

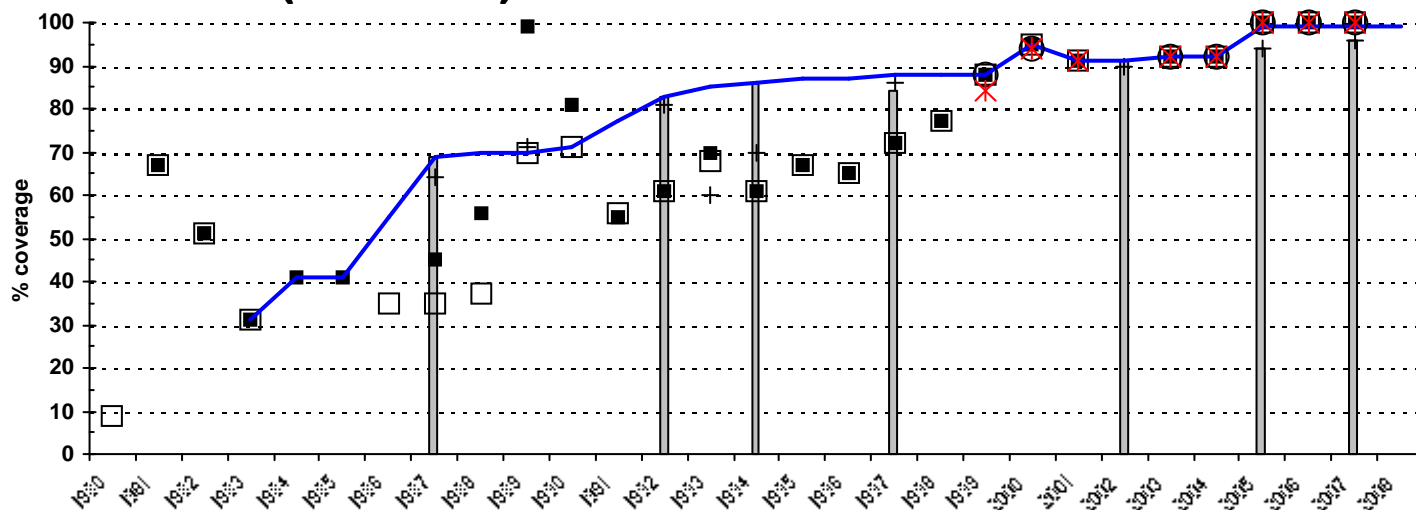
**WHO/UNICEF
Review of National Immunization Coverage
1980-2008**

Ghana

July, 2009

Ghana

BCG (1980-2008)



Description of trend

From 1987-1998 estimates are based on survey results. From 1999 onward estimates are based on nationally reported data confirmed by su

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		9					
1981		67	67				
1982		51	51				
1983	31	31	31				
1984	41		41				
1985	41		41				
1986	55	35					
1987	69	35	45			69	64
1988	70	37	56				
1989	70	70	99				71
1990	71	71	81				
1991	77	56	55				
1992	83	61	61			83	81
1993	85	68	70				60
1994	86	61	61			86	70
1995	87	67	67				
1996	87	65	65				
1997	88	72	72			84	86
1998	88	77	77				
1999	88	88	88	88	84		
2000	95	95	95	94	94		
2001	91	91	91		91		
2002	91	137	137		137	91	90
2003	92	92	92	92	92		
2004	92	92	92	92	92		
2005	99	100	100	100	100	94	94
2006	99	100	100	100	100		
2007	99	100	100	100	100	96	96
2008	99	103	103	103	103		

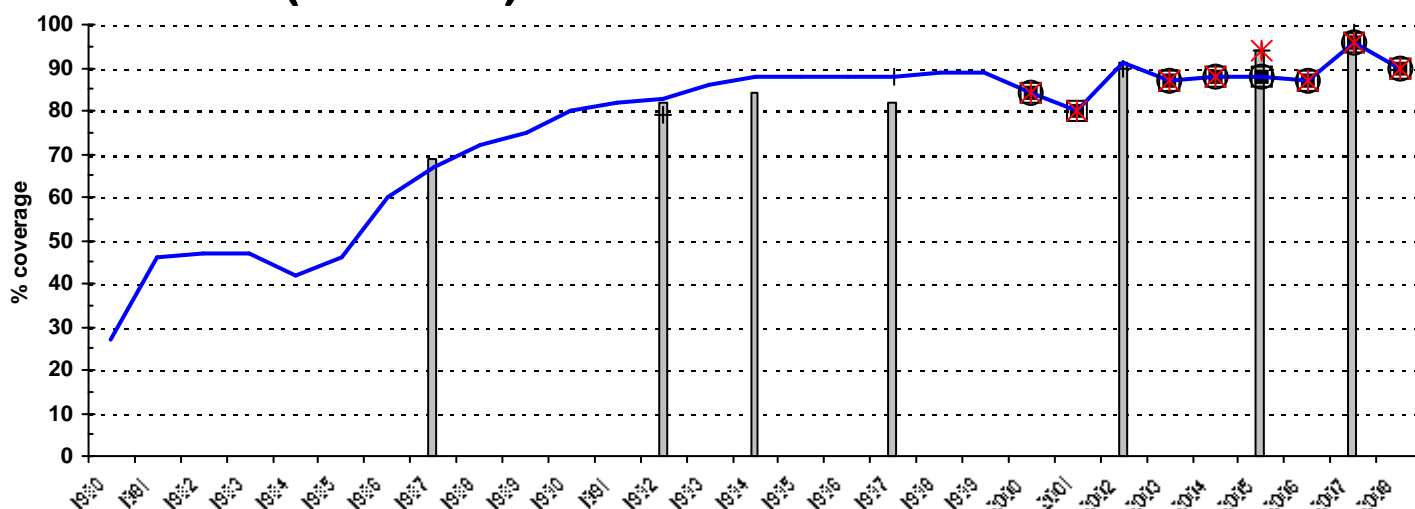
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Ghana

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	27						
1981	46						
1982	47						
1983	47						
1984	42						
1985	46						
1986	60						
1987	67					69	
1988	72						
1989	75						
1990	80						
1991	82						
1992	83					82	79
1993	86						
1994	88					84	
1995	88						
1996	88						
1997	88					82	88
1998	89						
1999	89						
2000	84	84	84	84	84		
2001	80	80	80		80		
2002	91	129	129		129	91	90
2003	87	87	87	87	87		
2004	88	88	88	88	88		
2005	88	88	88	88	94	94	94
2006	87	87	87	87	87		
2007	96	96	96	96	96	98	98
2008	90	90	90	90	90		

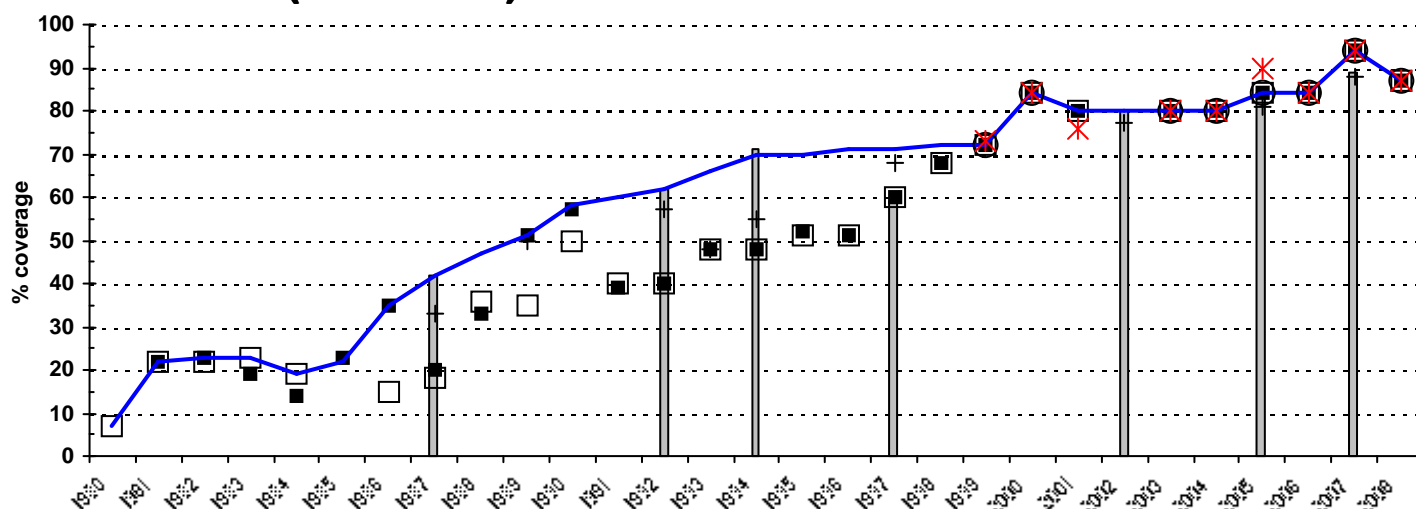
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Ghana

DTP3 (1980-2008)



Description of trend

From 1987-1998 estimates are based on survey results. From 1999 onward estimates are based on nationally reported data confirmed by su

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	7	7					
1981	22	22	22				
1982	23	22	23				
1983	23	23	19				
1984	19	19	14				
1985	22		23				
1986	35	15	35				
1987	42	18	20			42	33
1988	47	36	33				
1989	51	35	51				50
1990	58	50	57				
1991	60	40	39				
1992	62	40	40			62	57
1993	66	48	48				48
1994	70	48	48			71	55
1995	70	51	52				
1996	71	51	51				
1997	71	60	60			59	68
1998	72	68	68				
1999	72	72	72	72	73		
2000	84	84	84	84	84		
2001	80	80	80	80	76		
2002	80	119	119		119	80	77
2003	80	80	80	80	80		
2004	80	80	80	80	80		
2005	84	84	84	84	90	84	81
2006	84	84	84	84	84		
2007	94	94	94	94	94	89	88
2008	87	87	87	87	87		

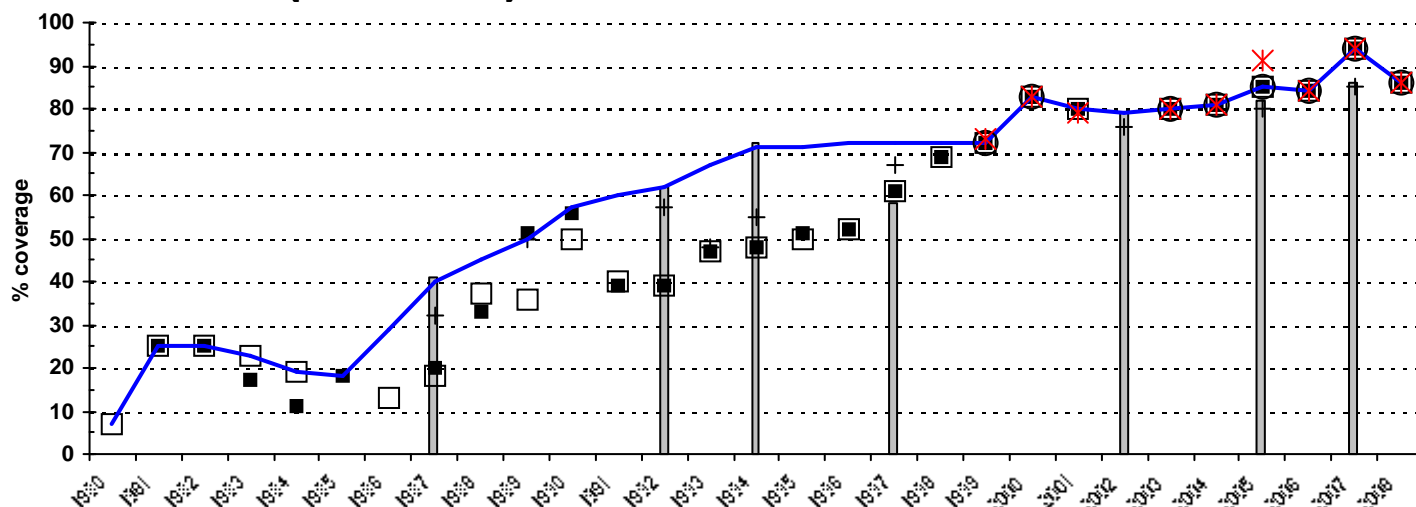
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Ghana

Pol3 (1980-2008)



Description of trend

From 1987-1998 estimates are based on survey results. From 1999 onward 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	7	7					
1981	25	25	25				
1982	25	25	25				
1983	23	23	17				
1984	19	19	11				
1985	18		18				
1986	29	13					
1987	40	18	20			41	32
1988	45	37	33				
1989	50	36	51				50
1990	57	50	56				
1991	60	40	39				
1992	62	39	39			62	57
1993	67	47	47				48
1994	71	48	48			72	55
1995	71	50	51				
1996	72	52	52				
1997	72	61	61			58	67
1998	72	69	69				
1999	72	72	72	72	73		
2000	83	83	83	83	83		
2001	80	80	80		79		
2002	79	120	120		120	79	76
2003	80	80	80	80	80		
2004	81	81	81	81	81		
2005	85	85	85	85	91	82	80
2006	84	84	84	84	84		
2007	94	94	94	94	94	86	85
2008	86	86	86	86	86		

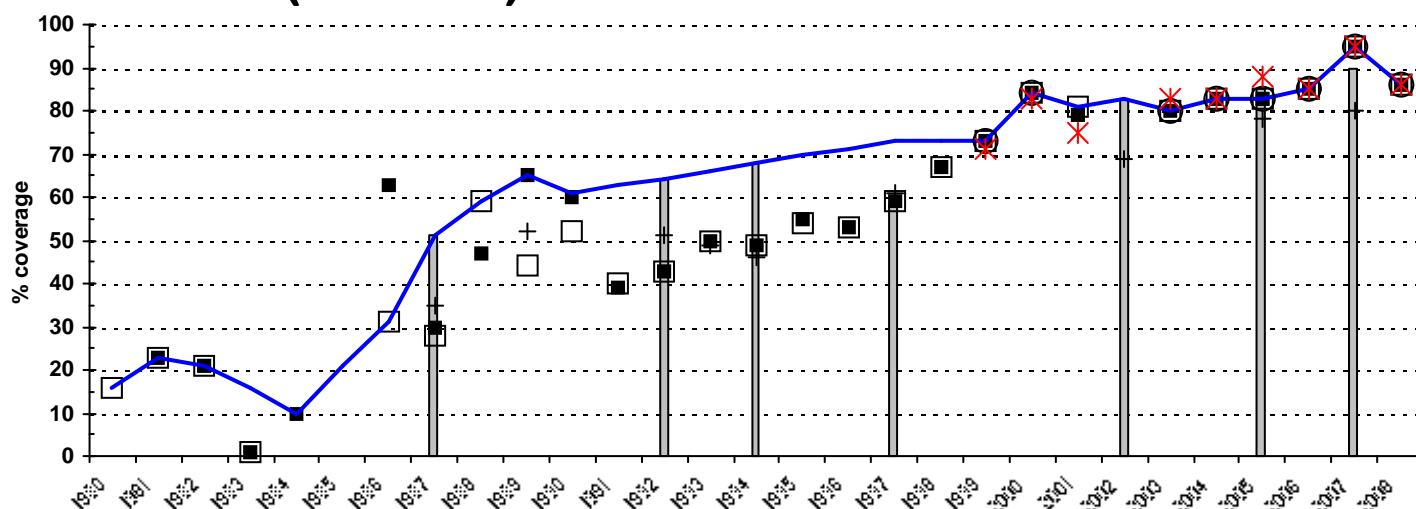
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Ghana

MCV (1980-2008)



Description of trend

From 1987-1998 estimates are based on survey results. From 1999 onward estimates are based on nationally reported data confirmed by su

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	16	16					
1981	23	23	23				
1982	21	21	21				
1983	16	1	1				
1984	10		10				
1985	21						
1986	31	31	63				
1987	51	28	30			51	35
1988	59	59	47				
1989	65	44	65				52
1990	61	52	60				
1991	63	40	39				
1992	64	43	43			64	51
1993	66	50	50				49
1994	68	49	49			68	46
1995	70	54	55				
1996	71	53	53				
1997	73	59	59			58	61
1998	73	67	67				
1999	73	73	73	73	71		
2000	84	84	84	84	83		
2001	81	81	79		75		
2002	83	127	127		127	83	69
2003	80	80	80	80	83		
2004	83	83	83	83	83		
2005	83	83	83	83	88	85	78
2006	85	85	85	85	85		
2007	95	95	95	95	95	90	80
2008	86	86	86	86	86		

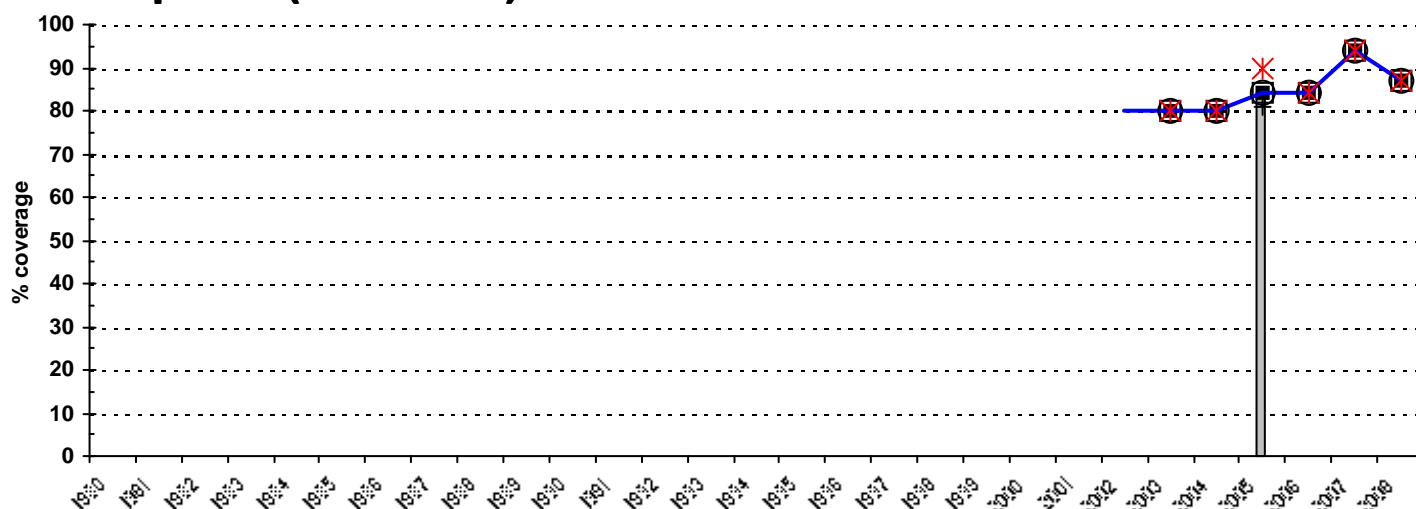
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Ghana

HepB3 (1980-2008)



Description of trend

DTP-HepB B - Hib combination vaccine was introduced in 2002. 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							
1981							
1982							
1983							
1984							
1985							
1986							
1987							
1988							
1989							
1990							
1991							
1992							
1993							
1994							
1995							
1996							
1997							
1998							
1999							
2000							
2001							
2002	80	119	119		119		
2003	80	80	80	80	80		
2004	80	80	80	80	80		
2005	84	84	84	84	90	84	81
2006	84	84	84	84	84		
2007	94	94	94	94	94		
2008	87	87	87	87	87		

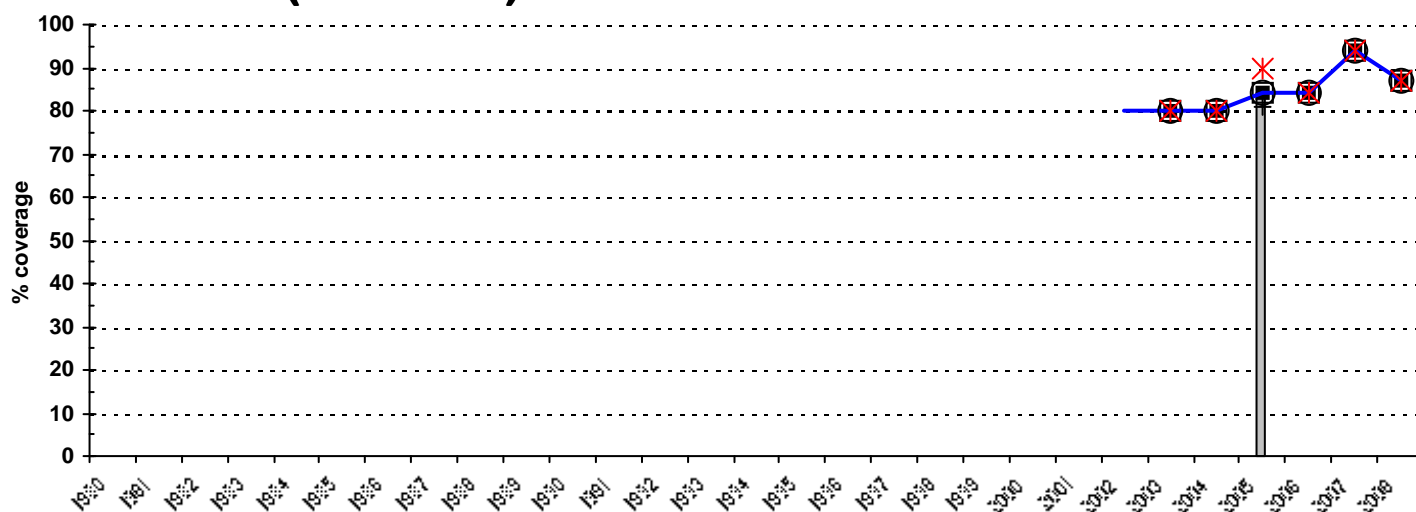
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Ghana

Hib3 (1980-2008)



Description of trend

DTP-HepB B - Hib combination vaccine was introduced in 2002. 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							
1981							
1982							
1983							
1984							
1985							
1986							
1987							
1988							
1989							
1990							
1991							
1992							
1993							
1994							
1995							
1996							
1997							
1998							
1999							
2000							
2001							
2002	80	119	119		119		
2003	80	80	80	80	80		
2004	80	80	80	80	80		
2005	84	84	84	84	90	84	81
2006	84	84	84	84	84		
2007	94	94	94	94	94		
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.

Ghana

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
2007 Ghana Demographic and Health Survey 2008, Preliminary Report								
BCG	Card or History	95.8		12-23 m	552	85.9	2008	
BCG	C or H <12 month	95.6		12-23 m	552	85.9	2008	
DTP1	Card or History	98		12-23 m	552	85.9	2008	
DTP1	C or H <12 month	97.6		12-23 m	552	85.9	2008	
DTP3	Card or History	88.8		12-23 m	552	85.9	2008	
DTP3	C or H <12 month	87.7		12-23 m	552	85.9	2008	
Pol3	Card or History	86.4		12-23 m	552	85.9	2008	
Pol3	C or H <12 month	84.7		12-23 m	552	85.9	2008	
MCV	Card or History	90.2		12-23 m	552	85.9	2008	
MCV	C or H <12 month	79.9		12-23 m	552	85.9	2008	
PAB	n.a.	71.3		CBAW	2909		2008	
2005 Ghana Multiple Indicator Cluster Survey 2006								
BCG	Card or History	94.3		12-23 m	706	85.2	2006	
BCG	C or H <12 month	94.2		12-23 m	706	85.2	2006	
DTP1	Card or History	94.2		12-23 m	706	85.2	2006	
DTP1	C or H <12 month	93.8		12-23 m	706	85.2	2006	
DTP3	Card or History	83.5		12-23 m	706	85.2	2006	
DTP3	C or H <12 month	81.4		12-23 m	706	85.2	2006	
Pol3	Card or History	82.4		12-23 m	706	85.2	2006	
Pol3	C or H <12 month	80.1		12-23 m	706	85.2	2006	
MCV	Card or History	85.4		12-23 m	706	85.2	2006	
MCV	C or H <12 month	77.7		12-23 m	706	85.2	2006	
HepB	Card or History	83.5		12-23 m	706	85.2	2006	
HepB	C or H <12 month	81.4		12-23 m	706	85.2	2006	
Hib3	Card or History	83.5		12-23 m	706	85.2	2006	
Hib3	C or H <12 month	81.4		12-23 m	706	85.2	2006	
PAB	Card or History	77.1		CBAW	1365		2006	
2002 Ghana National Demographic and Health Survey 2003								
BCG	History	12		12-23 m	695	83	2003	
BCG	Card or history	91.1		12-23 m	695	83	2003	
BCG	Card	79.2		12-23 m	695	83	2003	
BCG	C or H <12 month	90		12-23 m	695	83	2003	
DTP1	History	10.4		12-23 m	695	83	2003	
DTP1	Card or history	90.8		12-23 m	695	83	2003	
DTP1	Card	80.5		12-23 m	695	83	2003	
DTP1	C or H <12 month	90		12-23 m	695	83	2003	
DTP3	History	5		12-23 m	695	83	2003	
DTP3	Card or history	79.5		12-23 m	695	83	2003	
DTP3	Card	74.5		12-23 m	695	83	2003	
DTP3	C or H <12 month	76.9		12-23 m	695	83	2003	
Pol3	History	4.9		12-23 m	695	83	2003	
Pol3	Card or history	79.2		12-23 m	695	83	2003	
Pol3	Card	74.3		12-23 m	695	83	2003	
Pol3	C or H <12 month	75.9		12-23 m	695	83	2003	
MCV	History	9.2		12-23 m	695	83	2003	
MCV	Card or history	83.2		12-23 m	695	83	2003	
MCV	Card	74		12-23 m	695	83	2003	
MCV	C or H <12 month	68.8		12-23 m	695	83	2003	

Ghana

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
1997 Ghana Demographic and Health Survey 1998								
BCG	Card or History	84.4		12-23 m	1193	76	1998	
BCG	C or H <12 month	85.9		12-23 m	1193	70.4	1998	
DTP1	Card or History	82.4		12-23 m	1193	76	1998	
DTP1	C or H <12 month	87.7		12-23 m	1193	70.4	1998	
DTP3	Card or History	59.3		12-23 m	1193	76	1998	
DTP3	C or H <12 month	67.6		12-23 m	1193	70.4	1998	
Pol3	Card or History	58.3		12-23 m	1193	76	1998	
Pol3	C or H <12 month	67.1		12-23 m	1193	70.4	1998	
MCV	Card or History	57.5		12-23 m	1193	76	1998	
MCV	C or H <12 month	60.9		12-23 m	1193	70.4	1998	
1994 Ghana, Assessment of the Mid-Decade Goals (Based on MICS 1995), 1996								
BCG	Card or History	86		12-23 m			1995	
BCG	C or H <12 month	70		12-23 m			1995	
DTP1	Card or History	84		12-23 m			1995	
DTP1	C or H <12 month			12-23 m			1995	
DTP3	Card or History	71		12-23 m			1995	
DTP3	C or H <12 month	55		12-23 m			1995	
Pol3	Card or History	72		12-23 m			1995	
Pol3	C or H <12 month	55		12-23 m			1995	
MCV	Card or History	68		12-23 m			1995	
MCV	C or H <12 month	46		12-23 m			1995	
1993 Progress/Utilization Report on the EPI and Safe Motherhood Programme, 1997								
BCG	C or H <12 month	60.5		12-23 m			1994	age group in report 0-12 m. Others years are reported, too, e.g. 1995 data, which is the same as in MICS 95 reported as 12-23 m < 12 m. Therefore assumed to be the same
DTP1	C or H <12 month			12-23 m			1994	
DTP3	C or H <12 month	48		12-23 m			1994	
Pol3	C or H <12 month	48		12-23 m			1994	
MCV	C or H <12 month	49		12-23 m			1994	
1992 Ghana Demographic and Health Survey 1993, 1994								
BCG	Card or History	83.1		12-23 m	651	68.2	1993	
BCG	C or H <12 month	80.8		12-23 m	651	68.2	1993	Confirmation method 'Card' as stated in table p. 100 incorrect; compare p. 102
BCG	C or H <12 month	74.6		24-35 m	664	58.7	1993	
DTP1	Card or History	81.9		12-23 m	651	68.2	1993	
DTP1	C or H <12 month	79.1		12-23 m	651	68.2	1993	Confirmation method 'Card' as stated in table p. 100 incorrect; compare p. 102
DTP1	C or H <12 month	72.8		24-35 m	664	58.7	1993	
DTP3	Card or History	62.4		12-23 m	651	68.2	1993	
DTP3	C or H <12 month	57.3		12-23 m	651	68.2	1993	Confirmation method 'Card' as stated in table p. 100 incorrect; compare p. 102
DTP3	C or H <12 month	46.8		24-35 m	664	58.7	1993	
Pol3	Card or History	62.4		12-23 m	651	68.2	1993	
Pol3	C or H <12 month	57.1		12-23 m	651	68.2	1993	Confirmation method 'Card' as stated in table p. 100 incorrect; compare p. 102
Pol3	C or H <12 month	46.6		24-35 m	664	58.7	1993	
MCV	Card or History	64.4		12-23 m	651	68.2	1993	
MCV	C or H <12 month	50.6		12-23 m	651	68.2	1993	Confirmation method 'Card' as stated in table p. 100 incorrect; compare p. 102
MCV	C or H <12 month	39.6		24-35 m	664	58.7	1993	

Ghana

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
1989 Progress/Utilization Report on the EPI and Safe Motherhood Programme, 1997								
BCG	C or H <12 month	71		12-23 m			1990	age group in report 0-12 m. Others years are reported, too, e.g. 1995 data, which is the same as in MICS 95 reported as 12-23 m < 12 m. Therefore assumed to be the same
DTP1	C or H <12 month			12-23 m			1990	
DTP3	C or H <12 month	50		12-23 m			1990	
Pol3	C or H <12 month	50		12-23 m			1990	
MCV	C or H <12 month	52		12-23 m			1990	

1987 Demographic and Health Surveys Comparative Studies No. 1, Immunization, Boerma et al., Institute for Resource Development/Macro Systems, 1990

BCG	Card or History	69		12-23 m	782		1988	
BCG	C or H <12 month	64		12-23 m	782		1988	
DTP1	Card or History	69		12-23 m	782		1988	
DTP1	C or H <12 month			12-23 m	782		1988	
DTP3	Card or History	42		12-23 m	782		1988	
DTP3	C or H <12 month	33		12-23 m	782		1988	
Pol3	Card or History	41		12-23 m	782		1988	
Pol3	C or H <12 month	32		12-23 m	782		1988	
MCV	Card or History	51		12-23 m	782		1988	
MCV	C or H <12 month	35		12-23 m	782		1988	

Ghana

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.

Ghana

Year	PAB coverage estimate (%)
1980	3
1981	11
1982	11
1983	11
1984	21
1985	34
1986	48
1987	46
1988	42
1989	40
1990	60
1991	63
1992	65
1993	66
1994	67
1995	68
1996	68
1997	69
1998	69
1999	69
2000	69
2001	70
2002	70
2003	74
2004	77
2005	83
2006	85
2007	86
2008	86