

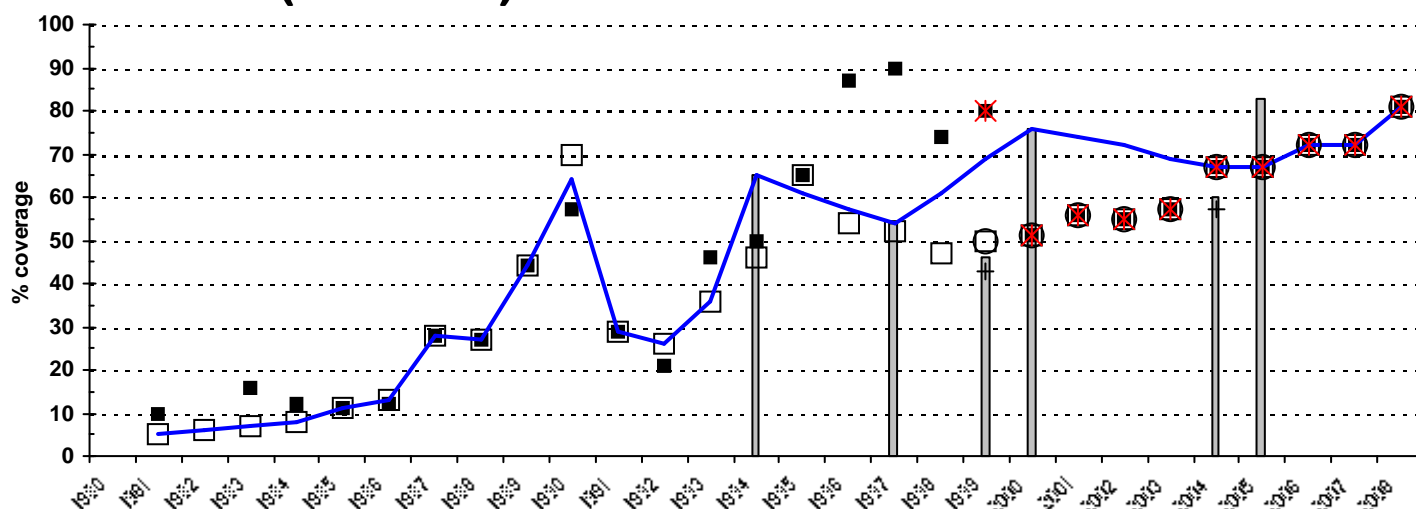
**WHO/UNICEF
Review of National Immunization Coverage
1980-2008**

Ethiopia

July, 2009

Ethiopia

BCG (1980-2008)



Description of trend

Estimates up to 1994 are based on national results and the increase is the result of the African Immunization Year and UCI efforts. From 1999-2000 estimates are based on survey results. Estimates from 2001-2003 are interpolated between the 2000 survey results and the 2004 national reported data. In 2003 a data quality audit was conducted for the Vaccine Fund and the results suggest inadequacies in the routine reporting system. Following improvements in the monitoring system and based on consultation with national authorities, estimates from 2004 onward are based on national reports confirmed by survey. The DHS survey points for 1999 and 2004 appear inconsistent with data from other 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							
1981	5	5	10				
1982	6	6					
1983	7	7	16				
1984	8	8	12				
1985	11	11	11				
1986	13	13	12				
1987	28	28	28				
1988	27	27	27				
1989	44	44	44				
1990	64	70	57				
1991	29	29	29				
1992	26	26	21				
1993	36	36	46				
1994	65	46	50			65	
1995	61	65	65				
1996	57	54	87				
1997	54	52	90			54	
1998	61	47	74				
1999	69	50	80	50	80	46	43
2000	76	51	51	51	51	76	
2001	74	56	56	56	56		
2002	72	55	55	55	55		
2003	69	57	57	57	57		
2004	67	67	67	67	67	60	57
2005	67	67	67	67	67	83	
2006	72	72	72	72	72		
2007	72	72	72	72	72		
2008	81	81	81	81	81		

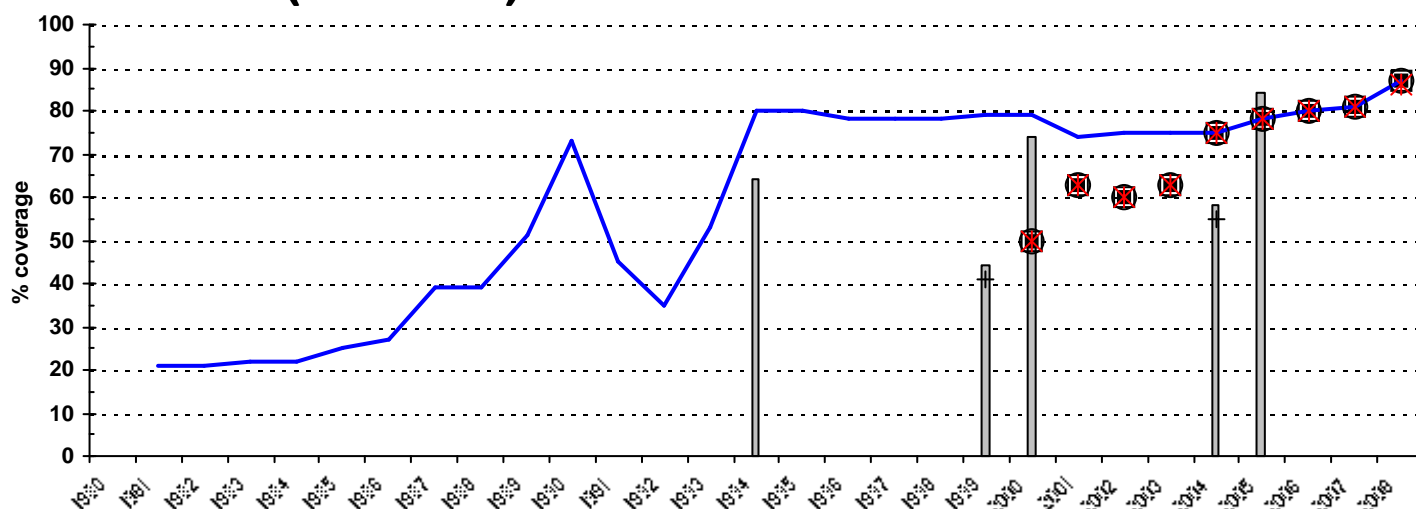
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Ethiopia

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 estimates are derived from the WHO/UNICEF estimates of DTP3, calibration to the 1999 and 2000 survey points, and the relationship between the levels of DTP3 coverage and the dropout between DTP1 and DTP3. This relationship results from an analysis of 28 surveys conducted in 101 countries which were published between 1980 and 2004. Estimates for 2001-2003 are interpolated between the 2000 survey data and the 2004 nationally reported data. In 2003 a data quality audit was conducted for the Vaccine Fund and the results suggest inadequacies in the routine reporting system. Following improvements in the monitoring system and based on consultation with national authorities, estimates from 2004 onward are based on national reports confirmed by survey. The DHS survey points for 1999 and 2004 appear inconsistent with data from other 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							
1981	21						
1982	21						
1983	22						
1984	22						
1985	25						
1986	27						
1987	39						
1988	39						
1989	51						
1990	73						
1991	45						
1992	35						
1993	53						
1994	80					64	
1995	80						
1996	78						
1997	78						
1998	78						
1999	79						
2000	79	50	50	50	50	44	41
2001	74	63	63	63	63	74	
2002	75	60	60	60	60		
2003	75	63	63	63	63		
2004	75	75	75	75	75	58	55
2005	78	78	78	78	78	84	
2006	80	80	80	80	80		
2007	81	81	81	81	81		
2008	87	87	87	87	86		

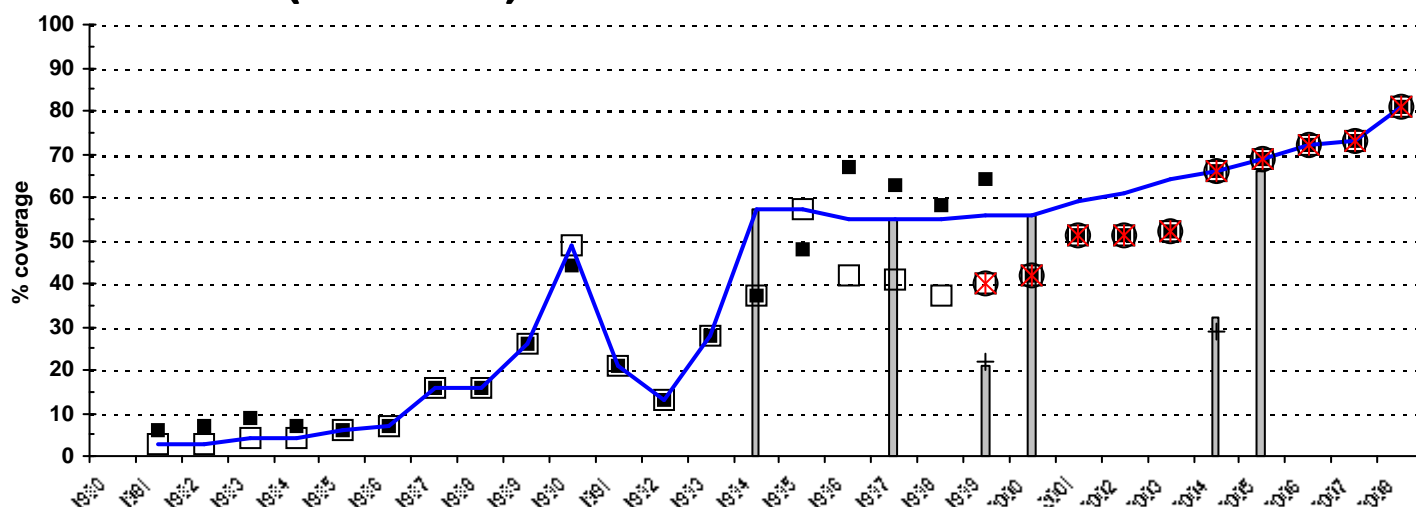
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

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

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Ethiopia

DTP3 (1980-2008)



Description of trend

Estimates until 1993 are based on national results and the increase is the results of the African Immunization Year and UCI efforts. From 1993 2000 estimates are based on survey results. The 2001-2003 estimates are interpolated between the 2000 survey data and the nationally reported data. In 2003 a data quality audit was conducted for the Vaccine Fund and the results suggest inadequacies in the routine reporting system. Following improvements in the monitoring system and based on consultation with national authorities, estimates from 2004 onward are based on national reports confirmed by survey. The DHS survey points for 1999 and 2004 appear inconsistent with data from other 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							
1981	3	3	6				
1982	3	3	7				
1983	4	4	9				
1984	4	4	7				
1985	6	6	6				
1986	7	7	7				
1987	16	16	16				
1988	16	16	16				
1989	26	26	26				
1990	49	49	44				
1991	21	21	21				
1992	13	13	13				
1993	28	28	28				
1994	57	37	37			57	
1995	57	57	48				
1996	55	42	67				
1997	55	41	63			55	
1998	55	37	58				
1999	56	40	64	40	40	21	22
2000	56	42	42	42	42	56	
2001	59	51	51	51	51		
2002	61	51	51	51	51		
2003	64	52	52	52	52		
2004	66	66	66	66	66	32	29
2005	69	69	69	69	69	66	
2006	72	72	72	72	72		
2007	73	73	73	73	73		
2008	81	81	81	81	81		

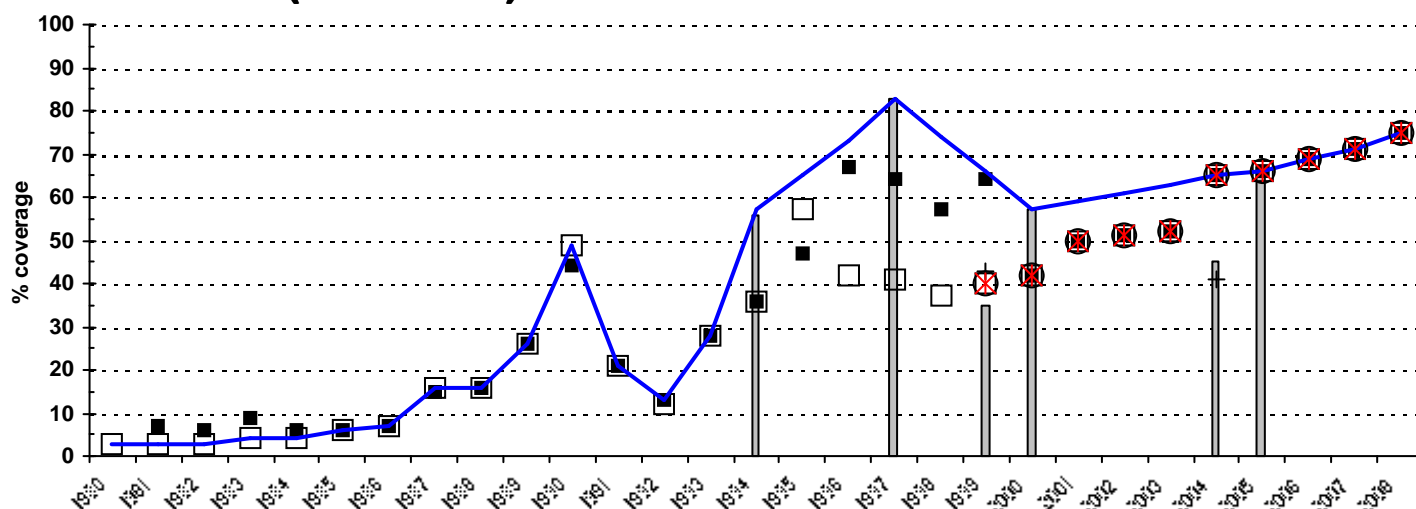
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Ethiopia

Pol3 (1980-2008)



Description of trend

Estimates until 1993 are based on national results and the increase is the result of the African Immunization Year and UCI efforts. From 1994 estimates are based on survey results. The 1997 survey data most likely include immunizations given during polio campaigns. The 2001-2003 estimates are interpolated between the 2000 survey data and the nationally reported data. In 2003 a data quality audit was conducted for the UNICEF and the results suggest inadequacies in the routine reporting system. Following improvements in the monitoring system and based on consultation with national authorities, estimates from 2004 onward are based on national reports confirmed by survey. The DHS survey points 1999 and 2004 appear inconsistent with data from other 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	3	3					
1981	3	3	7				
1982	3	3	6				
1983	4	4	9				
1984	4	4	6				
1985	6	6	6				
1986	7	7	7				
1987	16	16	15				
1988	16	16	16				
1989	26	26	26				
1990	49	49	44				
1991	21	21	21				
1992	13	12	13				
1993	28	28	28				
1994	57	36	36			56	
1995	65	57	47				
1996	73	42	67				
1997	83	41	64			83	
1998	74	37	57				
1999	66	40	64	40	40	35	43
2000	57	42	42	42	42	57	
2001	59	50	50	50	50		
2002	61	51	51	51	51		
2003	63	52	52	52	52		
2004	65	65	65	65	65	45	41
2005	66	66	66	66	66	67	
2006	69	69	69	69	69		
2007	71	71	71	71	71		
2008	75	75	75	75	75		

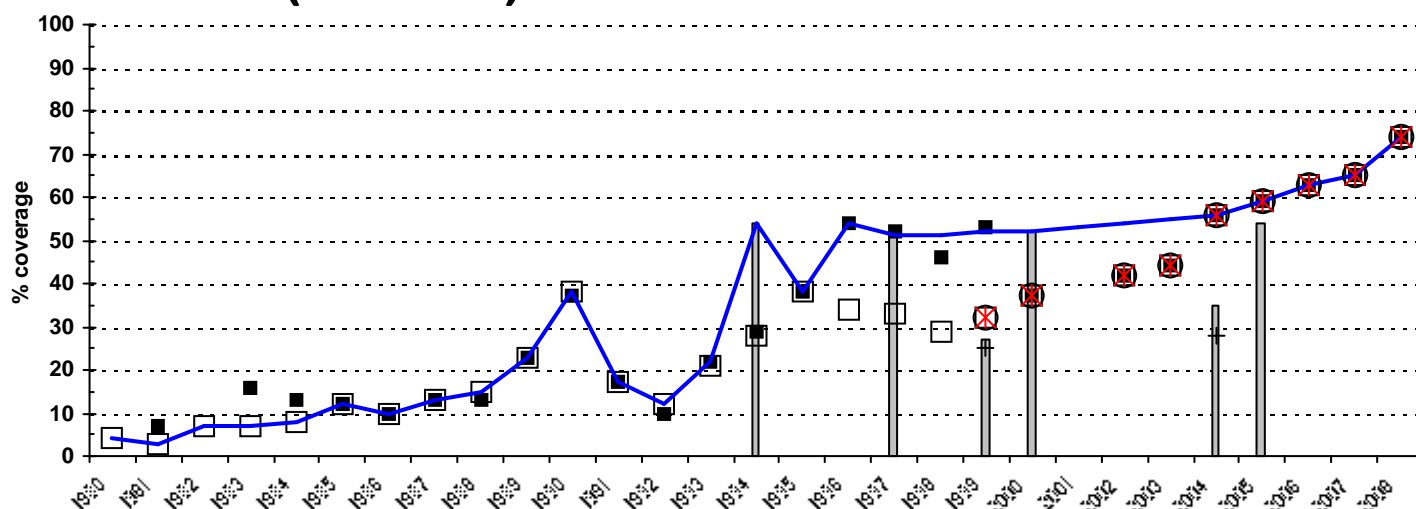
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Ethiopia

MCV (1980-2008)



Description of trend

Estimates until 1993 are based on national results and the increase is the result of the African Immunization Year and UCI efforts. From 1994-2000 estimates are based on survey results. The 2001-2003 estimates are interpolated between the 2000 survey data and the nationally reported data. In 2003 a data quality audit was conducted for the Vaccine Fund and the results suggest inadequacies in the routine reporting system. Following improvements in the monitoring system and based on consultation with national authorities, estimates from 2004 onward are based on national reports confirmed by survey. The DHS survey points for 1999 and 2004 appear inconsistent with data from other 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	4	4					
1981	3	3	7				
1982	7	7					
1983	7	7	16				
1984	8	8	13				
1985	12	12	12				
1986	10	10	10				
1987	13	13	13				
1988	15	15	13				
1989	23	23	23				
1990	38	38	37				
1991	17	17	17				
1992	12	12	10				
1993	22	21	22				
1994	54	28	29			54	
1995	38	38	38				
1996	54	34	54				
1997	51	33	52			51	
1998	51	29	46				
1999	52	32	53	32	32	27	25
2000	52	37	37	37	37	52	
2001	53						
2002	54	42	42	42	42		
2003	55	44	44	44	44		
2004	56	56	56	56	56	35	28
2005	59	59	59	59	59	54	
2006	63	63	63	63	63		
2007	65	65	65	65	65		
2008	74	74	74	74	74		

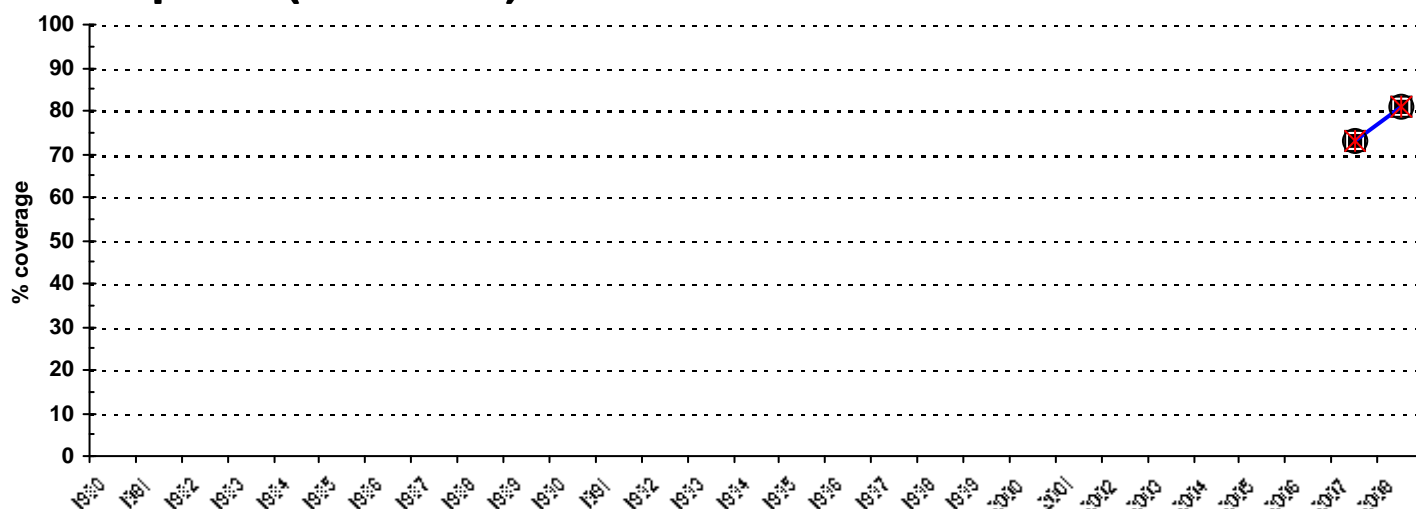
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Ethiopia

HepB3 (1980-2008)



Description of trend

Pentavalent was introduced in the beginning 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	73	73	73	73	73		
2008	81	81	81	81	81		

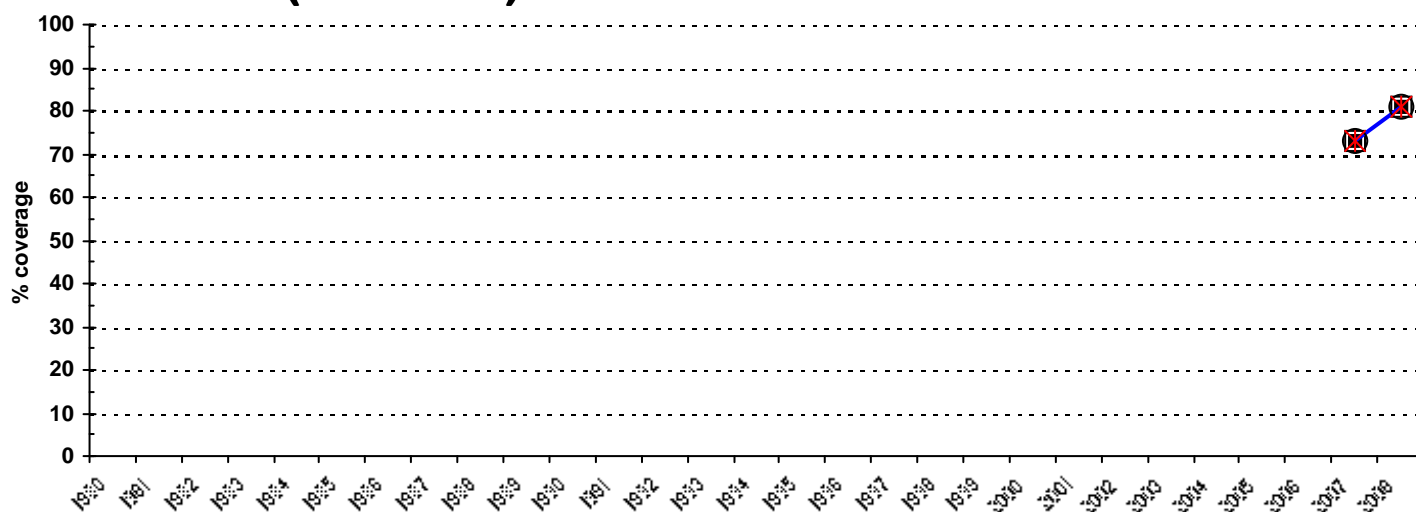
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Ethiopia

Hib3 (1980-2008)



Description of trend

Pentavalent was introduced in the beginning 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	73	73	73	73	73		
2008	81	81	81	81	81		

*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.

Ethiopia

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
2005 EPI Coverage Cluster Sampling Survey 2006 Ethiopia								
BCG	Card or History	83.4		12-23 m	6903	60.5	2006	
DTP1	Card or History	84.3		12-23 m	6903	60.5	2006	
DTP3	Card or History	66		12-23 m	6903	60.5	2006	
Pol3	Card or History	66.8		12-23 m	6903	60.5	2006	
MCV	Card or History	54.3		12-23 m	6903	60.5	2006	
2004 Ethiopia Demographic and Health Survey 2005								
BCG	Card or History	60.4		12-23 m	1877	36.9	2005	
BCG	C or H <12 month	57.4		12-23 m	1877	36.9	2005	
DTP1	Card or History	58.2		12-23 m	1877	36.9	2005	
DTP1	C or H <12 month	54.9		12-23 m	1877	36.9	2005	
DTP3	Card or History	31.9		12-23 m	1877	36.9	2005	
DTP3	C or H <12 month	29		12-23 m	1877	36.9	2005	
Pol3	Card or History	44.7		12-23 m	1877	36.9	2005	
Pol3	C or H <12 month	41		12-23 m	1877	36.9	2005	
MCV	Card or History	34.9		12-23 m	1877	36.9	2005	
MCV	C or H <12 month	28.5		12-23 m	1877	36.9	2005	
2000 National EPI Coverage Survey, Ethiopia 2000, 2001								
BCG	Card or History	75.9		12-23 m	3564	51.6	2001	
DTP1	Card or History	74.1		12-23 m	3564	51.6	2001	
DTP3	Card or History	56.3		12-23 m	3564	51.6	2001	
Pol3	Card or History	57		12-23 m	3564	51.6	2001	
MCV	Card or History	51.9		12-23 m	3564	51.6	2001	
PAB	Card or History	24.4		Women 15-49	3564	42.6	2001	Mothers of infants 0-11 m
1999 Ethiopia Demographic and Health Survey 2000, 2001								
BCG	Card or History	45.6		12-23 m	2143	27	2000	
BCG	C or H <12 month	40.7		12-23 m	2143	27	2000	
BCG	C or H <12 month	43		24-35 m	2084	21.1	2000	
BCG	C or H <12 month	42.9		36-47 m	2260	14.4	2000	
BCG	C or H <12 month	40.3		48-59 m	2080	12.3	2000	
DTP1	Card or History	44.4		12-23 m	2143	27	2000	
DTP1	C or H <12 month	39.8		12-23 m	2143	27	2000	
DTP1	C or H <12 month	40.9		24-35 m	2084	21.1	2000	
DTP1	C or H <12 month	38.7		36-47 m	2260	14.4	2000	
DTP1	C or H <12 month	36.2		48-59 m	2080	12.3	2000	
DTP3	Card or History	20.7		12-23 m	2143	27	2000	
DTP3	C or H <12 month	18.1		12-23 m	2143	27	2000	
DTP3	C or H <12 month	21.4		24-35 m	2084	21.1	2000	
DTP3	C or H <12 month	21.9		36-47 m	2260	14.4	2000	
DTP3	C or H <12 month	18.7		48-59 m	2080	12.3	2000	
Pol3	Card or History	34.6		12-23 m	2143	27	2000	
Pol3	C or H <12 month	30.4		12-23 m	2143	27	2000	
Pol3	C or H <12 month	39.7		24-35 m	2084	21.1	2000	
Pol3	C or H <12 month	42.8		36-47 m	2260	14.4	2000	
Pol3	C or H <12 month	39.2		48-59 m	2080	12.3	2000	
MCV	Card or History	26.6		12-23 m	2143	27	2000	
MCV	C or H <12 month	20.6		12-23 m	2143	27	2000	
MCV	C or H <12 month	21.7		24-35 m	2084	21.1	2000	

Ethiopia

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	19.8		36-47 m	2260	14.4	2000	
MCV	C or H <12 month	24.8		48-59 m	2080	12.3	2000	

1997 Ethiopia, Report on the 1998 Health and Nutrition Survey, 1999

BCG	Card or History	52.5		12-23 m			1998	
BCG	Card or History	54		24-35 m			1998	
BCG	Card or History	52.7		36-47 m			1998	
BCG	Card or History	50.8		48-59 m			1998	
DTP1	Card or History			12-23 m			1998	
DTP3	Card or History	53.3		12-23 m			1998	Same data reported in: Ethiopia, Report on the 1998 Welfare Monitoring Survey, 1999
DTP3	Card or History	55.1		24-35 m			1998	
DTP3	Card or History	53.1		36-47 m			1998	
DTP3	Card or History	52.2		48-59 m			1998	
Pol3	Card or History	81.8		12-23 m			1998	
Pol3	Card or History	82.8		24-35 m			1998	
Pol3	Card or History	80.7		36-47 m			1998	
Pol3	Card or History	79		48-59 m			1998	
MCV	Card or History	48.7		12-23 m			1998	
MCV	Card or History	51.2		24-35 m			1998	
MCV	Card or History	51.1		36-47 m			1998	
MCV	Card or History	49.8		48-59 m			1998	

1994 MICS Ethiopia, 1996

BCG	Card or History	64.6		12-23 m	1004	53.5	1995	Weighted national estimates
DTP1	Card or History	64.3		12-23 m	1004	53.5	1995	Weighted national estimates
DTP3	Card or History	57.4		12-23 m	1004	53.5	1995	Weighted national estimates
Pol3	Card or History	56.5		12-23 m	1004	53.5	1995	Weighted national estimates
MCV	Card or History	54.4		12-23 m	1004	53.5	1995	Weighted national estimates

Ethiopia

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.

Ethiopia

Year	PAB coverage estimate (%)
1980	
1981	2
1982	2
1983	4
1984	4
1985	5
1986	7
1987	9
1988	13
1989	27
1990	24
1991	17
1992	17
1993	20
1994	25
1995	34
1996	39
1997	51
1998	42
1999	48
2000	54
2001	60
2002	67
2003	71
2004	77
2005	80
2006	82
2007	83
2008	84