

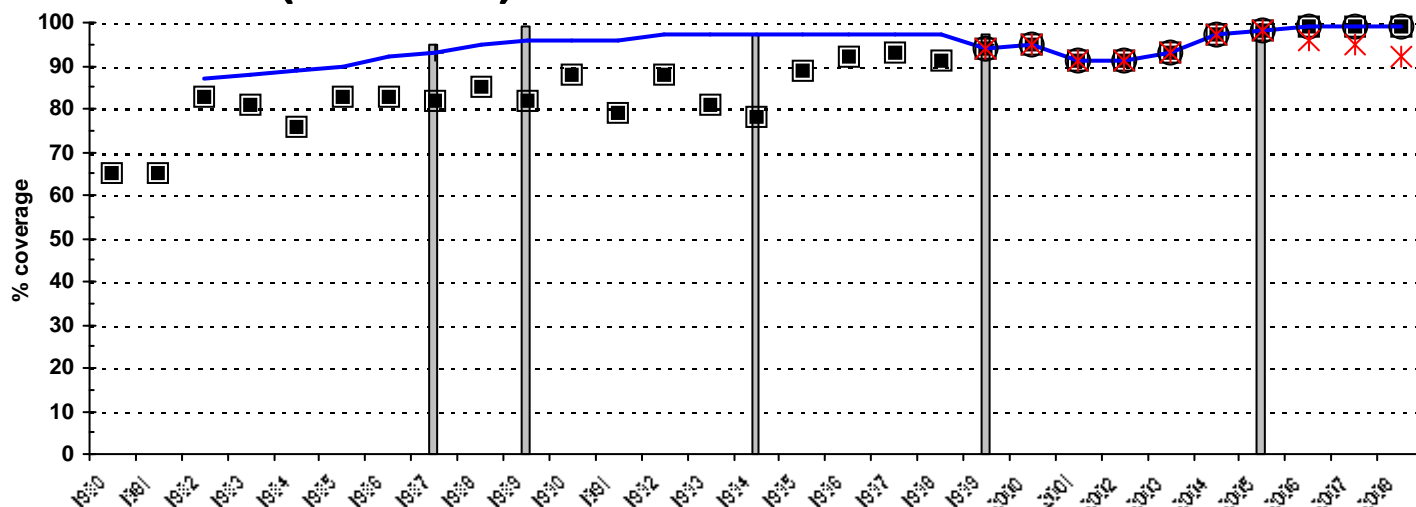
**WHO/UNICEF
Review of National Immunization Coverage
1980-2008**

Tunisia

July, 2009

Tunisia

BCG (1980-2008)



Description of trend

EPI Program began in 1979. The early reported numbers in 1980 and 1981 are considered underestimates; estimates from 1982-1999 are based on survey results. Routine reports do not include complete reporting from maternity services and the private sector. Estimates after 1995 are based on officially reported data which include private sector immunizations.

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		65	65				
1981		65	65				
1982	87	83	83				
1983	88	81	81				
1984	89	76	76				
1985	90	83	83				
1986	92	83	83				
1987	93	82	82			95	93
1988	95	85	85				
1989	96	82	82			99	
1990	96	88	88				
1991	96	79	79				
1992	97	88	88				
1993	97	81	81				
1994	97	78	78			97	
1995	97	89	89				
1996	97	92	92				
1997	97	93	93				
1998	97	91	91				
1999	94	94	94	94	94	97	95
2000	95	95	95	95	95		
2001	91	91	91	91	91		
2002	91	91	91	91	91		
2003	93	93	93	93	93		
2004	97	97	97	97	97		
2005	98	98	98	98	98	99	
2006	99	99	99	99	96		
2007	99	99	99	99	95		
2008	99	99	99	99	92		

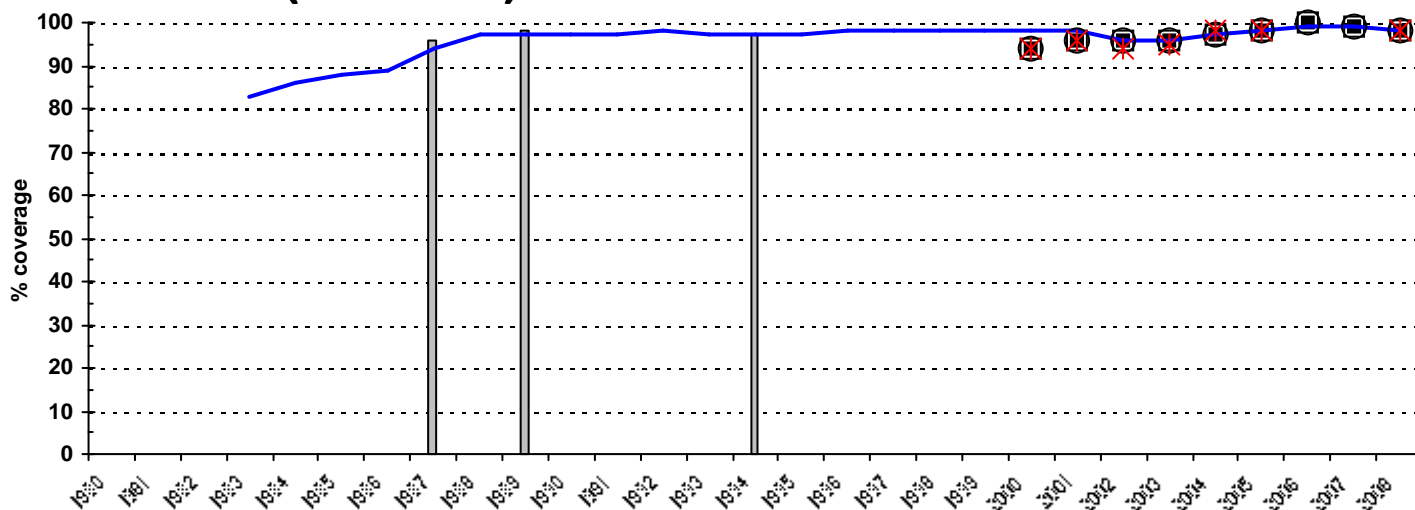
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Tunisia

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 for 2002 onward are based on these reports. For other years 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							
1983	83						
1984	86						
1985	88						
1986	89						
1987	94					96	
1988	97						
1989	97					98	
1990	97						
1991	97						
1992	98						
1993	97						
1994	97					97	
1995	97						
1996	98						
1997	98						
1998	98						
1999	98						
2000	98	94	94	94	94		
2001	98	96	96	96	96		
2002	96	96	96	96	94		
2003	96	96	96	96	95		
2004	97	97	97	97	98		
2005	98	98	98	98	98		
2006	99	100	100	100	102		
2007	99	99	99	99	102		
2008	98	98	98	98	98		

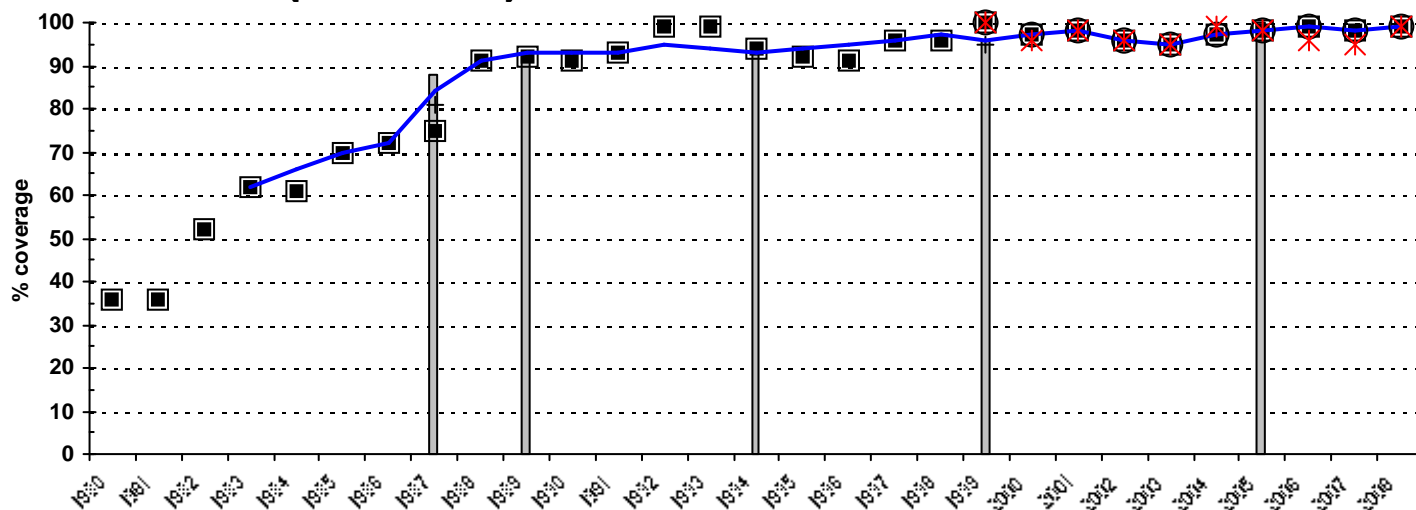
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

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

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Tunisia

DTP3 (1980-2008)



Description of trend

The EPI Program began in 1979. Estimates are based on nationally reported data confirmed 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		36	36				
1981		36	36				
1982		52	52				
1983	62	62	62				
1984	66	61	61				
1985	70	70	70				
1986	72	72	72				
1987	84	75	75			88	81
1988	91	91	91				
1989	93	92	92			93	
1990	93	91	91				
1991	93	93	93				
1992	95	99	99				
1993	94	99	99				
1994	93	94	94			95	
1995	94	92	92				
1996	95	91	91				
1997	96	96	96				
1998	97	96	96				
1999	96	100	100	100	100	96	95
2000	97	97	97	97	96		
2001	98	98	98	98	98		
2002	96	96	96	96	96		
2003	95	95	95	95	95		
2004	97	97	97	97	99		
2005	98	98	98	98	98	100	
2006	99	99	99	99	96		
2007	98	98	98	98	95		
2008	99	99	99	99	99		

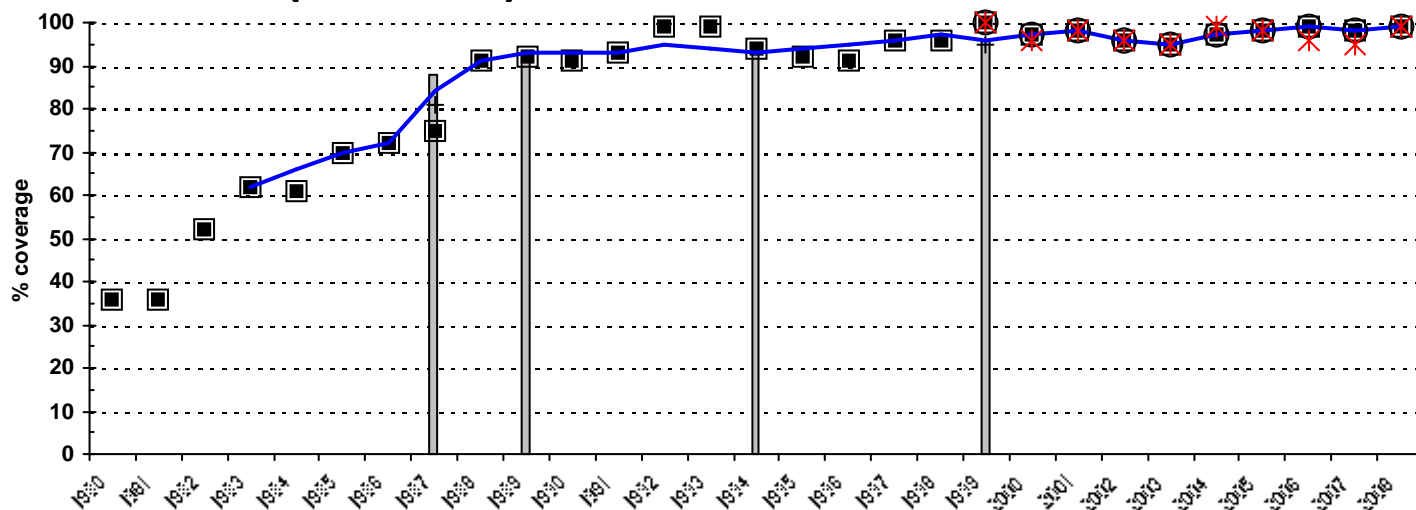
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Tunisia

Pol3 (1980-2008)



Description of trend

The EPI Program began in 1979. Estimates are based on nationally reported data confirmed 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		36	36				
1981		36	36				
1982		52	52				
1983	62	62	62				
1984	66	61	61				
1985	70	70	70				
1986	72	72	72				
1987	84	75	75			88	81
1988	91	91	91				
1989	93	92	92			93	
1990	93	91	91				
1991	93	93	93				
1992	95	99	99				
1993	94	99	99				
1994	93	94	94			95	
1995	94	92	92				
1996	95	91	91				
1997	96	96	96				
1998	97	96	96				
1999	96	100	100	100	100	96	95
2000	97	97	97	97	96		
2001	98	98	98	98	98		
2002	96	96	96	96	96		
2003	95	95	95	95	95		
2004	97	97	97	97	99		
2005	98	98	98	98	98		
2006	99	99	99	99	96		
2007	98	98	98	98	95		
2008	99	99	99	99	99		

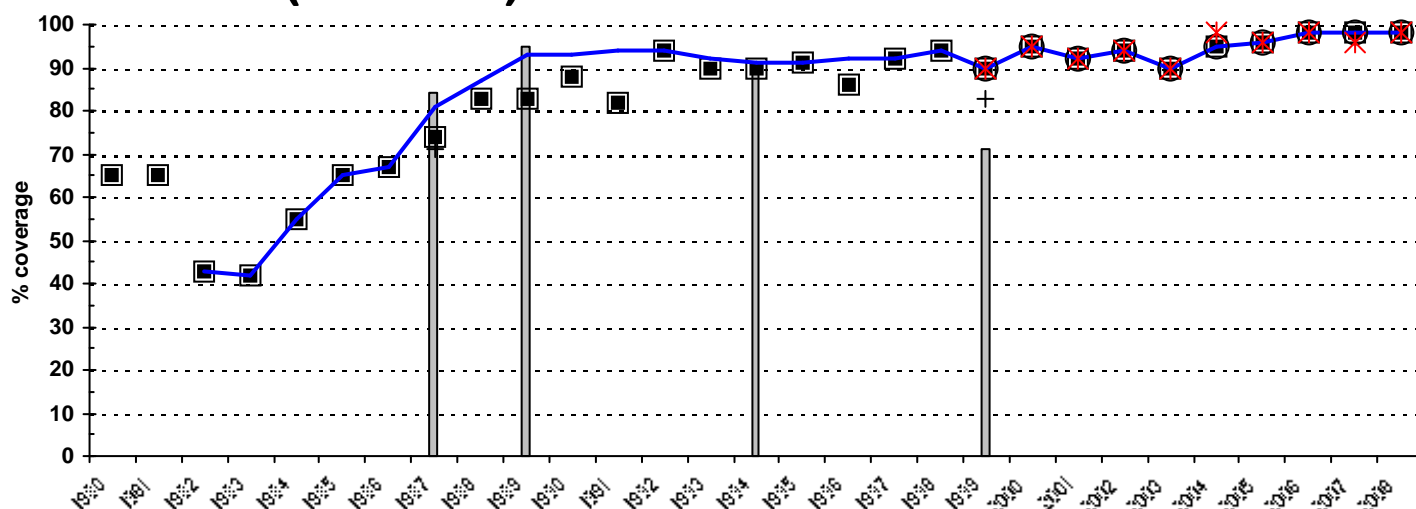
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Tunisia

MCV (1980-2008)



Description of trend

The EPI Program began in 1979. 1999 survey results for children 12-23 months of age vaccinated by time of survey are less than children vaccinated by one year of age. Survey results not considered.

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		65	65				
1981		65	65				
1982	43	43	43				
1983	42	42	42				
1984	55	55	55				
1985	65	65	65				
1986	67	67	67				
1987	81	74	74			84	71
1988	87	83	83				
1989	93	83	83			95	
1990	93	88	88				
1991	94	82	82				
1992	94	94	94				
1993	92	90	90				
1994	91	90	90			91	
1995	91	91	91				
1996	92	86	86				
1997	92	92	92				
1998	94	94	94				
1999	90	90	90	90	90	71	83
2000	95	95	95	95	95		
2001	92	92	92	92	92		
2002	94	94	94	94	94		
2003	90	90	90	90	90		
2004	95	95	95	95	98		
2005	96	96	96	96	96		
2006	98	98	98	98	98		
2007	98	98	98	98	96		
2008	98	98	98	98	98		

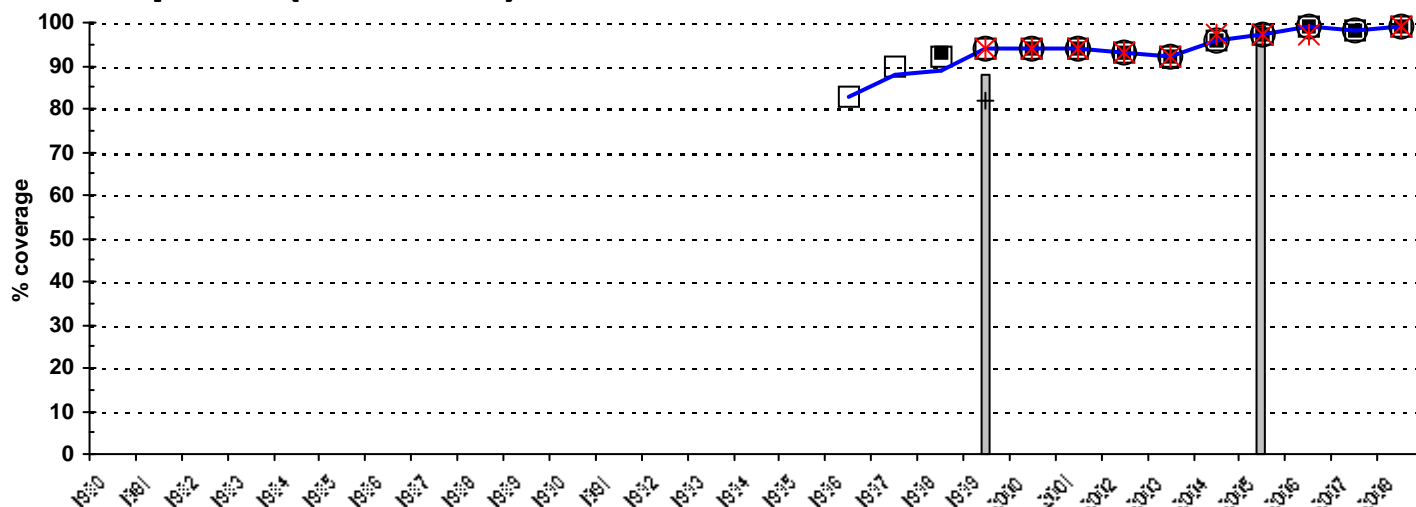
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

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

***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.

Tunisia

HepB3 (1980-2008)



Description of trend

The Hepatitis vaccine was introduced in 1995. Estimates are based on nationally 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							
1981							
1982							
1983							
1984							
1985							
1986							
1987							
1988							
1989							
1990							
1991							
1992							
1993							
1994							
1995							
1996	83	83					
1997	88	90					
1998	89	92	93				
1999	94	94		94	94	88	82
2000	94	94	94	94	94		
2001	94	94	94	94	94		
2002	93	93	93	93	93		
2003	92	92	92	92	92		
2004	96	96	96	96	97		
2005	97	97	97	97	97	99	
2006	99	99	99	99	97		
2007	98	98	98	98	121		
2008	99	99	99	99	99		

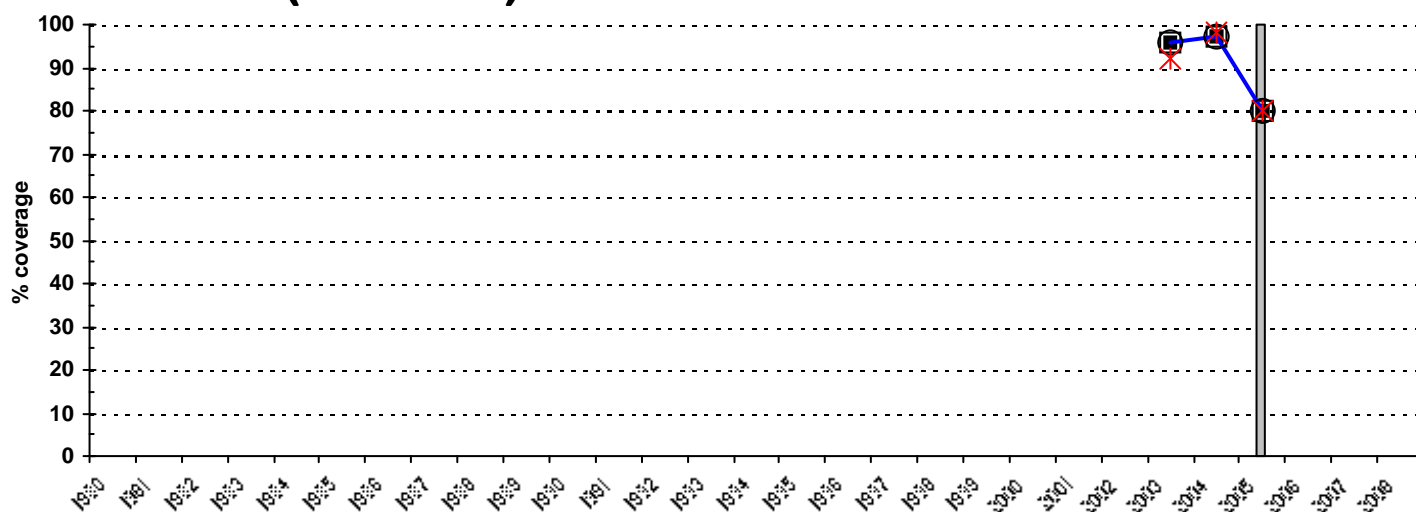
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Tunisia

Hib3 (1980-2008)



Description of trend

Monovalent Hib vaccine introduced in 2002. Estimates are based on national estimates. National recommendation for Hib vaccine discontinued 2006.

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	96	96	96	96	92		
2004	97	97	97	97	98		
2005	80	80	80	80	80	100	
2006							
2007							
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.

Tunisia

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
2005 L'enquête sur la santé et le bien-être de la mère et l'enfant MICS3, Tunisie 2006								
BCG	Card or History	98.6		12-23 m	595		2006	
DTP3	Card or History	99.7		12-23 m	595		2006	
HepB	Card or History	99.2		12-23 m	595		2006	
Hib3	Card or History	99.7		12-23 m	595		2006	
1999 Tunisia MICS 2000								
BCG	Card or History	97.4		12-23 m	2158		2000	
BCG	C or H <12 month	95.4		12-23 m	2158		2000	
DTP1	Card or History			12-23 m	2158		2000	
DTP1	C or H <12 month			12-23 m	2158		2000	
DTP3	Card or History	96		12-23 m	2158		2000	
DTP3	C or H <12 month	94.9		12-23 m	2158		2000	
Pol3	Card or History	96		12-23 m	2158		2000	
Pol3	C or H <12 month	94.9		12-23 m	2158		2000	
MCV	Card or History	71.3		12-23 m	2158		2000	
MCV	C or H <12 month	82.8		12-23 m	2158		2000	
HepB	Card or History	87.6		12-23 m	2158		2000	
HepB	C or H <12 month	81.6		12-23 m	2158		2000	
1994 PAPCHILD, République Tunisienne, Numéro 8, 1996								
BCG	Card or History	97.2		12-23 m			1994/95	
DTP3	Card or History	95.1		12-23 m			1994/95	
Pol3	Card or History	95.1		12-23 m			1994/95	
MCV	Card or History	90.7		12-23 m			1994/95	
1994 Tunisian Maternal and Child Health Survey, Summary Report, 1997								
DTP1	Card or History	97		12-23 m			1994/95	
1989 Enquête Nationale sur la Couverture Vaccinale Enquête C.A.P., 1991								
BCG	Card or History	99.4	Valid	12-23 m			1990	total number of children 700 according to secondary database
DTP1	Card or History	98.3	Valid	12-23 m			1990	total number of children 700 according to secondary database
DTP3	Card or History	93.4	Valid	12-23 m			1990	total number of children 700 according to secondary database
Pol3	Card or History	93.4	Valid	12-23 m			1990	total number of children 700 according to secondary database
MCV	Card or History	95.1		12-23 m			1990	total number of children 700 according to secondary database
1987 Demographic and Health Surveys Comparative Studies No. 1, Immunization, Boerma et al., Institute for Resource Development/Macro Systems, 1990								
BCG	Card or History	95		12-23 m	820	77	1988	
BCG	C or H <12 month	93		12-23 m	820	77	1988	
DTP1	Card or History	96		12-23 m	820	77	1988	
DTP1	C or H <12 month			12-23 m	820	77	1988	
DTP3	Card or History	88		12-23 m	820	77	1988	
DTP3	C or H <12 month	81		12-23 m	820	77	1988	
Pol3	Card or History	88		12-23 m	820	77	1988	
Pol3	C or H <12 month	81		12-23 m	820	77	1988	
MCV	Card or History	84		12-23 m	820	77	1988	
MCV	C or H <12 month	71		12-23 m	820	77	1988	

Tunisia

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
1987 National Survey on the Incidence of Tetanus Toxoid in Tunisia 1988								
PAB	Card or History			Women 15-49			1988	

Tunisia

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.

From 1996 onward, reported PAB estimates have been used.

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.

Tunisia

Year	PAB coverage estimate (%)
1980	2
1981	2
1982	3
1983	3
1984	5
1985	8
1986	14
1987	27
1988	37
1989	39
1990	40
1991	42
1992	54
1993	57
1994	56
1995	58
1996	80
1997	80
1998	85
1999	82
2000	68
2001	87
2002	86
2003	87
2004	89
2005	90
2006	89
2007	96
2008	96