1986	84					77	
1987	95					98	
1988	94					98	
1989	93						
1990	93						
1991	93					92	90
1992	95						
1993	90	90	90	90	90	98	
1994	92	92	92	92	92	98	97
1995	94	94	94	94	94		
1996	91	91	91	91	91		
1997	99	99	99	99	99		
1998	99	99	99	99	99		
1999	93	93	93	93	93		
2000	98	98	98	98	95		
2001	97	97	97	97	93		
2002	93	93	93	93	90	98	97
2003	94	94	94	94	91	98	
2004	99	99	99	99	96		
2005	99	99	99	99	96		
2006	99	99	99	99	96		
2007	98	98	98	98	95		
2008	99	100	100	100	98		

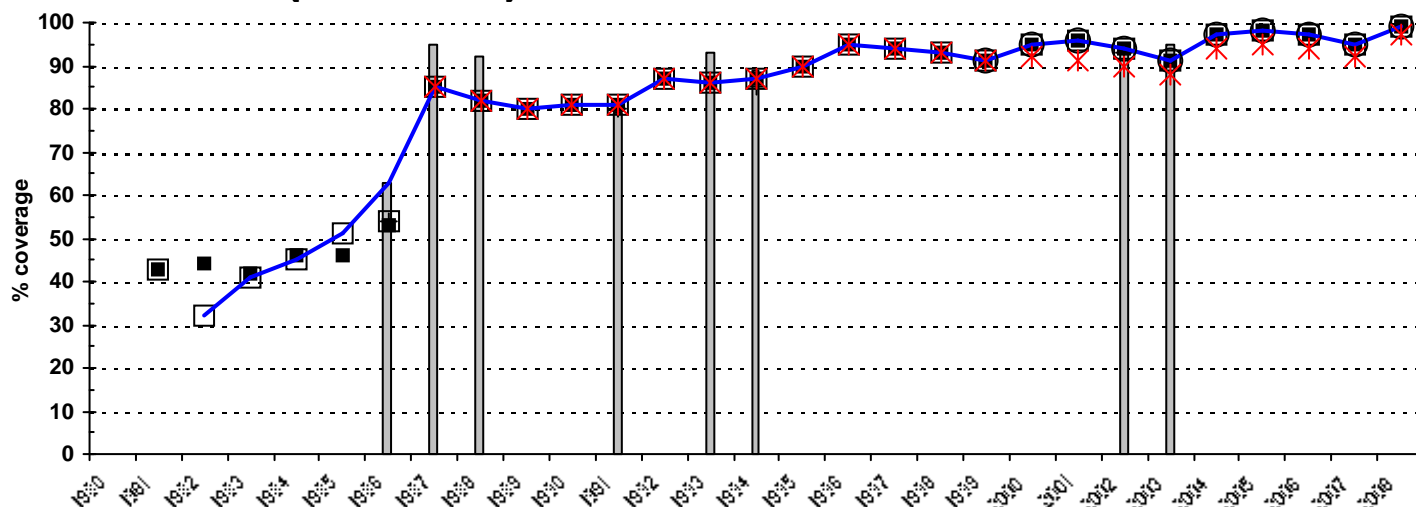
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

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

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Morocco

DTP3 (1980-2008)



Description of trend

Estimated immunization coverage levels are based on reported data, supported 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							
1981		43	43				
1982	32	32	44				
1983	41	41	42				
1984	45	45	46				
1985	51	51	46				
1986	63	54	53			63	54
1987	85	85	85		85	95	
1988	82	82	82		82	92	
1989	80	80	80		80		
1990	81	81	81		81		
1991	81	81	81		81	79	80
1992	87	87	87		87		
1993	86	86	86		86	93	
1994	87	87	87		87	89	85
1995	90	90	90		90		
1996	95	95	95		95		
1997	94	94	94		94		
1998	93	93	93		93		
1999	91	91	91	91	91		
2000	95	95	95	95	92		
2001	96	96	96	96	91		
2002	94	94	94	94	90	95	93
2003	91	91	91	91	88	95	
2004	97	97	97	97	94		
2005	98	98	98	98	95		
2006	97	97	97	97	94		
2007	95	95	95	95	92		
2008	99	99	99	99	97		

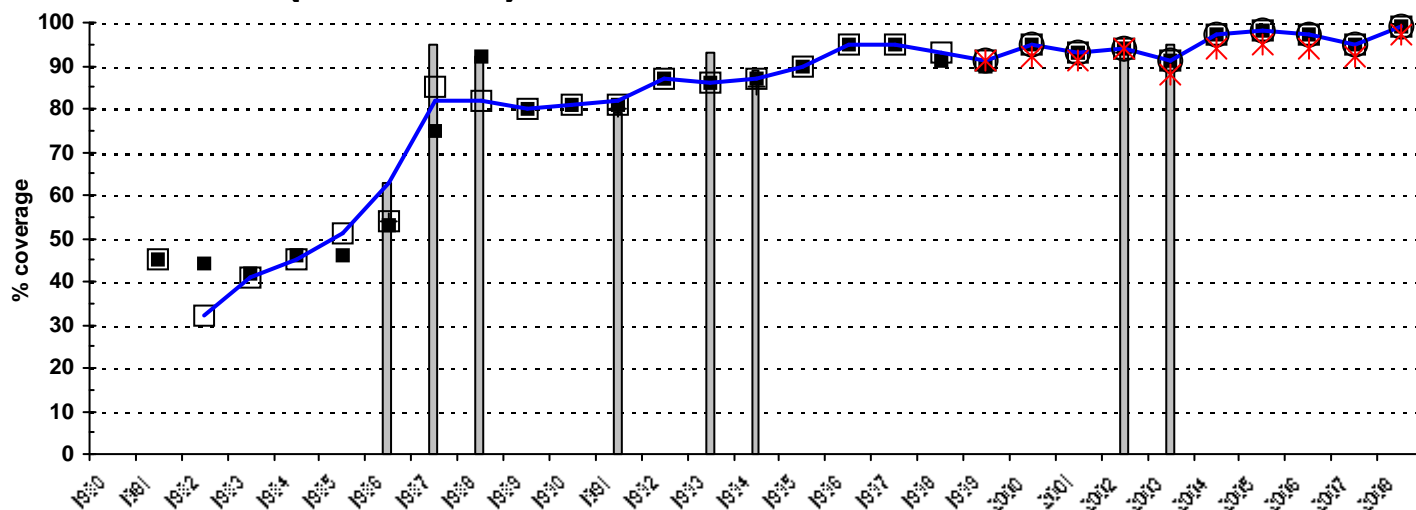
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Morocco

Pol3 (1980-2008)



Description of trend

Estimated immunization coverage levels are based on reported data, supported 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							
1981		45	45				
1982	32	32	44				
1983	41	41	42				
1984	45	45	46				
1985	51	51	46				
1986	63	54	53			63	54
1987	82	85	75			95	
1988	82	82	92			92	
1989	80	80	80				
1990	81	81	81				
1991	82	81	81			79	80
1992	87	87	87				
1993	86	86	86			93	
1994	87	87	87			89	85
1995	90	90	90				
1996	95	95	95				
1997	95	95	95				
1998	93	93	91				
1999	91	91	90	91	91		
2000	95	95	95	95	92		
2001	93	93	93	93	91		
2002	94	94	94	94	94	95	93
2003	91	91	91	91	88	95	
2004	97	97	97	97	94		
2005	98	98	98	98	95		
2006	97	97	97	97	94		
2007	95	95	95	95	92		
2008	99	99	99	99	97		

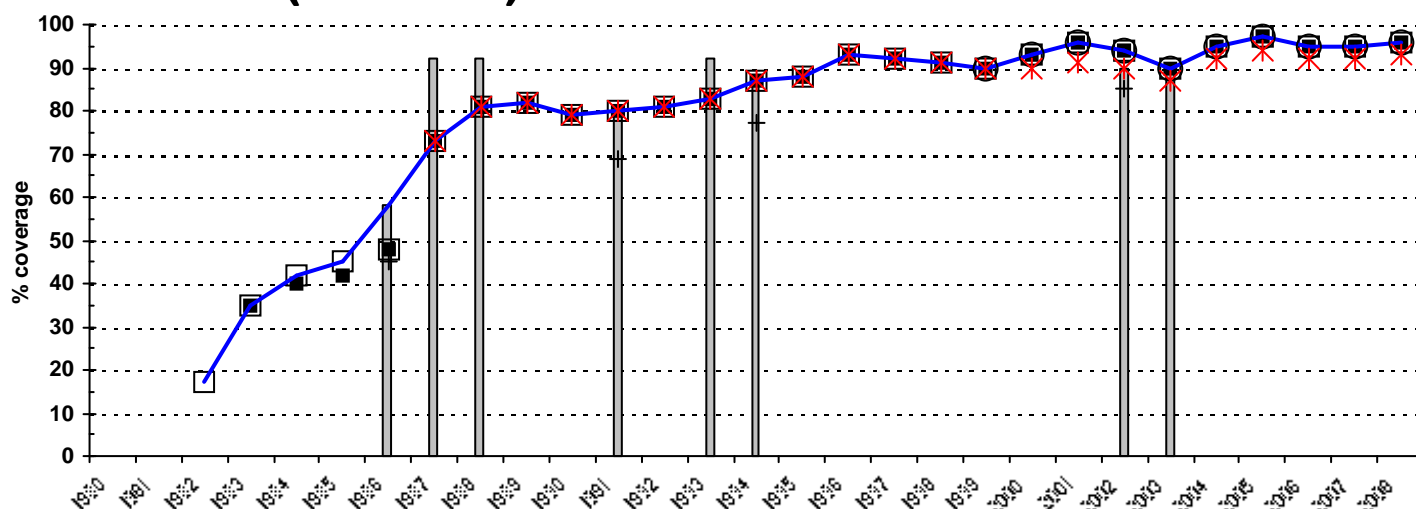
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Morocco

MCV (1980-2008)



Description of trend

Estimated immunization coverage levels are based on reported data, supported 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							
1981							
1982	17	17					
1983	35	35	35				
1984	42	42	40				
1985	45	45	42				
1986	58	48	48			58	45
1987	73	73	73		73	92	
1988	81	81	81		81	92	
1989	82	82	82		82		
1990	79	79	79		79		
1991	80	80	80		80	80	69
1992	81	81	81		81		
1993	83	83	83		83	92	
1994	87	87	87		87	88	77
1995	88	88	88		88		
1996	93	93	93		93		
1997	92	92	92		92		
1998	91	91	91		91		
1999	90	90	90	90	90		
2000	93	93	93	93	90		
2001	96	96	96	96	91		
2002	94	94	94	94	90	90	85
2003	90	90	90	90	87	90	
2004	95	95	95	95	92		
2005	97	97	97	97	94		
2006	95	95	95	95	92		
2007	95	95	95	95	92		
2008	96	96	96	96	93		

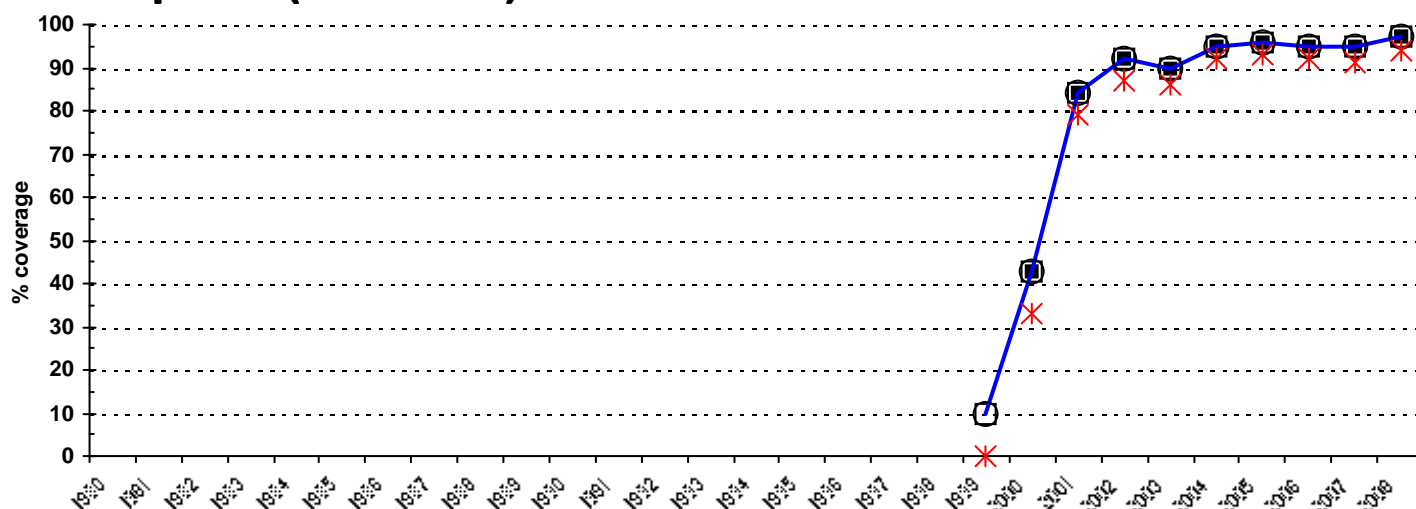
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Morocco

HepB3 (1980-2008)



Description of trend

Hepatitis B vaccine was introduced in 1999. Estimated immunization coverage levels are based on 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							
1981							
1982							
1983							
1984							
1985							
1986							
1987							
1988							
1989							
1990							
1991							
1992							
1993							
1994							
1995							
1996							
1997							
1998							
1999	10	10		10	0		
2000	43	43	43	43	33		
2001	84	84	84	84	79		
2002	92	92	92	92	87		
2003	90	90	90	90	86		
2004	95	95	95	95	92		
2005	96	96	96	96	93		
2006	95	95	95	95	92		
2007	95	95	95	95	91		
2008	97	97	97	97	94		

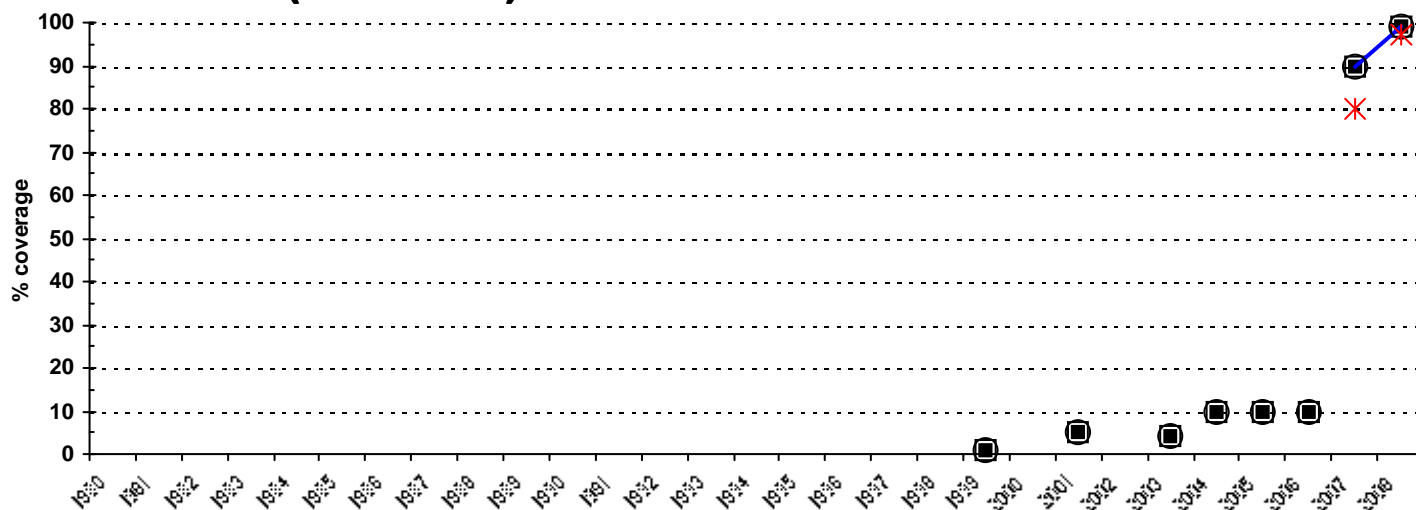
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Morocco

Hib3 (1980-2008)



Description of trend

Hib vaccine introduced nationwide in January 2007. Reported data in the years prior to 2007 represent vaccinations in the private sector.

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		1	1	1			
2000							
2001		5	5	5			
2002							
2003		4	4	4			
2004		10	10	10			
2005		10	10	10			
2006		10	10	10			
2007	90	90	90	90	80		
2008	99	99	99	99	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.

Morocco

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
2003 Royaume du Maroc Enquête sur la Population et la Santé Familiale EPSF 2003-2004, Rapport Préliminaire								
BCG	Card or History	98.4		12-23 m	1131	78.2	2003/2004	
DTP1	Card or History	97.5		12-23 m	1131	78.2	2003/2004	
DTP3	Card or History	94.9		12-23 m	1131	78.2	2003/2004	
Pol3	Card or History	95.2		12-23 m	1131	78.2	2003/2004	
MCV	Card or History	90.4		12-23 m	1131	78.2	2003/2004	

2002 L'Enquête Nationale sur la Population et la Santé Familiale du Maroc 2003-2004

BCG	History	20.1		12-23 m	1130	78.2	2003/2004	
BCG	Card or history	98.4		12-23 m	1130	78.2	2003/2004	
BCG	Card	78.3		12-23 m	1130	78.2	2003/2004	
BCG	C or H <12 month	97.8		12-23 m	1130	78.2	2003/2004	
DTP1	History	20.1		12-23 m	1130	78.2	2003/2004	
DTP1	Card or history	97.5		12-23 m	1130	78.2	2003/2004	
DTP1	Card	77.5		12-23 m	1130	78.2	2003/2004	
DTP1	C or H <12 month	97		12-23 m	1130	78.2	2003/2004	
DTP3	History	19.3		12-23 m	1130	78.2	2003/2004	
DTP3	Card or history	94.8		12-23 m	1130	78.2	2003/2004	
DTP3	Card	75.4		12-23 m	1130	78.2	2003/2004	
DTP3	C or H <12 month	93.1		12-23 m	1130	78.2	2003/2004	
Pol3	History	19.7		12-23 m	1130	78.2	2003/2004	
Pol3	Card or history	95.2		12-23 m	1130	78.2	2003/2004	
Pol3	Card	75.6		12-23 m	1130	78.2	2003/2004	
Pol3	C or H <12 month	93.4		12-23 m	1130	78.2	2003/2004	
MCV	History	18.8		12-23 m	1130	78.2	2003/2004	
MCV	Card or history	90.4		12-23 m	1130	78.2	2003/2004	
MCV	Card	71.6		12-23 m	1130	78.2	2003/2004	
MCV	C or H <12 month	84.7		12-23 m	1130	78.2	2003/2004	

2002 PAFAM Morocco 2003

BCG	History	20.1		12-23 m	246	78.3	2003	
BCG	Card or history	98.4		12-23 m	1130	78.3	2003	
BCG	Card	78.3		12-23 m	884	78.3	2003	
BCG	C or H <12 month	97.8		12-23 m	1130	78.3	2003	
DTP1	History	20.1		12-23 m	246	78.3	2003	
DTP1	Card or history	97.5		12-23 m	1130	78.3	2003	
DTP1	Card	77.5		12-23 m	884	78.3	2003	
DTP1	C or H <12 month	97		12-23 m	1130	78.3	2003	
DTP3	History	19.3		12-23 m	246	78.3	2003	
DTP3	Card or history	94.8		12-23 m	1130	78.3	2003	
DTP3	Card	75.6		12-23 m	884	78.3	2003	
DTP3	C or H <12 month	93.1		12-23 m	1130	78.3	2003	
Pol3	History	19.7		12-23 m	246	78.3	2003	
Pol3	Card or history	95.2		12-23 m	1130	78.3	2003	
Pol3	Card	75.6		12-23 m	884	78.3	2003	
Pol3	C or H <12 month	93.4		12-23 m	1130	78.3	2003	
MCV	History	18.8		12-23 m	246	78.3	2003	
MCV	Card or history	90.4		12-23 m	1130	78.3	2003	
MCV	Card	71.6		12-23 m	884	78.3	2003	
MCV	C or H <12 month	84.7		12-23 m	1130	78.3	2003	

Morocco

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
1994 Morocco, Enquête de Panel sur la Population et la Santé (EPPS) 1995, 1996								
BCG	Card or History	97.6		12-23 m	409	72.1	1995	
BCG	C or H <12 month	95.6		12-23 m	409	72.1	1995	
BCG	C or H <12 month	97.2		24-35 m	425	63.1	1995	
BCG	C or H <12 month	95.3		36-47 m	435	63	1995	
BCG	C or H <12 month	93.9		48-59 m	443	51	1995	
DTP1	Card or History	97.6		12-23 m	409	72.1	1995	
DTP1	C or H <12 month	94.5		12-23 m	409	72.1	1995	numbers switched in tables 7.1 and 7.8 with Polio 1
DTP1	C or H <12 month	97		24-35 m	425	63.1	1995	
DTP1	C or H <12 month	91.7		36-47 m	435	63	1995	
DTP1	C or H <12 month	92.3		48-59 m	443	51	1995	
DTP3	Card or History	89		12-23 m	409	72.1	1995	
DTP3	C or H <12 month	83.9		12-23 m	409	72.1	1995	
DTP3	C or H <12 month	85.1		24-35 m	425	63.1	1995	
DTP3	C or H <12 month	78.9		36-47 m	435	63	1995	
DTP3	C or H <12 month	82.3		48-59 m	443	51	1995	
Pol3	Card or History	89		12-23 m	409	72.1	1995	
Pol3	C or H <12 month	83.9		12-23 m	409	72.1	1995	
Pol3	C or H <12 month	85.1		24-35 m	425	63.1	1995	
Pol3	C or H <12 month	78.9		36-47 m	435	63	1995	
Pol3	C or H <12 month	82.3		48-59 m	443	51	1995	
MCV	Card or History	88.5		12-23 m	409	72.1	1995	
MCV	C or H <12 month	77		12-23 m	409	72.1	1995	
MCV	C or H <12 month	74.1		24-35 m	425	63.1	1995	
MCV	C or H <12 month	69.1		36-47 m	435	63	1995	
MCV	C or H <12 month	76.6		48-59 m	443	51	1995	

1993 Morocco, Enquête Nationale sur la Couverture Vaccinale des Enfants et des Femmes et la Morbidité Diarrhéique, 1994

BCG	Card or History	99		12-23 m	2316	73.2	1994	
BCG	C or H <12 month	74	Valid	12-23 m	2316	73.2	1994	Correct vaccination (valid doses before one year)
DTP1	Card or History	98		12-23 m	2316	73.2	1994	
DTP3	Card or History	93		12-23 m	2316	73.2	1994	
Pol3	Card or History	93		12-23 m	2316	73.2	1994	
MCV	Card or History	91.7		12-23 m	2316	73.2	1994	

1991 Morocco, Enquête Nationale sur la Population et la Santé (ENPS-II) 1992, 1993

BCG	Card or History	93.4		12-23 m	985	65.4	1992	
BCG	C or H <12 month	92.3		12-23 m	985	65.4	1992	
BCG	C or H <12 month	92.8		24-35 m	928	58	1992	
BCG	C or H <12 month	93.6		36-47 m	967	50.2	1992	
BCG	C or H <12 month	92.8		48-59 m	1031	42.4	1992	
DTP1	Card or History	91.8		12-23 m	985	65.4	1992	
DTP1	C or H <12 month	89.5		12-23 m	985	65.4	1992	
DTP1	C or H <12 month	87.9		24-35 m	928	58	1992	
DTP1	C or H <12 month	88.2		36-47 m	967	50.2	1992	
DTP1	C or H <12 month	88.3		48-59 m	1031	42.4	1992	
DTP3	Card or History	79.4		12-23 m	985	65.4	1992	
DTP3	C or H <12 month	73.8		12-23 m	985	65.4	1992	
DTP3	C or H <12 month	76		24-35 m	928	58	1992	
DTP3	C or H <12 month	77.1		36-47 m	967	50.2	1992	
DTP3	C or H <12 month	79.8		48-59 m	1031	42.4	1992	

Morocco

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
Pol3	Card or History	79.4		12-23 m	985	65.4	1992	
Pol3	C or H <12 month	73.8		12-23 m	985	65.4	1992	
Pol3	C or H <12 month	76		24-35 m	928	58	1992	
Pol3	C or H <12 month	77.1		36-47 m	967	50.2	1992	
Pol3	C or H <12 month	79.8		48-59 m	1031	42.4	1992	
MCV	Card or History	79.8		12-23 m	985	65.4	1992	
MCV	C or H <12 month	66.9		12-23 m	985	65.4	1992	
MCV	C or H <12 month	67.5		24-35 m	928	58	1992	
MCV	C or H <12 month	69.4		36-47 m	967	50.2	1992	
MCV	C or H <12 month	64.8		48-59 m	1031	42.4	1992	

1988 Morocco, Enquête Nationale sur la Couverture Vaccinale 1989

BCG	Card or History	99		12-17 m	692	81	1989	Children 12-17 months
DTP1	Card or History	98		12-17 m	692	81	1989	Children 12-17 months
DTP3	Card or History	92		12-17 m	692	81	1989	Children 12-17 months
Pol3	Card or History	92		12-17 m	692	81	1989	Children 12-17 months
MCV	Card or History	92		12-17 m	692	81	1989	Children 12-17 months

1987 Morocco, Enquête Nationale sur la Couverture Vaccinale 1989

DTP1	Card or History	98.5		12-17 m	16649	82	1988	Children 12-17 months
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1987 Morocco, Rapport sur les Resultats de l'Enquête Nationale de Couverture Vaccinale 1988

BCG	Card or History	99		12-17 m	16649	82	1988	Children 12-17 months
DTP3	Card or History	95		12-17 m	16649	82	1988	Children 12-17 months
Pol3	Card or History	95		12-17 m	16649	82	1988	Children 12-17 months
MCV	Card or History	92		12-17 m	16649	82	1988	Children 12-17 months

1986 Demographic and Health Surveys Comparative Studies No. 1, Immunization, Boerma et al., Institute for Resource Development/Macro Systems, 1990

BCG	Card or History	83		12-23 m	1101	50.5	1987	
BCG	C or H <12 month	77		12-23 m	1101	50.5	1987	
DTP1	Card or History	77		12-23 m	1101	50.5	1987	
DTP1	C or H <12 month			12-23 m	1101	50.5	1987	
DTP3	Card or History	63		12-23 m	1101	50.5	1987	
DTP3	C or H <12 month	54		12-23 m	1101	50.5	1987	
Pol3	Card or History	63		12-23 m	1101	50.5	1987	
Pol3	C or H <12 month	54		12-23 m	1101	50.5	1987	
MCV	Card or History	58		12-23 m	1101	50.5	1987	
MCV	C or H <12 month	45		12-23 m	1101	50.5	1987	

Morocco

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.

Morocco

Year	PAB coverage estimate (%)
1980	
1981	
1982	
1983	
1984	
1985	
1986	
1987	29
1988	47
1989	63
1990	66
1991	73
1992	76
1993	84
1994	82
1995	80
1996	63
1997	60
1998	53
1999	55
2000	86
2001	83
2002	84
2003	84
2004	84
2005	85
2006	85
2007	85
2008	86