

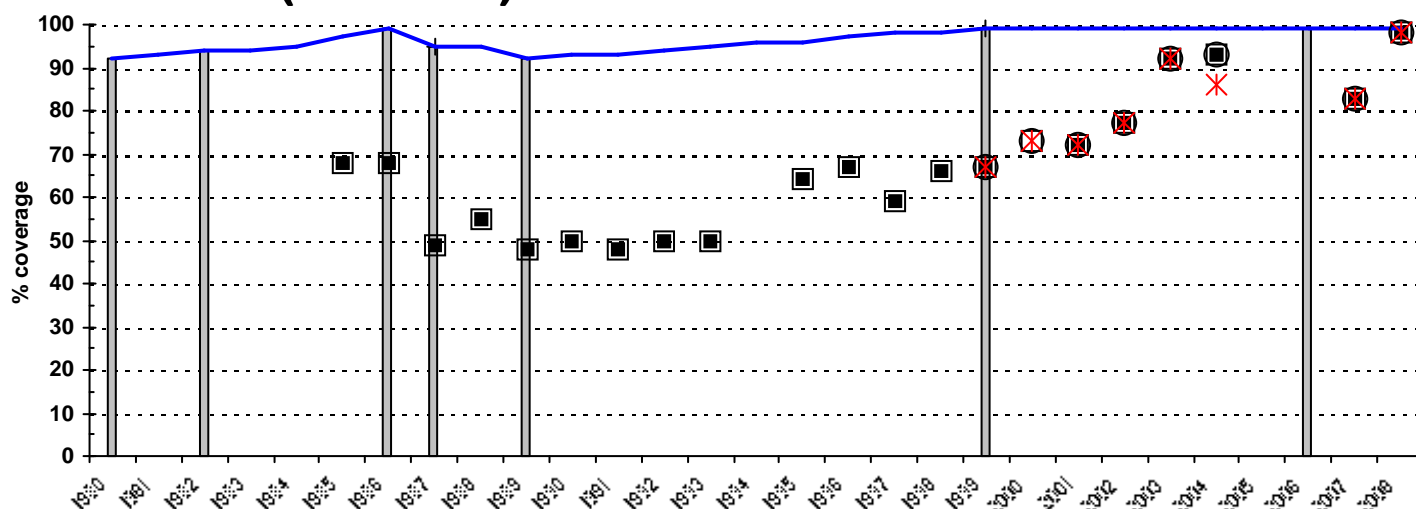
**WHO/UNICEF
Review of National Immunization Coverage
1980-2008**

Botswana

July, 2009

Botswana

BCG (1980-2008)



Description of trend

Estimates are based on survey 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	92					92	
1981	93						
1982	94					94	
1983	94						
1984	95						
1985	97	68	68				
1986	99	68	68			99	
1987	95	49	49			95	95
1988	95	55	55				
1989	92	48	48			92	
1990	93	50	50				
1991	93	48	48				
1992	94	50	50				
1993	95	50	50				
1994	96						
1995	96	64	64				
1996	97	67	67				
1997	98	59	59				
1998	98	66	66				
1999	99	67	67	67	67	99	99
2000	99	73		73	73		
2001	99	72	72	72	72		
2002	99	77	77	77	77		
2003	99	92	92	92	92		
2004	99	93	93	93	86		
2005	99	126	126	126	126		
2006	99	118	118	118	118	99	
2007	99	83	83	83	83		
2008	99	98	98	98	98		

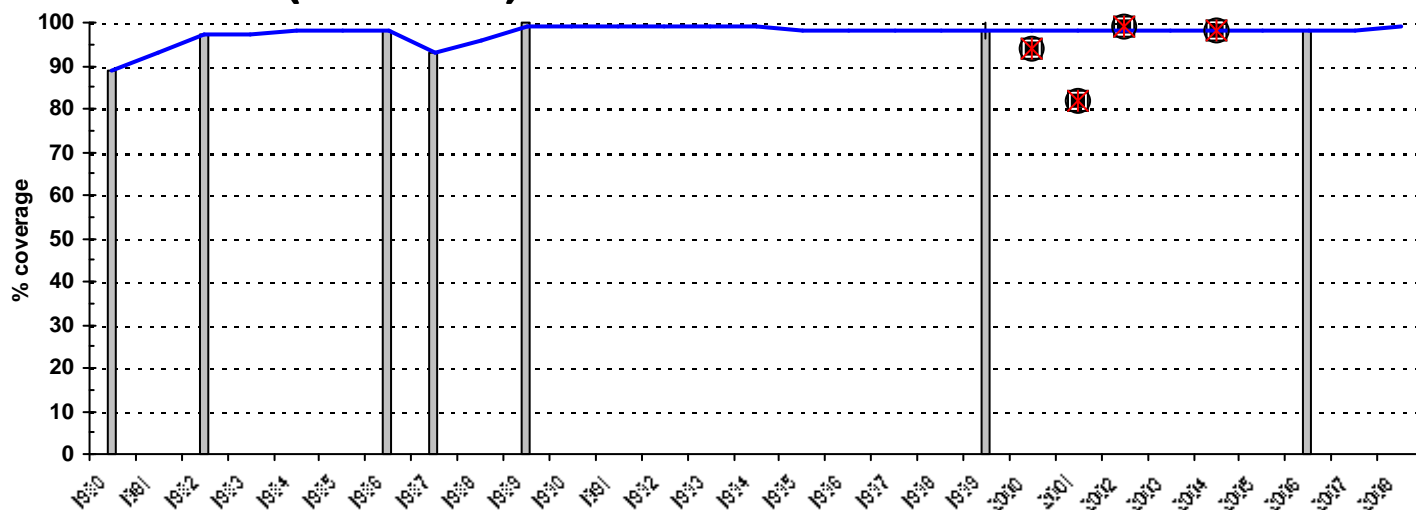
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Botswana

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 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	89					89	
1981	93						
1982	97					97	
1983	97						
1984	98						
1985	98						
1986	98					98	
1987	93					93	
1988	96						
1989	99					100	
1990	99						
1991	99						
1992	99						
1993	99						
1994	99						
1995	98						
1996	98						
1997	98						
1998	98						
1999	98					98	98
2000	98	94	94	94	94		
2001	98	82	82	82	82		
2002	98	99	99	99	99		
2003	98	101	101	101	101		
2004	98	98	98	98	98		
2005	98	141	141	141	141		
2006	98	131	131	131	131	98	
2007	98	104	104	104	104		
2008	99	109	109	109	102		

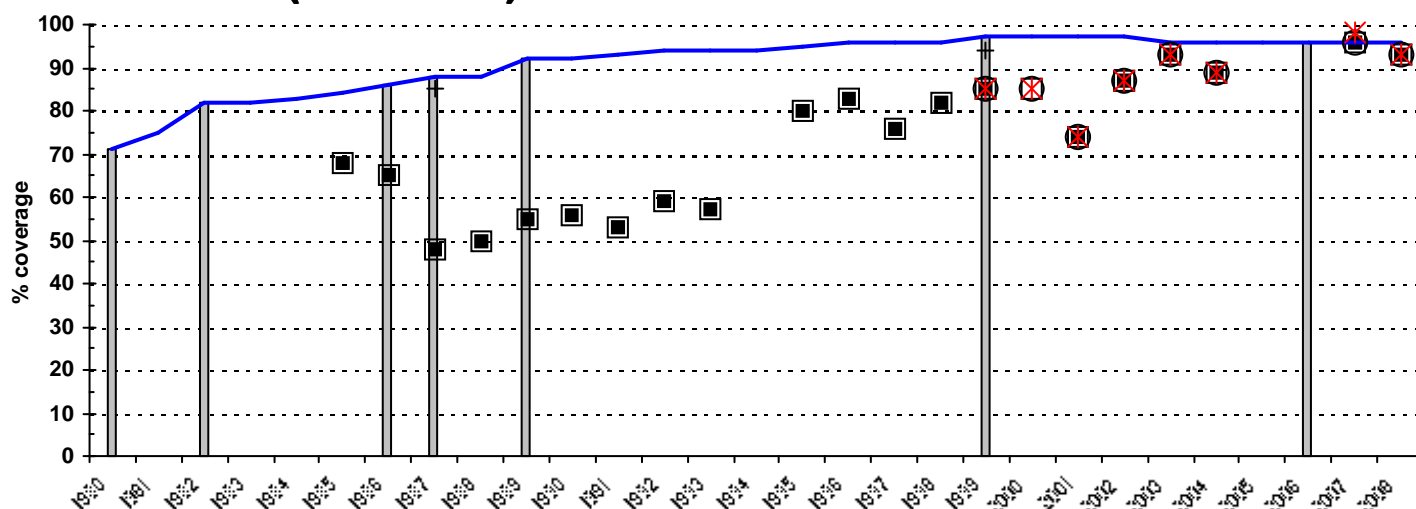
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

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Botswana

DTP3 (1980-2008)



Description of trend

Estimates are based on survey 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	71					71	
1981	75						
1982	82					82	
1983	82						
1984	83						
1985	84	68	68				
1986	86	65	65			86	
1987	88	48	48			88	85
1988	88	50	50				
1989	92	55	55			92	
1990	92	56	56				
1991	93	53	53				
1992	94	59	59				
1993	94	57	57				
1994	94						
1995	95	80	80				
1996	96	83	83				
1997	96	76	76				
1998	96	82	82				
1999	97	85	85	85	85	97	94
2000	97	85	85	85	85		
2001	97	74	74	74	74		
2002	97	87	87	87	87		
2003	96	93	93	93	93		
2004	96	89	89	89	89		
2005	96	137	137	137	130		
2006	96	150	150	150	150	96	
2007	96	96	96	96	98		
2008	96	93	93	93	93		

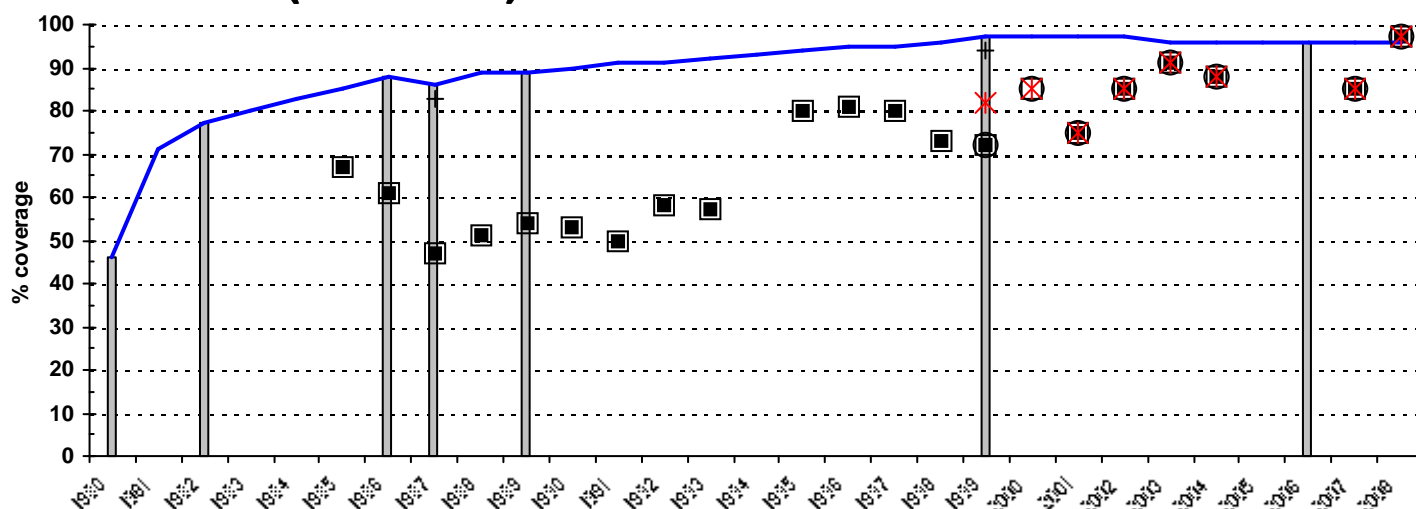
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

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

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Botswana

Pol3 (1980-2008)



Description of trend

Estimates are based on survey 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	46					46	
1981	71						
1982	77					77	
1983	80						
1984	83						
1985	85	67	67				
1986	88	61	61			88	
1987	86	47	47			86	83
1988	89	51	51				
1989	89	54	54			89	
1990	90	53	53				
1991	91	50	50				
1992	91	58	58				
1993	92	57	57				
1994	93						
1995	94	80	80				
1996	95	81	81				
1997	95	80	80				
1998	96	73	73				
1999	97	72	72	72	82	97	94
2000	97	85		85	85		
2001	97	75	75	75	75		
2002	97	85	85	85	85		
2003	96	91	91	91	91		
2004	96	88	88	88	88		
2005	96	123	123	123	123		
2006	96	125	125	125	125	96	
2007	96	85	85	85	85		
2008	96	97	97	97	97		

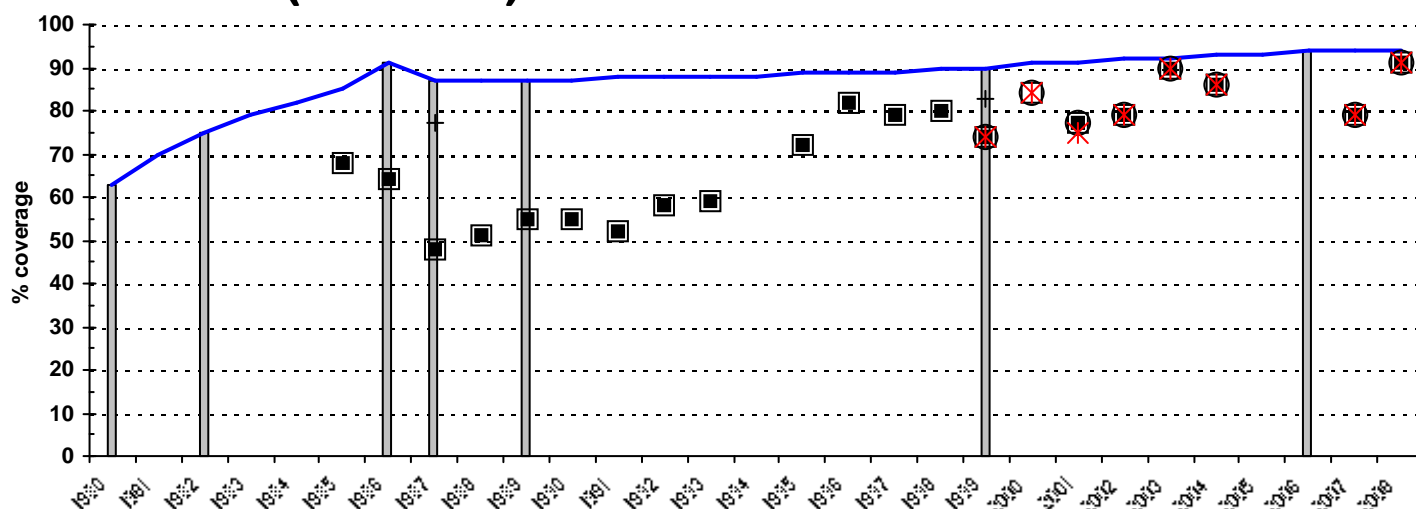
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

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

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Botswana

MCV (1980-2008)



Description of trend

Estimates are based on survey 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	63					63	
1981	70						
1982	75					75	
1983	79						
1984	82						
1985	85	68	68				
1986	91	64	64			91	
1987	87	48	48			87	77
1988	87	51	51				
1989	87	55	55			87	
1990	87	55	55				
1991	88	52	52				
1992	88	58	58				
1993	88	59	59				
1994	88						
1995	89	72	72				
1996	89	82	82				
1997	89	79	79				
1998	90	80	80				
1999	90	74	74	74	74	90	83
2000	91	84		84	84		
2001	91	77	77	77	75		
2002	92	79	79	79	79		
2003	92	90	90	90	90		
2004	93	86	86	86	86		
2005	93	113	113	113	113		
2006	94	121	121	121	121	94	
2007	94	79	79	79	79		
2008	94	91	91	91	91		

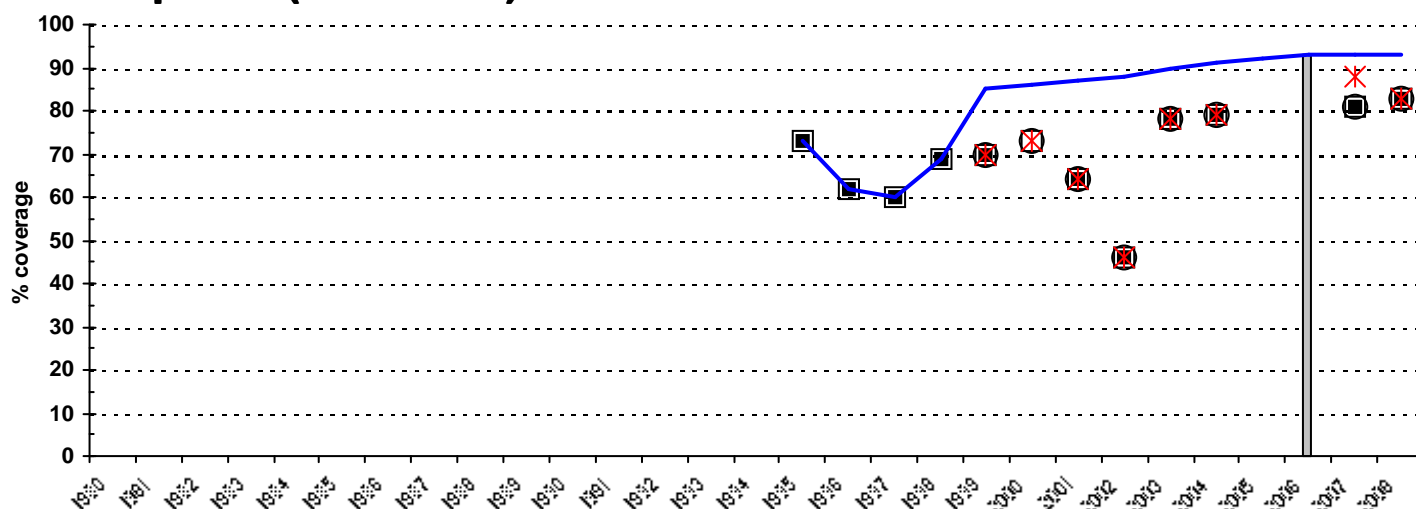
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Botswana

HepB3 (1980-2008)



Description of trend

Hepatitis B vaccine was introduced in 1994. Estimates from 1995-1998 are based on nationally reported data. The 1999 estimate is based on the 1999 MICS measles coverage estimate adjusted for the difference between measles and HepB coverage levels (the third of HepB vaccine recommended at 9 months of age in Botswana). Estimates from 2000 are interpolated between the 1999 estimate and the 2006 survey result.

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	73	73	73				
1996	62	62	62				
1997	60	60	60				
1998	69	69	69				
1999	85	70	70	70	70		
2000	86	73		73	73		
2001	87	64	64	64	64		
2002	88	46	46	46	46		
2003	90	78	78	78	78		
2004	91	79	79	79	79		
2005	92	108	108	108	108		
2006	93	107	107	107	107	93	
2007	93	81	81	81	88		
2008	93	83	83	83	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.

Botswana

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
2006 Botswana EPI Coverage Survey 2007								
BCG	Card or History	98.9	Crude	12-23 m	9083	98.2	2007	
DTP1	Card or History	97.5	Crude	12-23 m	9083	98.2	2007	
DTP3	Card or History	95.9	Crude	12-23 m	9083	98.2	2007	
Pol3	Card or History	96.3	Crude	12-23 m	9083	98.2	2007	
MCV	Card or History	93.7	Crude	12-23 m	9083	98.2	2007	
HepB	Card or History	93.1	Crude	12-23 m	9083	98.2	2007	

1999 Botswana Multiple Indicator Cluster Survey 2000, 2001

BCG	History	12		12-23 m	618	83.5	2000	
BCG	Card or History	98.9		12-23 m	618	83.5	2000	
BCG	Card	86.9		12-23 m	618	83.5	2000	
BCG	C or H <12 month	98.9		12-23 m	618	83.5	2000	
DTP1	History	12		12-23 m	618	83.5	2000	
DTP1	Card or History	98.5		12-23 m	618	83.5	2000	
DTP1	Card	86.5		12-23 m	618	83.5	2000	
DTP1	C or H <12 month	97.5		12-23 m	618	83.5	2000	
DTP3	History	12		12-23 m	618	83.5	2000	
DTP3	Card or History	96.9		12-23 m	618	83.5	2000	
DTP3	Card	84.9		12-23 m	618	83.5	2000	
DTP3	C or H <12 month	94.3		12-23 m	618	83.5	2000	
Pol3	History	12		12-23 m	618	83.5	2000	Survey only quotes Pol0-Pol2. Pol0 is therefore considered first dose, Pol2 third dose
Pol3	Card or History	96.6		12-23 m	618	83.5	2000	Survey only quotes Pol0-Pol2. Pol0 is therefore considered first dose, Pol2 third dose
Pol3	Card	84.6		12-23 m	618	83.5	2000	Survey only quotes Pol0-Pol2. Pol0 is therefore considered first dose, Pol2 third dose
Pol3	C or H <12 month	93.8		12-23 m	618	83.5	2000	Survey only quotes Pol0-Pol2. Pol0 is therefore considered first dose, Pol2 third dose
MCV	History	12		12-23 m	618	83.5	2000	
MCV	Card or History	89.6		12-23 m	618	83.5	2000	
MCV	Card	77.6		12-23 m	618	83.5	2000	
MCV	C or H <12 month	83.4		12-23 m	618	83.5	2000	
PAB	Card or History	72.4		Women 15-49			2000	

1989 The Botswana EPI Evaluation 1990

BCG	Card or History	92		12-23 m	215	96	1990	
DTP1	Card or History	100		12-23 m	215	96	1990	
DTP3	Card or History	92		12-23 m	215	96	1990	
Pol3	Card or History	89		12-23 m	215	96	1990	
MCV	Card or History	87		12-23 m	215	96	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	95		12-23 m	614	74.2	1988	Recalculated
BCG	C or H <12 month	95		12-23 m	614	74.2	1988	
DTP1	Card or History	93		12-23 m	614	74.2	1988	Recalculated
DTP1	C or H <12 month			12-23 m	614	74.2	1988	
DTP3	Card or History	88		12-23 m	614	74.2	1988	Recalculated
DTP3	C or H <12 month	85		12-23 m	614	74.2	1988	
Pol3	Card or History	86		12-23 m	614	74.2	1988	Recalculated
Pol3	C or H <12 month	83		12-23 m	614	74.2	1988	
MCV	Card or History	87		12-23 m	614	74.2	1988	Recalculated

Botswana

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	77		12-23 m	614	74.2	1988	

1986 Botswana EPI Evaluation 1987

BCG	Card or History	99		12-23 m	425	98	1987	Confirmation method also includes Scar
DTP1	Card or History	98		12-23 m	425	98	1987	
DTP3	Card or History	86		12-23 m	425	98	1987	
Pol3	Card or History	88		12-23 m	425	98	1987	
MCV	Card or History	91		12-23 m	425	98	1987	

1982 Botswana EPI Evaluation 1987

BCG	Card or History	94		12-23 m	213	99	1983	
DTP1	Card or History	97		12-23 m	213	99	1983	
DTP3	Card or History	82		12-23 m	213	99	1983	
Pol3	Card or History	77		12-23 m	213	99	1983	
MCV	Card or History	75		12-23 m	213	99	1983	

1980 Botswana EPI Evaluation 1987

BCG	Card or History	92		12-23 m			1980	
DTP1	Card or History	89		12-23 m			1980	
DTP3	Card or History	71		12-23 m			1980	
Pol3	Card or History	46		12-23 m			1980	
MCV	Card or History	63		12-23 m			1980	

Botswana

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.

Botswana

Year	PAB coverage estimate (%)
1980	
1981	29
1982	27
1983	36
1984	41
1985	39
1986	43
1987	50
1988	54
1989	58
1990	59
1991	59
1992	62
1993	63
1994	91
1995	72
1996	75
1997	69
1998	72
1999	80
2000	80
2001	81
2002	82
2003	82
2004	83
2005	83
2006	84
2007	84
2008	85