

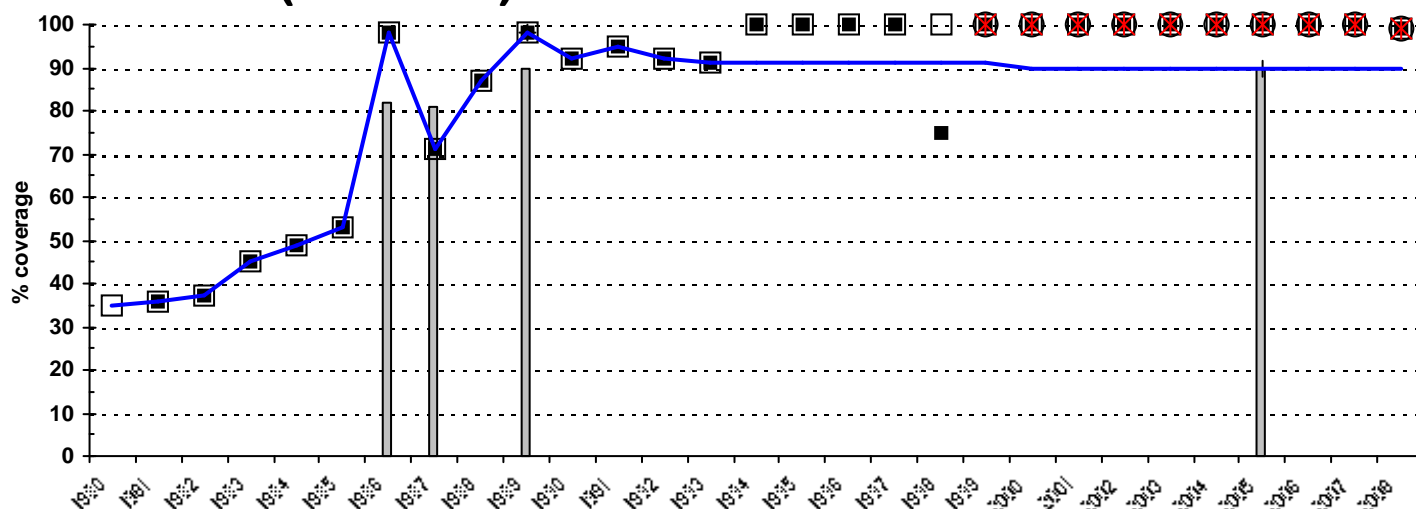
**WHO/UNICEF
Review of National Immunization Coverage
1980-2008**

Syrian Arab Republic

July, 2009

Syrian Arab Republic

BCG (1980-2008)



Description of trend

Estimates from 1980-1993 are based on reported data; from 1994 onward on survey results. The WHO reported numbers in 1986 and 1987 are overestimating coverage because the numerator includes all children under five having received BCG (particularly during catch-up campaigns). Officially reported data during the mid-1990s are overestimating due to a problem with the numerator (children who are vaccinated at any time before 5 years of age are included) and therefore are calibrated downwards.

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	35	35					
1981	36	36	36				
1982	37	37	37				
1983	45	45	45				
1984	49	49	49				
1985	53	53	53				
1986	98	98	98			82	
1987	71	71	71			81	
1988	87	87	87				
1989	98	98	98			90	98
1990	92	92	92				
1991	95	95	95				
1992	92	92	92				
1993	91	91	91				
1994	91	100	100				
1995	91	100	100				
1996	91	100	100				
1997	91	100	100				
1998	91	100	75				
1999	91	100	100	100	100		
2000	90	100	100	100	100		
2001	90	100	100	100	100		
2002	90	100	100	100	100		
2003	90	100	100	100	100		
2004	90	100	100	100	100		
2005	90	100	100	100	100	90	90
2006	90	100	100	100	100		
2007	90	100	100	100	100		
2008	90	99	99	99	99		

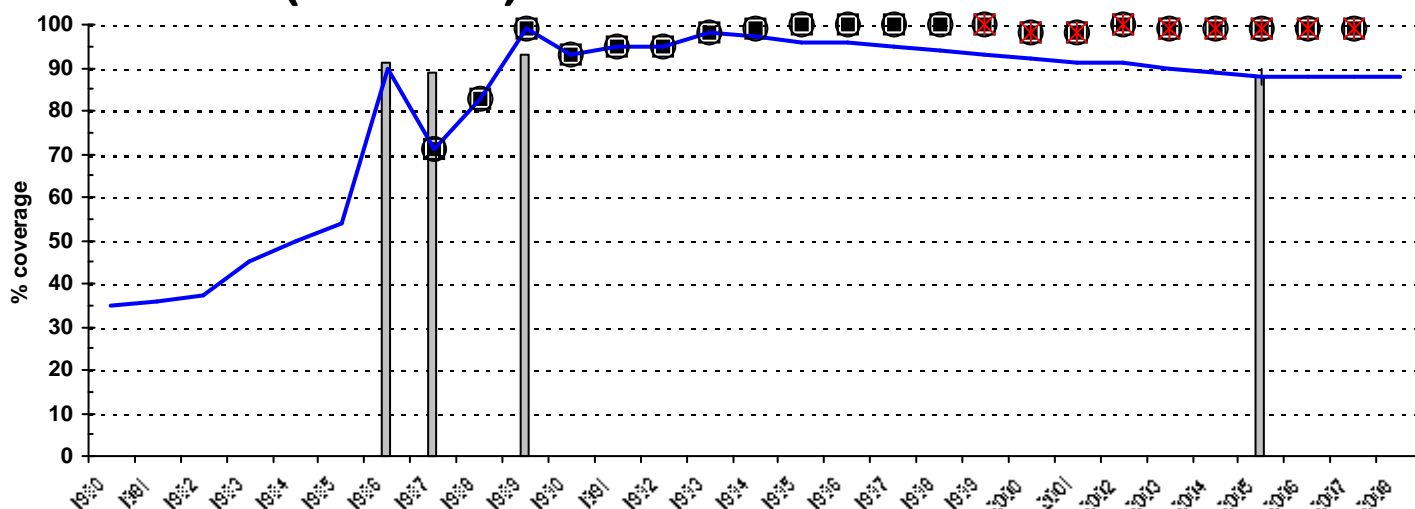
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Syrian Arab Republic

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 1998 onward. DTP1 estimates from 1987-1994 are based on these reports, supported by survey results. For years prior to 1986 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 2000. Estimates from 1994 are interpolated to the level of the 2005 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	35						
1981	36						
1982	37						
1983	45						
1984	50						
1985	54						
1986	90						
1987	71	71	71	71		91	
1988	83	83	83	83		89	
1989	99	99	99	99		93	
1990	93	93	93	93			
1991	95	95	95	95			
1992	95	95	95	95			
1993	98	98	98	98			
1994	97	99	99	99			
1995	96	100	100	100			
1996	96	100	100	100			
1997	95	100	100	100			
1998	94	100	100	100			
1999	93	100	100	100	100		
2000	92	98	98	98	98		
2001	91	98	98	98	98		
2002	91	100	100	100	100		
2003	90	99	99	99	99		
2004	89	99	99	99	99		
2005	88	99	99	99	99	88	88
2006	88	99	99	99	99		
2007	88	99	99	99	99		
2008	88						

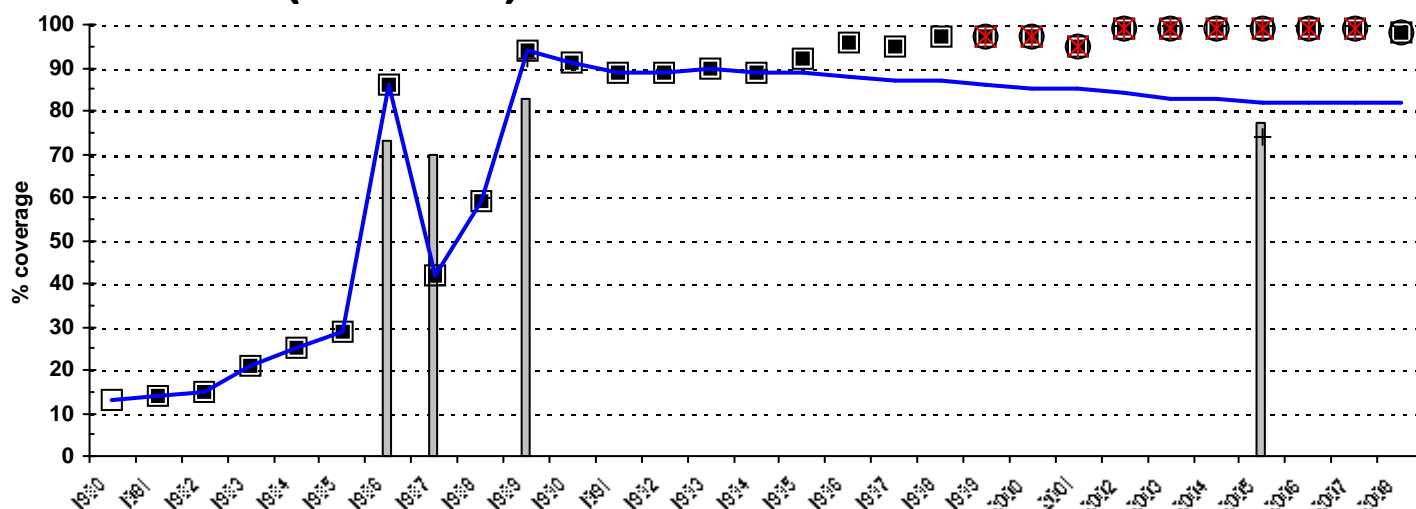
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Syrian Arab Republic

DTP3 (1980-2008)



Description of trend

Estimated immunization coverage levels from 1980-1993 are based on reported data supported by survey results. The WHO reported number 1986 and 1987 are overestimating coverage because the numerator includes all children under five having received BCG (particularly during up campaigns). Officially reported data between 1994 and 2001 are overestimating due to a problem with the numerator (children who are vaccinated at any time before 5 years of age are included) and therefore are calibrated downwards. Estimates from 1994 are interpolated to level of the 2005 survey results adjusted for recall bias.

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	13	13					
1981	14	14	14				
1982	15	15	15				
1983	21	21	21				
1984	25	25	25				
1985	29	29	29				
1986	86	86	86			73	
1987	42	42	42			70	
1988	59	59	59				
1989	94	94	94			83	92
1990	91	91	91				
1991	89	89	89				
1992	89	89	89				
1993	90	90	90				
1994	89	89	89				
1995	89	92	92				
1996	88	96	96				
1997	87	95	95				
1998	87	97	97				
1999	86	97	97	97	97		
2000	85	97	97	97	97		
2001	85	95	95	95	95		
2002	84	99	99	99	99		
2003	83	99	99	99	99		
2004	83	99	99	99	99		
2005	82	99	99	99	99	77	74
2006	82	99	99	99	99		
2007	82	99	99	99	99		
2008	82	98	98	98			

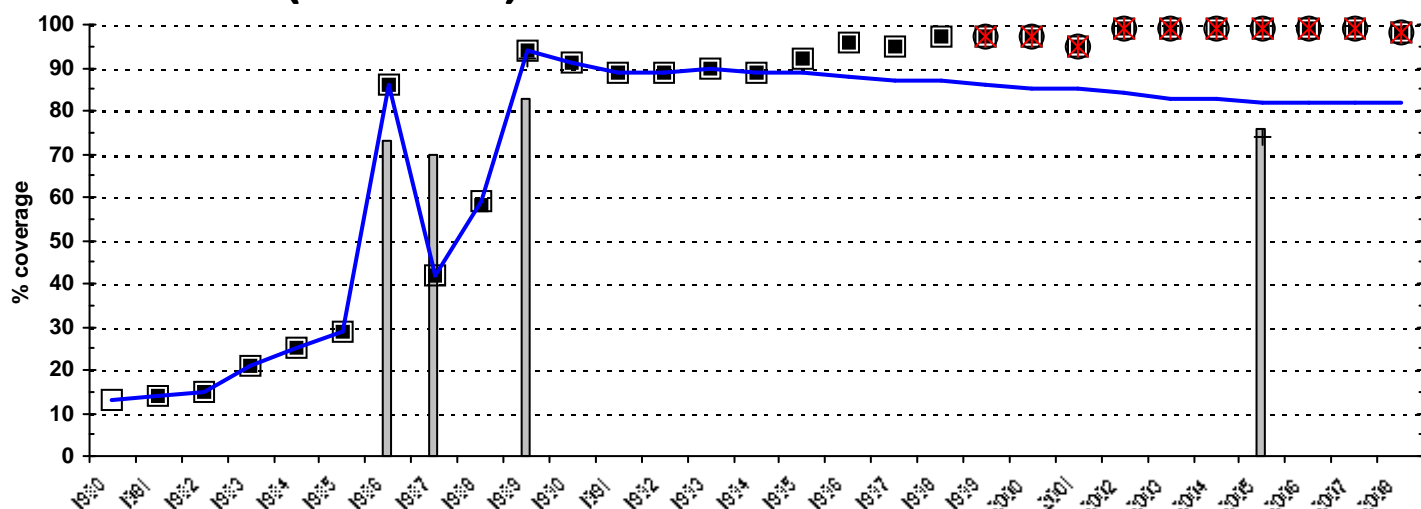
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

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Syrian Arab Republic

Pol3 (1980-2008)



Description of trend

Estimated immunization coverage levels from 1980-1993 are based on reported data supported by survey results. The WHO reported number 1986 and 1987 are overestimating coverage because the numerator includes all children under five having received BCG (particularly during catch-up campaigns). Officially reported data between 1994 and 2001 are overestimating due to a problem with the numerator (children who are vaccinated at any time before 5 years of age are included) and therefore are calibrated downwards. Estimates from 1994 are interpolated to the level of survey results adjusted for recall bias.

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	13	13					
1981	14	14	14				
1982	15	15	15				
1983	21	21	21				
1984	25	25	25				
1985	29	29	29				
1986	86	86	86			73	
1987	42	42	42			70	
1988	59	59	58				
1989	94	94	94			83	92
1990	91	91	91				
1991	89	89	89				
1992	89	89	89				
1993	90	90	90				
1994	89	89	89				
1995	89	92	92				
1996	88	96	96				
1997	87	95	95				
1998	87	97	97				
1999	86	97	97	97	97		
2000	85	97	97	97	97		
2001	85	95	95	95	95		
2002	84	99	99	99	99		
2003	83	99	99	99	99		
2004	83	99	99	99	99		
2005	82	99	99	99	99	76	74
2006	82	99	99	99	99		
2007	82	99	99	99	99		
2008	82	98	98	98	98		

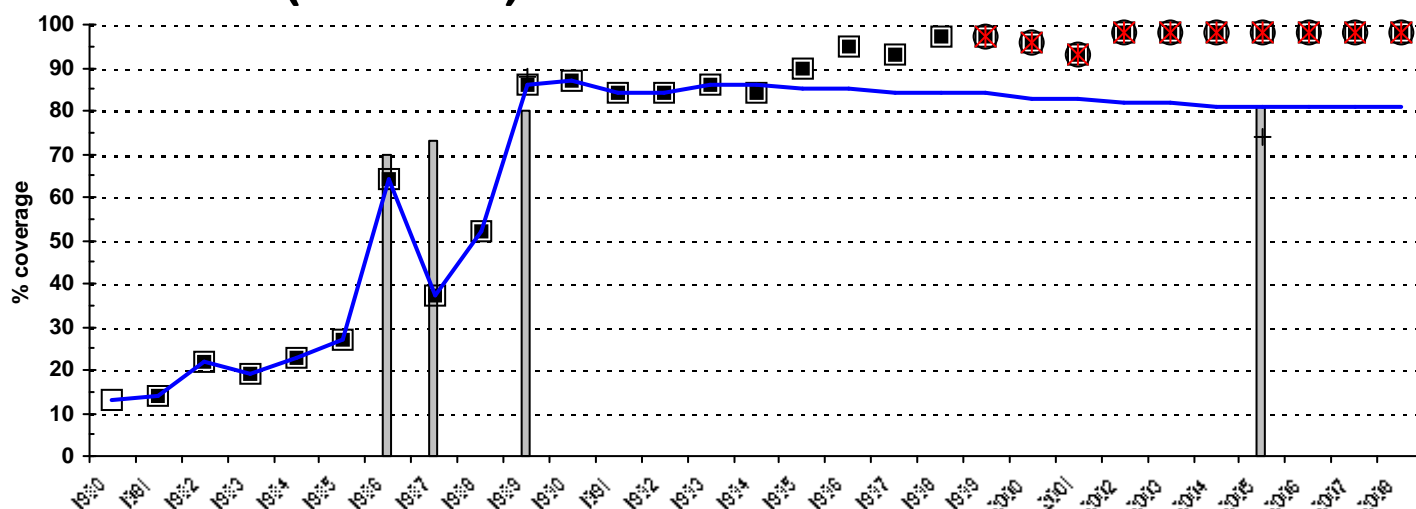
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

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

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Syrian Arab Republic

MCV (1980-2008)



Description of trend

Estimated immunization coverage levels from 1980-1993 are based on reported data, supported by survey results. Estimates from 1994 are interpolated to the level of the 2005 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	13	13					
1981	14	14	14				
1982	22	22	22				
1983	19	19	19				
1984	23	23	23				
1985	27	27	27				
1986	64	64	64			70	
1987	37	37	37			73	
1988	52	52	52				
1989	86	86	86			80	88
1990	87	87	87				
1991	84	84	84				
1992	84	84	84				
1993	86	86	86				
1994	86	84	84				
1995	85	90	90				
1996	85	95	95				
1997	84	93	93				
1998	84	97	97				
1999	84	97	97	97	97		
2000	83	96	96	96	96		
2001	83	93	93	93	93		
2002	82	98	98	98	98		
2003	82	98	98	98	98		
2004	81	98	98	98	98		
2005	81	98	98	98	98	81	74
2006	81	98	98	98	98		
2007	81	98	98	98	98		
2008	81	98	98	98	98		

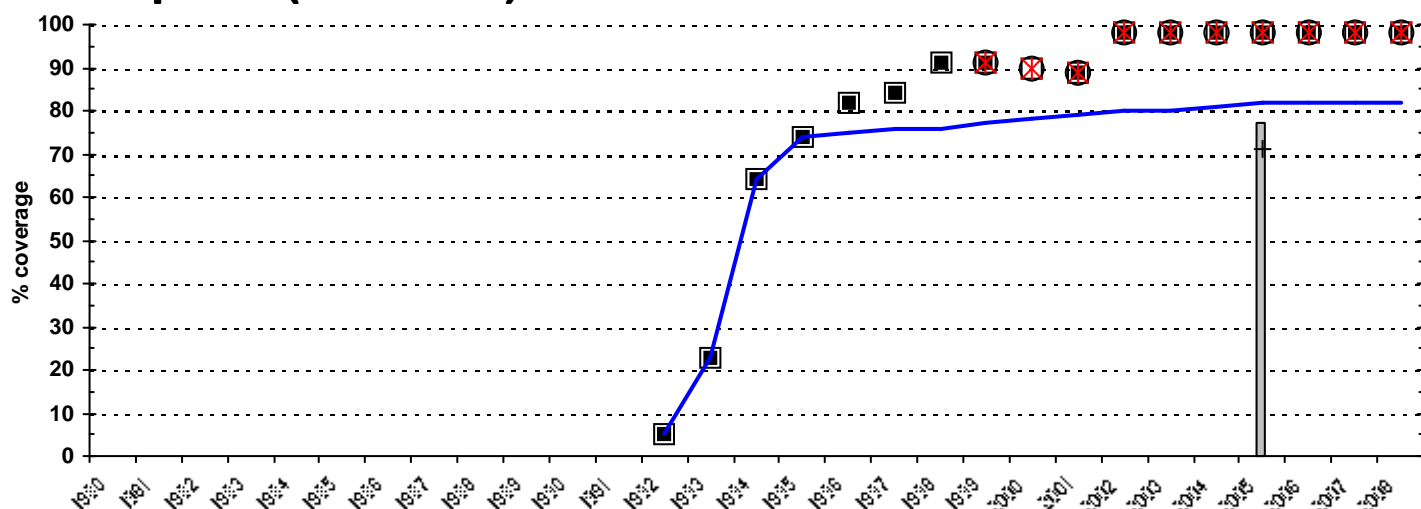
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

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

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Syrian Arab Republic

HepB3 (1980-2008)



Description of trend

Monovalent Hepatitis B vaccine was first introduced in 1993 in three governorates; nationally in 1995. Estimated immunization coverage level from 1992-1995 are based on reported data. Estimates from 1993 are interpolated to the level of the 2005 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							
1983							
1984							
1985							
1986							
1987							
1988							
1989							
1990							
1991							
1992	5	5	5				
1993	23	23	23				
1994	64	64	64				
1995	74	74	74				
1996	75	82	82				
1997	76	84	84				
1998	76	91	91				
1999	77	91	91	91	91		
2000	78	90	90	90	90		
2001	79	89	89	89	89		
2002	80	98	98	98	98		
2003	80	98	98	98	98		
2004	81	98	98	98	98		
2005	82	98	98	98	98	77	71
2006	82	98	98	98	98		
2007	82	98	98	98	98		
2008	82	98	98	98	98		

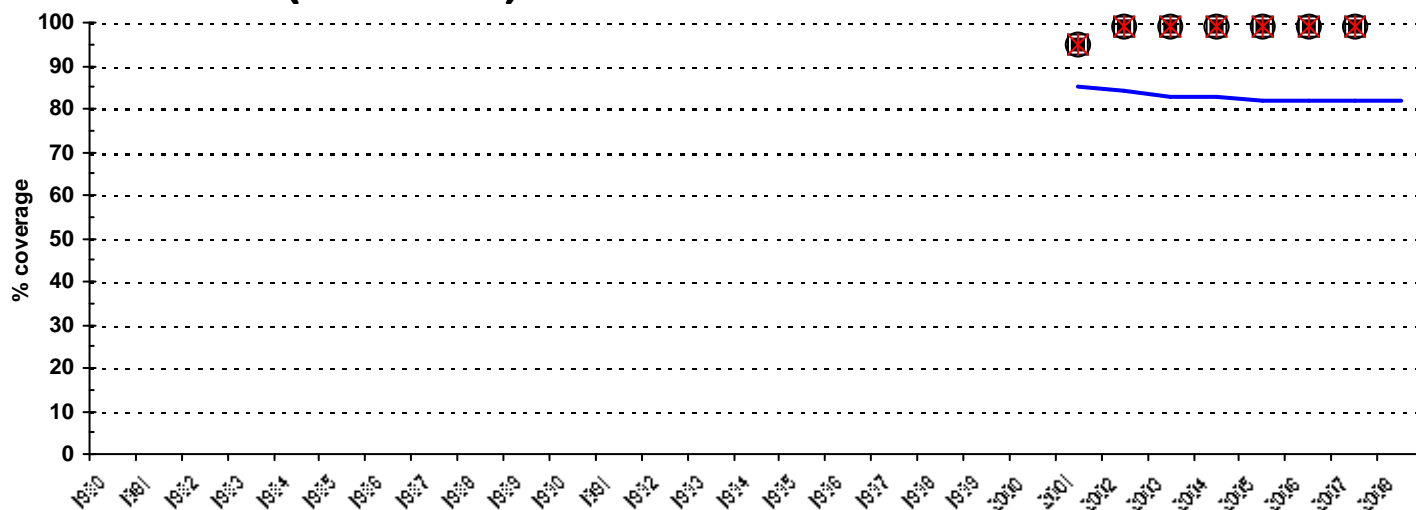
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Syrian Arab Republic

Hib3 (1980-2008)



Description of trend

DTP-Hib vaccine introduced in 2002. Estimated immunization coverage levels are based on DTP3 estimates.

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	85	95	95	95	95		
2002	84	99	99	99	99		
2003	83	99	99	99	99		
2004	83	99	99	99	99		
2005	82	99	99	99	99		
2006	82	99	99	99	99		
2007	82	99	99	99	99		
2008	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.

Syrian Arab Republic

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
2005 Syrian Arab Republic Multiple Indicator Cluster Survey 2006								
BCG	Card or History	89.8		12-23 m	2083	55.3	2006	
BCG	C or H <12 month	89.6		12-23 m	2083	55.3	2006	
DTP1	Card or History	88.5		12-23 m	2083	55.3	2006	
DTP1	C or H <12 month	87.8		12-23 m	2083	55.3	2006	
DTP3	Card or History	76.6		12-23 m	2083	55.3	2006	
DTP3	C or H <12 month	74.5		12-23 m	2083	55.3	2006	
Pol3	Card or History	75.8		12-23 m	2083	55.3	2006	
Pol3	C or H <12 month	73.5		12-23 m	2083	55.3	2006	
MCV	Card or History	80.7		12-23 m	2083	55.3	2006	
MCV	C or H <12 month	74.4		12-23 m	2083	55.3	2006	
HepB	Card or History	77.1		12-23 m	2083	55.3	2006	
HepB	C or H <12 month	71.4		12-23 m	2083	55.3	2006	
PAB	n.a.	37.8		CBAW	3958		2006	

1989 Report on the EPI/CDD/Mortality Survey 1990

BCG	Card or History	90		12-17 m	1264	69.9	1990	Children 12-17 months
BCG	C or H <12 month	97.8		12-23 m	1264	69.9	1990	denominator: vaccinated children
DTP1	Card or History	93		12-17 m	1264	69.9	1990	Children 12-17 months
DTP3	Card or History	83.3		12-17 m	1264	69.9	1990	Children 12-17 months
DTP3	C or H <12 month	92.5		12-23 m	1264	69.9	1990	denominator: vaccinated children
Pol3	Card or History	83.3		12-17 m	1264	69.9	1990	Children 12-17 months
Pol3	C or H <12 month	92.5		12-23 m	1264	69.9	1990	denominator: vaccinated children
MCV	Card or History	80.2		12-17 m	1264	69.9	1990	Children 12-17 months
MCV	C or H <12 month	87.7		12-23 m	1264	69.9	1990	denominator: vaccinated children

1987 Syrian EPI/CDD Review 1988

BCG	Card or History	81		12-23 m	1273		1988	
DTP1	Card or History	89		12-23 m	1273		1988	
DTP3	Card or History	70		12-23 m	1273		1988	
Pol3	Card or History	70		12-23 m	1273		1988	
MCV	Card or History	73		12-23 m	1273		1988	

1986 Syrian Arab Republic Immunization Campaign 1986: Evaluation Report, 1987

BCG	Card or History	82		12-23 m			1987	
DTP1	Card or History	91		12-23 m			1987	
DTP3	Card or History	73		12-23 m			1987	
Pol3	Card or History	73		12-23 m			1987	
MCV	Card or History	70		12-23 m			1987	

Syrian Arab Republic

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.

Syrian Arab Republic

Year	PAB coverage estimate (%)
1980	1
1981	3
1982	3
1983	5
1984	6
1985	8
1986	9
1987	19
1988	14
1989	25
1990	63
1991	69
1992	72
1993	84
1994	75
1995	76
1996	82
1997	79
1998	82
1999	86
2000	90
2001	90
2002	90
2003	92
2004	91
2005	92
2006	93
2007	92
2008	94