

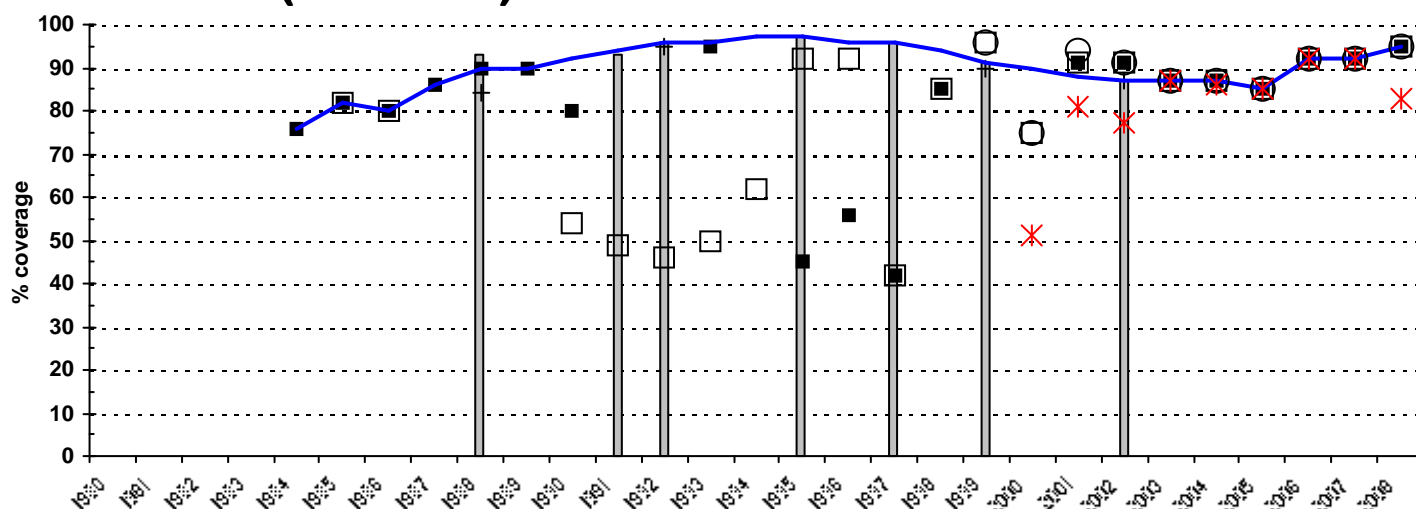
**WHO/UNICEF
Review of National Immunization Coverage
1980-2008**

Kenya

July, 2009

Kenya

BCG (1980-2008)



Description of trend

Coverage estimates are based on survey results from 1991-2002. Withdrawal of donor staff from KEPI Central Management Unit in 1995 led the decline in the routine data reported. Since 2003 data management has been improved at all levels with increased compliance to the standard procedures for reporting and updating data. WHO/UNICEF recommend conducting a high quality surveys to verify reported levels of coverage.

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	76		76				
1985	82	82	82				
1986	80	80	80				
1987	86		86				
1988	90		90			93	84
1989	90		90				
1990	92	54	80				
1991	94	49				93	
1992	96	46				96	95
1993	96	50	95				
1994	97	62					
1995	97	92	45			97	
1996	96	92	56				
1997	96	42	42			96	
1998	94	85	85				
1999	91	96		96		91	90
2000	90	75		75	51		
2001	88	91	91	94	81		
2002	87	91	91	91	77	87	87
2003	87	87	87	87	87		
2004	87	87	87	87	86		
2005	85	85	85	85	85		
2006	92	92	92	92	92		
2007	92	92	92	92	92		
2008	95	95	95	95	83		

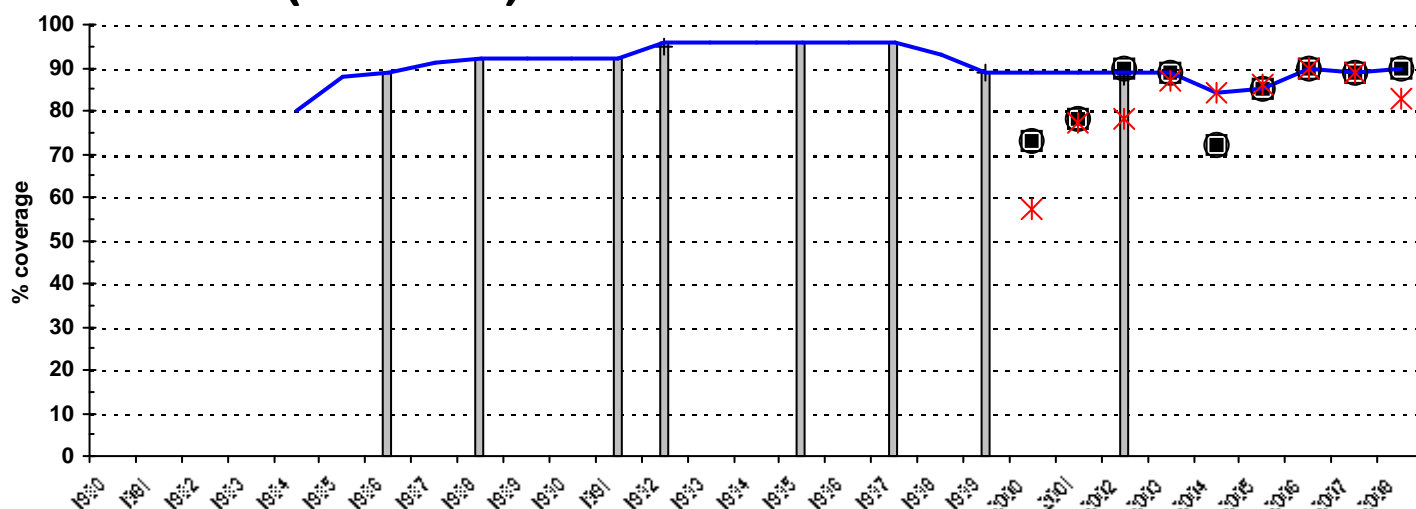
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Kenya

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. Estimates are based on survey data. Since 2003 data management has been improved at all levels with increased compliance to the standard procedures for reporting and updating data. WHO/UNICEF recommend conducting a high quality survey to verify reported levels of coverage.

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	80						
1985	88						
1986	89					89	
1987	91						
1988	92					92	
1989	92						
1990	92					92	
1992	96					96	95
1993	96						
1994	96						
1995	96					96	
1996	96						
1997	96					96	
1998	93						
1999	89					89	89
2000	89	73	73	73	57		
2001	89	78	78	78	77		
2002	89	90	90	90	78	89	88
2003	89	89	89	89	87		
2004	84	72	72	72	84		
2005	85	85	85	85	86		
2006	90	90	90	90	90		
2007	89	89	89	89	89		
2008	90	90	90	90	83		

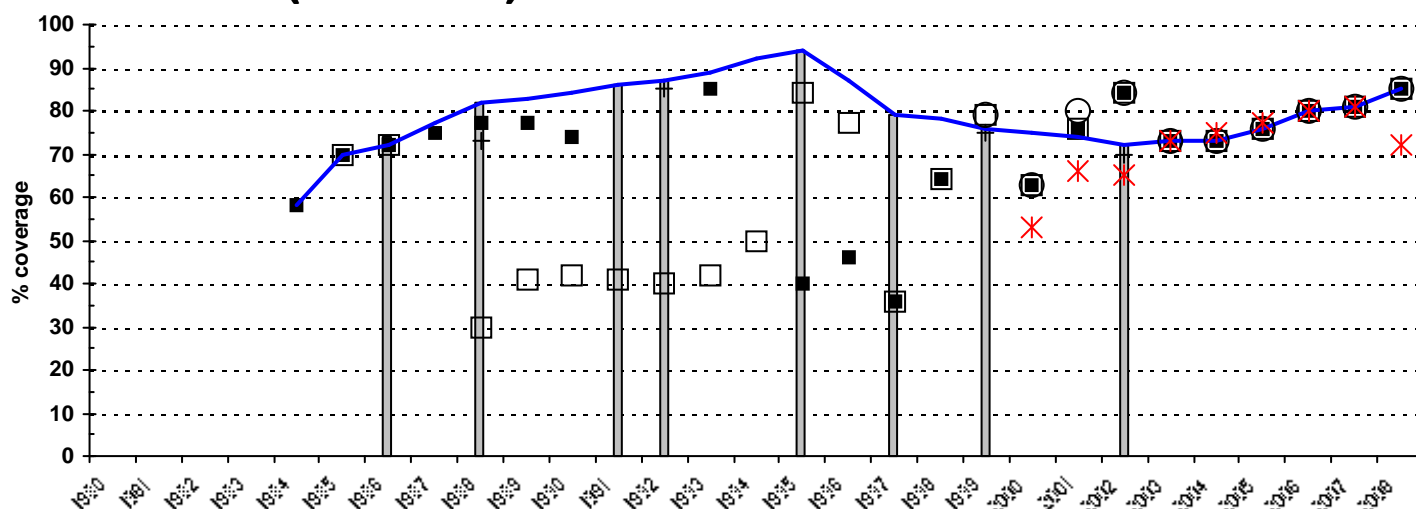
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Kenya

DTP3 (1980-2008)



Description of trend

Coverage estimates are based on survey results from 1996-2002. Withdrawal of donor staff from KEPI Central Management Unit in 1995 led the decline in the routine data reported. Since 2003 data management has been improved at all levels with increased compliance to the standard procedures for reporting and updating data. WHO/UNICEF recommend conducting a high quality surveys to verify reported levels of coverage.

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	58		58				
1985	70	70	70				
1986	72	72	72			74	
1987	77		75				
1988	82	30	77			82	73
1989	83	41	77				
1990	84	42	74				
1991	86	41				86	
1992	87	40				87	85
1993	89	42	85				
1994	92	50					
1995	94	84	40			94	
1996	87	77	46				
1997	79	36	36			79	
1998	78	64	64				
1999	76	79		79		76	75
2000	75	63	63	63	53		
2001	74	76	76	80	66		
2002	72	84	84	84	65	72	70
2003	73	73	73	73	73		
2004	73	73	73	73	75		
2005	76	76	76	76	77		
2006	80	80	80	80	80		
2007	81	81	81	81	81		
2008	85	85	85	85	72		

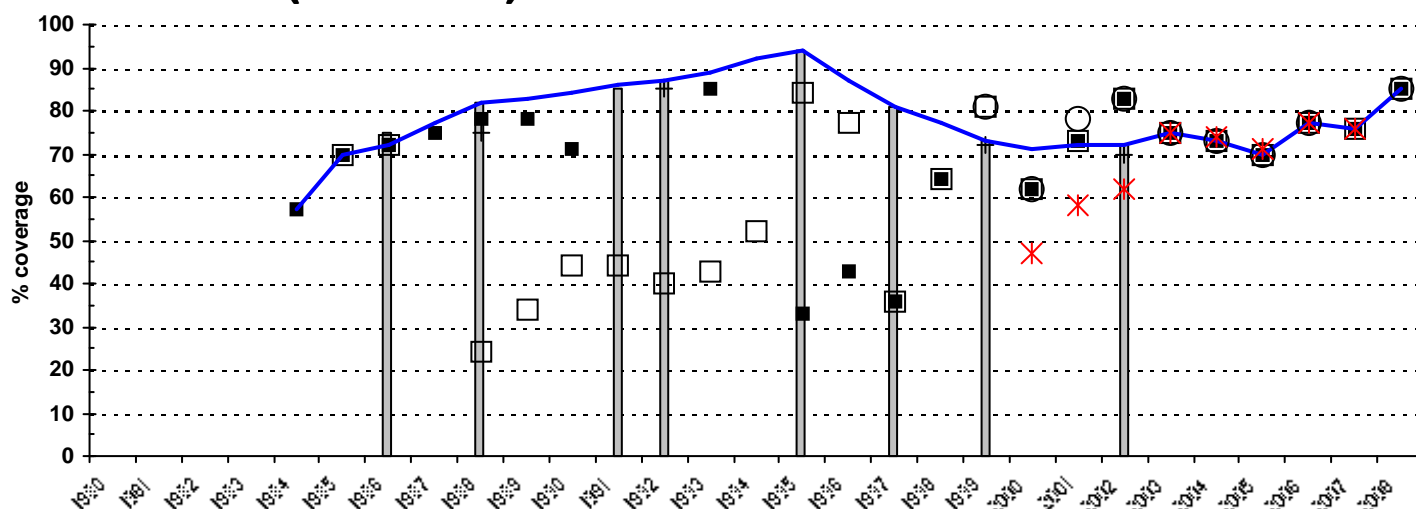
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Kenya

Pol3 (1980-2008)



Description of trend

Coverage estimates are based on survey results from 1996-2002. Withdrawal of donor staff from KEPI Central Management Unit in 1995 led to decline in the routine data reported. Since 2003 data management has been improved at all levels with increased compliance to the standard procedures for reporting and updating data. WHO/UNICEF recommend conducting a high quality survey to verify reported levels of coverage

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	57		57				
1985	70	70	70				
1986	72	72	72			75	
1987	77		75				
1988	82	24	78			82	75
1989	83	34	78				
1990	84	44	71				
1991	86	44				85	
1992	87	40				87	85
1993	89	43	85				
1994	92	52					
1995	94	84	33			94	
1996	87	77	43				
1997	81	36	36			81	
1998	77	64	64				
1999	73	81		81		73	72
2000	71	62	62	62	47		
2001	72	73	73	78	58		
2002	72	83	83	83	62	72	70
2003	75	75	75	75	75		
2004	73	73	73	73	74		
2005	70	70	70	70	71		
2006	77	77	77	77	77		
2007	76	76	76		76		
2008	85	85	85	85			

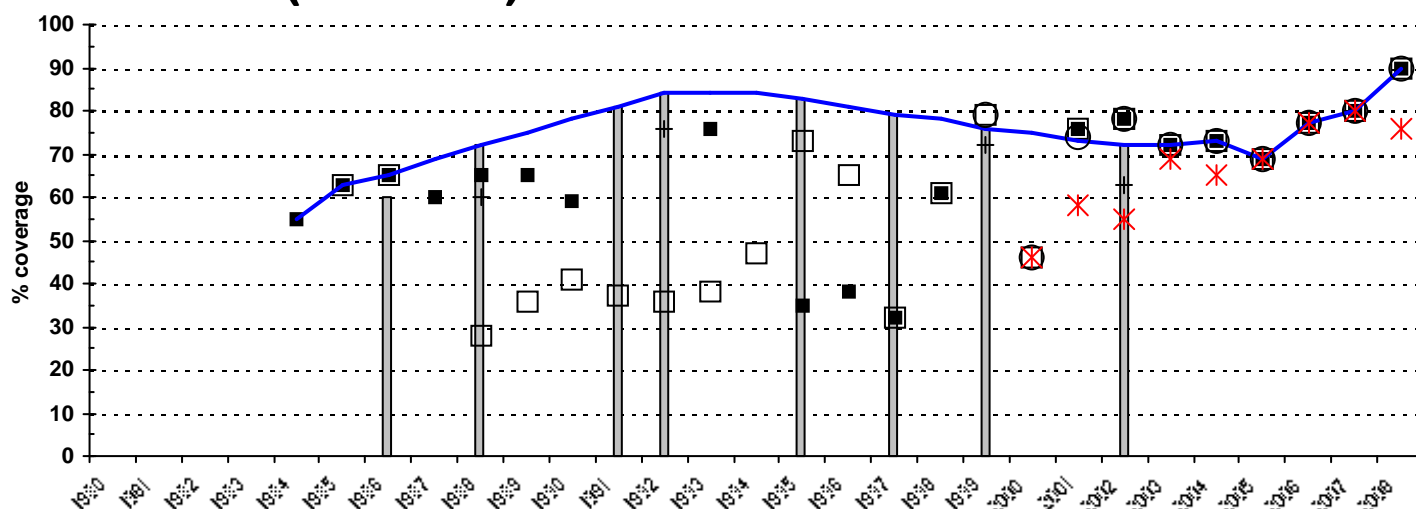
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Kenya

MCV (1980-2008)



Description of trend

Coverage estimates are based on survey results from 1996-2002. Withdrawal of donor staff from KEPI Central Management Unit in 1995 led the decline in the routine data reported. Since 2003 data management has been improved at all levels with increased compliance to the standard procedures for reporting and updating data. WHO/UNICEF recommend conducting a high quality survey to verify reported levels of coverage.

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	55		55				
1985	63	63	63				
1986	65	65	65			60	
1987	69		60				
1988	72	28	65			72	60
1989	75	36	65				
1990	78	41	59				
1991	81	37				81	
1992	84	36				84	76
1993	84	38	76				
1994	84	47					
1995	83	73	35			83	
1996	81	65	38				
1997	79	32	32			79	
1998	78	61	61				
1999	76	79		79		76	72
2000	75	46		46	46		
2001	73	76	76	74	58		
2002	72	78	78	78	55	72	63
2003	72	72	72	72	69		
2004	73	73	73	73	65		
2005	69	69	69	69	69		
2006	77	77	77	77	77		
2007	80	80	80	80	80		
2008	90	90	90	90	76		

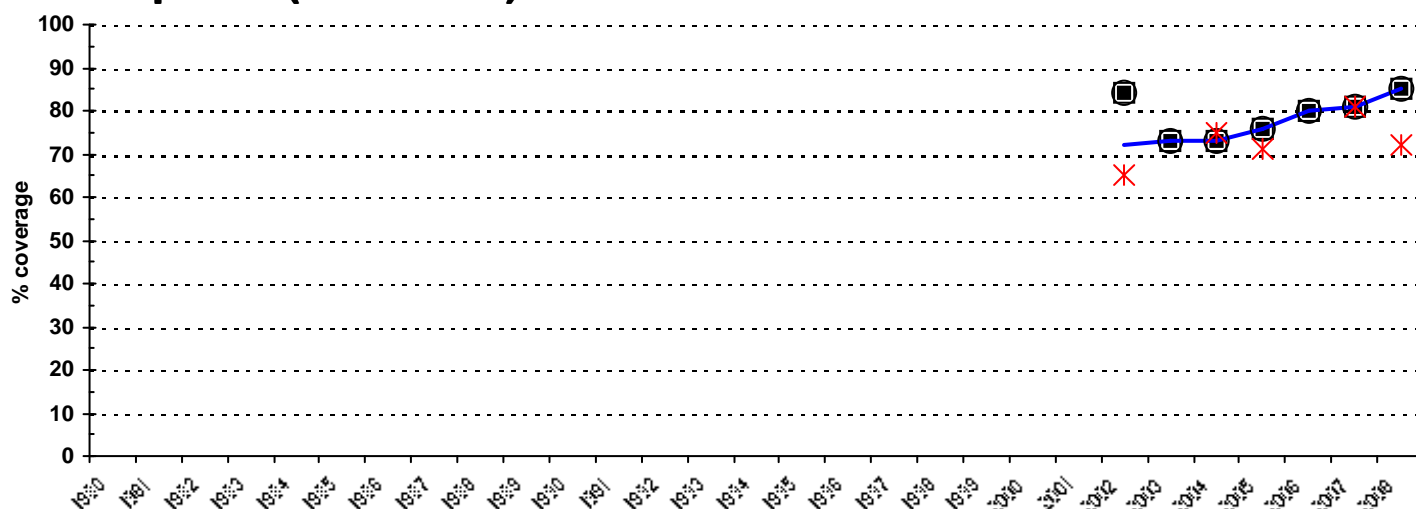
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Kenya

HepB3 (1980-2008)



Description of trend

Pentavalent vaccine of DTP, hepatitis B and Hib introduced in 2001. Since 2003 data management has been improved at all levels with increased compliance to the standard operating procedures for reporting and updating 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							
2000							
2001							
2002	72	84	84	84	65		
2003	73	73	73	73			
2004	73	73	73	73	75		
2005	76	76	76	76	71		
2006	80	80	80	80			
2007	81	81	81	81	81		
2008	85	85	85	85	72		

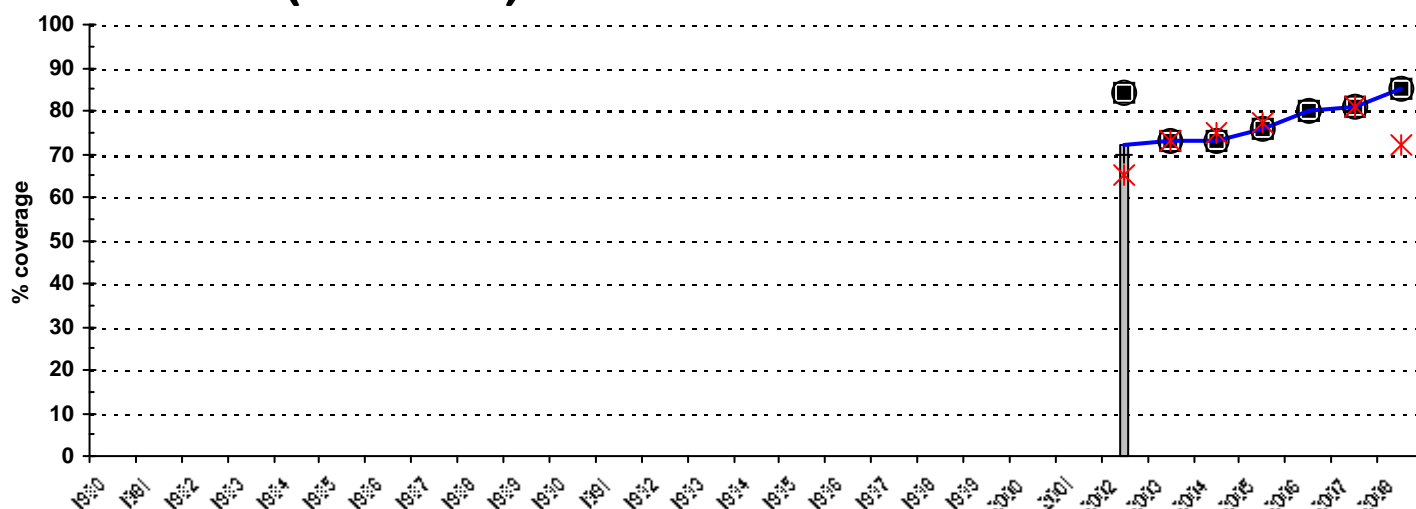
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Kenya

Hib3 (1980-2008)



Description of trend

Pentavalent vaccine of DTP, Hepatitis B and Hib introduced in 2001. Since 2003 data management has been improved at all levels with increased compliance to the standard operating procedures for reporting and updating 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							
2000							
2001							
2002	72	84	84	84	65	72	70
2003	73	73	73	73	73		
2004	73	73	73	73	75		
2005	76	76	76	76	77		
2006	80	80	80	80			
2007	81	81	81	81	81		
2008	85	85	85	85	72		

*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.

Kenya

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
2002 National Demographic and Health Survey 2003								
BCG	History	30.3		12-23 m	1131	59.9	2003	
BCG	Card or history	87.3		12-23 m	1131	59.9	2003	
BCG	Card	57		12-23 m	1131	59.9	2003	
BCG	C or H <12 month	87		12-23 m	1131	59.9	2003	
DTP1	History	29.9		12-23 m	1131	59.9	2003	
DTP1	Card or history	89.2		12-23 m	1131	59.9	2003	
DTP1	Card	59.3		12-23 m	1131	59.9	2003	
DTP1	C or H <12 month	88.2		12-23 m	1131	59.9	2003	
DTP3	History	19.6		12-23 m	1131	59.9	2003	
DTP3	Card or history	72.2		12-23 m	1131	59.9	2003	
DTP3	Card	52.6		12-23 m	1131	59.9	2003	
DTP3	C or H <12 month	70.5		12-23 m	1131	59.9	2003	
Pol3	History	20.3		12-23 m	1131	59.9	2003	
Pol3	Card or history	72.5		12-23 m	1131	59.9	2003	
Pol3	Card	52.2		12-23 m	1131	59.9	2003	
Pol3	C or H <12 month	70.3		12-23 m	1131	59.9	2003	
MCV	History	26.1		12-23 m	1131	59.9	2003	
MCV	Card or history	72.5		12-23 m	1131	59.9	2003	
MCV	Card	46.4		12-23 m	1131	59.9	2003	
MCV	C or H <12 month	62.8		12-23 m	1131	59.9	2003	
Hib3	History	19.6		12-23 m	1131	59.9	2003	
Hib3	Card or history	72.2		12-23 m	1131	59.9	2003	
Hib3	Card	52.6		12-23 m	1131	59.9	2003	
Hib3	C or H <12 month	70.5		12-23 m	1131	59.9	2003	
1999 Kenya Multiple Indicator Cluster Survey 2000, 2001								
BCG	Card or History	90.9		12-23 m	1544		2000	
BCG	C or H <12 month	90.5		12-23 m	1544		2000	
DTP1	Card or History	89.4		12-23 m	1544		2000	
DTP1	C or H <12 month	88.9		12-23 m	1544		2000	
DTP3	Card or History	76.2		12-23 m	1544		2000	
DTP3	C or H <12 month	75.1		12-23 m	1544		2000	
Pol3	Card or History	72.8		12-23 m	1544		2000	
Pol3	C or H <12 month	71.7		12-23 m	1544		2000	
MCV	Card or History	76.1		12-23 m	1544		2000	
MCV	C or H <12 month	71.6		12-23 m	1544		2000	
1997 Kenya Demographic and Health Survey 1998, 1999								
BCG	Card or History	95.9		12-23 m	1097	55.4	1998	
DTP1	Card or History	95.8		12-23 m	1097	55.4	1998	
DTP3	Card or History	79.2		12-23 m	1097	55.4	1998	
Pol3	Card or History	80.8		12-23 m	1097	55.4	1998	
MCV	Card or History	79.2		12-23 m	1097	55.4	1998	
1995 Kenya Multiple Indicator Cluster Survey 1996								
BCG	Card or History	96.6	Crude	12-23 m	1544		1996	Crude data
DTP1	Card or History	95.9	Crude	12-23 m	1544		1996	Crude data
DTP3	Card or History	93.8	Crude	12-23 m	1544		1996	Crude data
Pol3	Card or History	93.8	Crude	12-23 m	1544		1996	Crude data
MCV	Card or History	83.4	Crude	12-23 m	1544		1996	Crude data

Kenya

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
1993 Kenya EPI Immunization Coverage Survey 1994								
PAB	Card or History	72		Women 15-49		35	1994	Two doses last pregnancy/one injection last pregnancy combined with 1+ injections in second last pregnancy

1992 Kenya Demographic and Health Survey 1993, 1994

BCG	Card or History	96.3		12-23 m	1124	69.2	1993	
BCG	C or H <12 month	94.7		12-23 m	1124	69.2	1993	
BCG	C or H <12 month	93.5		24-35 m	1124	62.7	1993	
BCG	C or H <12 month	92.6		36-47 m	1231	57.5	1993	
BCG	C or H <12 month	92.9		48-59 m	1050	52.9	1993	
DTP1	Card or History	95.8		12-23 m	1124	69.2	1993	
DTP1	C or H <12 month	95.3		12-23 m	1124	69.2	1993	
DTP1	C or H <12 month	93.6		24-35 m	1124	62.7	1993	
DTP1	C or H <12 month	91.6		36-47 m	1231	57.5	1993	
DTP1	C or H <12 month	91.1		48-59 m	1050	52.9	1993	
DTP3	Card or History	86.9		12-23 m	1124	69.2	1993	
DTP3	C or H <12 month	85.3		12-23 m	1124	69.2	1993	
DTP3	C or H <12 month	80.4		24-35 m	1124	62.7	1993	
DTP3	C or H <12 month	81.9		36-47 m	1231	57.5	1993	
DTP3	C or H <12 month	78.1		48-59 m	1050	52.9	1993	
Pol3	Card or History	86.7		12-23 m	1124	69.2	1993	
Pol3	C or H <12 month	85.4		12-23 m	1124	69.2	1993	
Pol3	C or H <12 month	80		24-35 m	1124	62.7	1993	
Pol3	C or H <12 month	80.3		36-47 m	1231	57.5	1993	
Pol3	C or H <12 month	78.2		48-59 m	1050	52.9	1993	
MCV	Card or History	83.8		12-23 m	1124	69.2	1993	
MCV	C or H <12 month	76.3		12-23 m	1124	69.2	1993	
MCV	C or H <12 month	69.9		24-35 m	1124	62.7	1993	
MCV	C or H <12 month	71.7		36-47 m	1231	57.5	1993	
MCV	C or H <12 month	69.7		48-59 m	1050	52.9	1993	

1991 Kenya EPI National Immunization Coverage Survey 1992

BCG	Card or History	93	Crude	12-23 m	8996	79.7	1992	
DTP1	Card or History	91.6	Crude	12-23 m	8996	79.7	1992	
DTP3	Card or History	85.8	Crude	12-23 m	8996	79.7	1992	
Pol3	Card or History	85	Crude	12-23 m	8996	79.7	1992	
MCV	Card or History	81.2	Crude	12-23 m	8996	79.7	1992	
PAB	Card or History	71.1		Women 15-49		31	1992	Two doses last pregnancy + one injection last pregnancy combined with 1+ injections in second last pregnancy

1988 Demographic and Health Surveys Comparative Studies No. 1, Immunization, Boerma et al., Institute for Resource Development/Macro Systems, 1990

BCG	Card or History	93		12-23 m	1315	61	1989	
BCG	C or H <12 month	84		12-23 m	1315	61	1989	
DTP1	Card or History	92		12-23 m	1315	61	1989	
DTP1	C or H <12 month			12-23 m	1315	61	1989	
DTP3	Card or History	82		12-23 m	1315	61	1989	
DTP3	C or H <12 month	73		12-23 m	1315	61	1989	
Pol3	Card or History	82		12-23 m	1315	61	1989	
Pol3	C or H <12 month	75		12-23 m	1315	61	1989	
MCV	Card or History	72		12-23 m	1315	61	1989	
MCV	C or H <12 month	60		12-23 m	1315	61	1989	

Kenya

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
1986 National Immunization Coverage Survey Kenya 1987								
DTP1	Card or History	89		12-23 m		75	1987	
DTP3	Card or History	74		12-23 m		75	1987	
Pol3	Card or History	75		12-23 m		75	1987	
MCV	Card or History	60		12-23 m		75	1987	

Kenya

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.

Kenya

Year	PAB coverage estimate (%)
1980	
1981	
1982	
1983	
1984	
1985	36
1986	52
1987	66
1988	51
1989	59
1990	60
1991	57
1992	61
1993	64
1994	62
1995	61
1996	47
1997	61
1998	74
1999	68
2000	68
2001	69
2002	72
2003	73
2004	73
2005	73
2006	74
2007	74
2008	78