

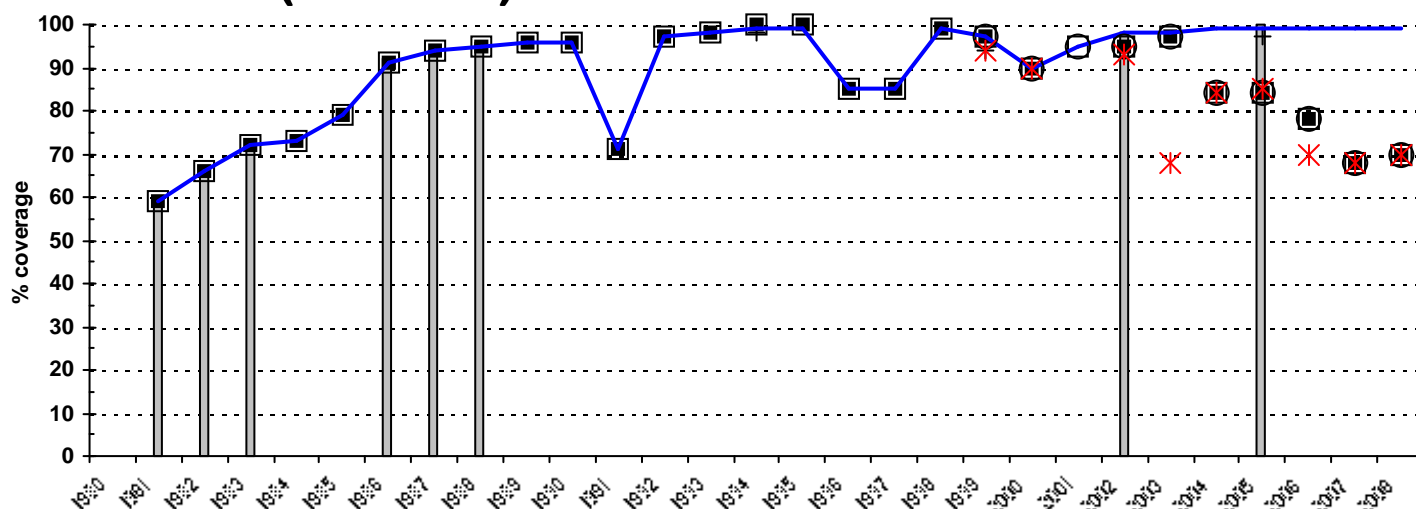
**WHO/UNICEF
Review of National Immunization Coverage
1980-2008**

Swaziland

July, 2009

Swaziland

BCG (1980-2008)



Description of trend

Estimated immunization coverage levels are based on reported data, supported by survey results. In 1991 reported data suggests a drop to possibly a post-UCI effect. The officially reported drop in 1995 and 1996 to 85% is likely associated with a problem with the denominator. The 2003 national report is based on the 2003 National Review with a sample size of only 200 children. The 2003 estimate is derived from interpolation between 2002 and the 2005 survey data point. Swaziland increased its denominator in 2005 leading the decline in reported data following 2004. Estimates from 2005 onward are based on EPI 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							
1981	59	59	59			59	
1982	66	66	66			66	
1983	72	72	72			72	
1984	73	73	73				
1985	79	79	79				
1986	91	91	91			92	
1987	94	94	94			94	
1988	95	95	95			96	
1989	96	96	96				
1990	96	96	96				
1991	71	71	71				
1992	97	97	97				
1993	98	98	98				
1994	99	100	100				98
1995	85	85	85				
1996	85	85	85				
1997	85	85	85				
1998	99	99	99				
1999	97	97	97	97	94		94
2000	90	90	90	90	90		
2001	95	95	95	95	90		
2002	98	95	95	95	93	98	
2003	98	97	97	97	68		
2004	99	84	84	84	84		
2005	99	84	84	84	85	100	97
2006	99	78	78	78	70		
2007	99	68	68	68	68		
2008	99	70	70	70	70		

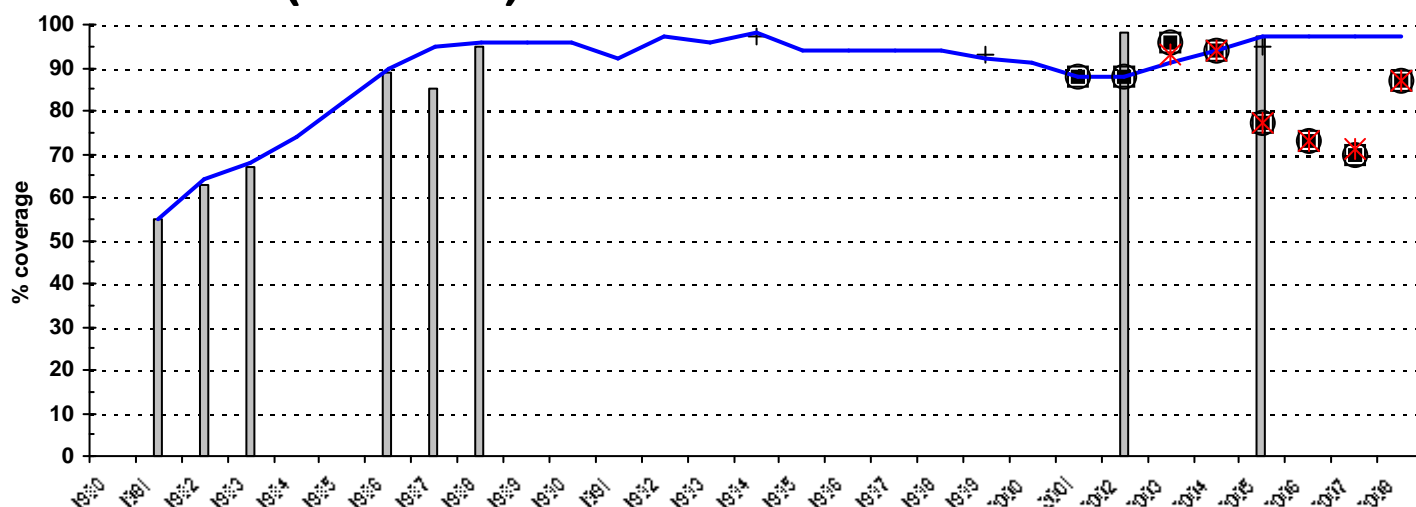
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Swaziland

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 200 onward. The estimate for DTP1 from 2001 onward are based on these data. Estimates for other years 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. Swaziland increased its denominator in 2005 leading the decline in reported data following 2004. Estimates from 2005 onward are based on EPI 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							
1981	55					55	
1982	64					63	
1983	68					67	
1984	74						
1985	82						
1986	90					89	
1987	95					85	
1988	96					95	
1989	96						
1990	96						
1991	92						
1992	97						
1993	96						
1994	98						97
1995	94						
1996	94						
1997	94						
1998	94						
1999	92						93
2000	91	111	111	111	111		
2001	88	88	88	88			
2002	88	88	88	88	107	98	
2003	91	96	96	96	93		
2004	94	94	94	94	94		
2005	97	77	77	77	77	97	95
2006	97	73	73	73	73		
2007	97	70	70	70	71		
2008	97	87	87	87	87		

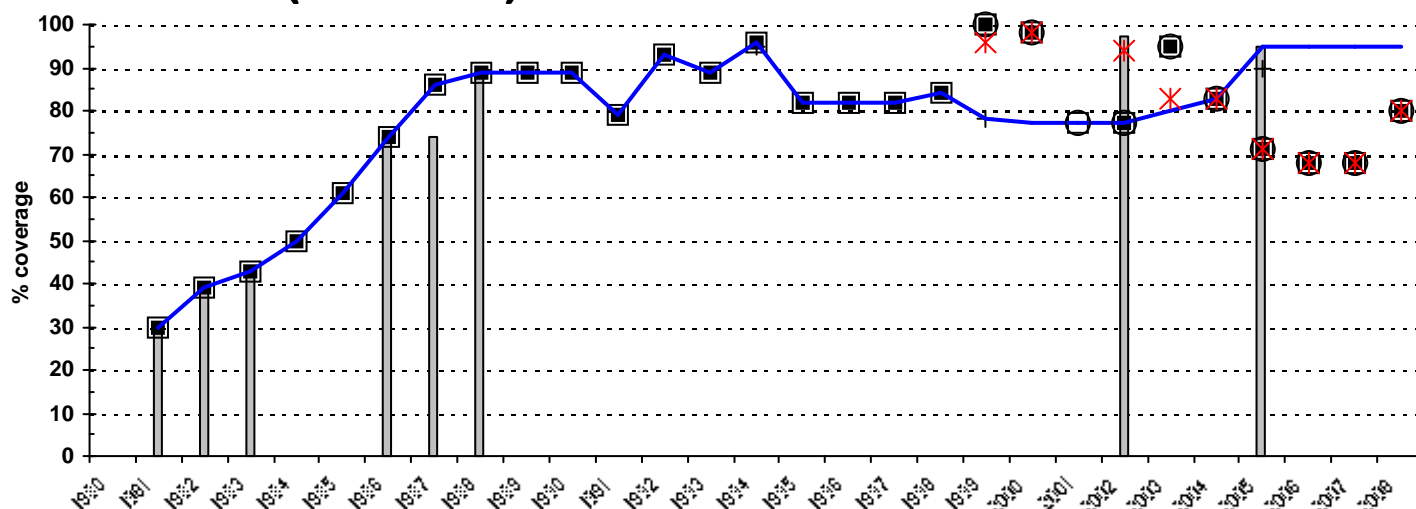
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Swaziland

DTP3 (1980-2008)



Description of trend

Estimated immunization coverage levels are based on reported data, supported by survey results. In 1991 reported data suggest a drop, possibly a post-UCI effect. The officially reported drop in 1995 and 1996 might be due to a denominator problem. The 2003 national report is based on the 2003 National Review with a sample size of only 200 children. The 2003 estimate is derived from interpolation between 2002 and 2004 national reports. Swaziland increased its denominator in 2005 leading to the decline in reported data following 2004. Estimates from 2005 onward are based on EPI 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							
1981	30	30	30			30	
1982	39	39	39			39	
1983	43	43	43			43	
1984	50	50	50				
1985	61	61	61				
1986	74	74	74			74	
1987	86	86	86			74	
1988	89	89	89			89	
1989	89	89	89				
1990	89	89	89				
1991	79	79	79				
1992	93	93	93				
1993	89	89	89				
1994	96	96	96				95
1995	82	82	82				
1996	82	82	82				
1997	82	82	82				
1998	84	84	84				
1999	78	100	100	100	96		78
2000	77	98	98	98	98		
2001	77	77	77	77			
2002	77	77	77	77	94	97	
2003	80	95	95	95	83		
2004	83	83	83	83	83		
2005	95	71	71	71	71	95	90
2006	95	68	68	68	68		
2007	95	68	68	68	68		
2008	95	80	80	80	80		

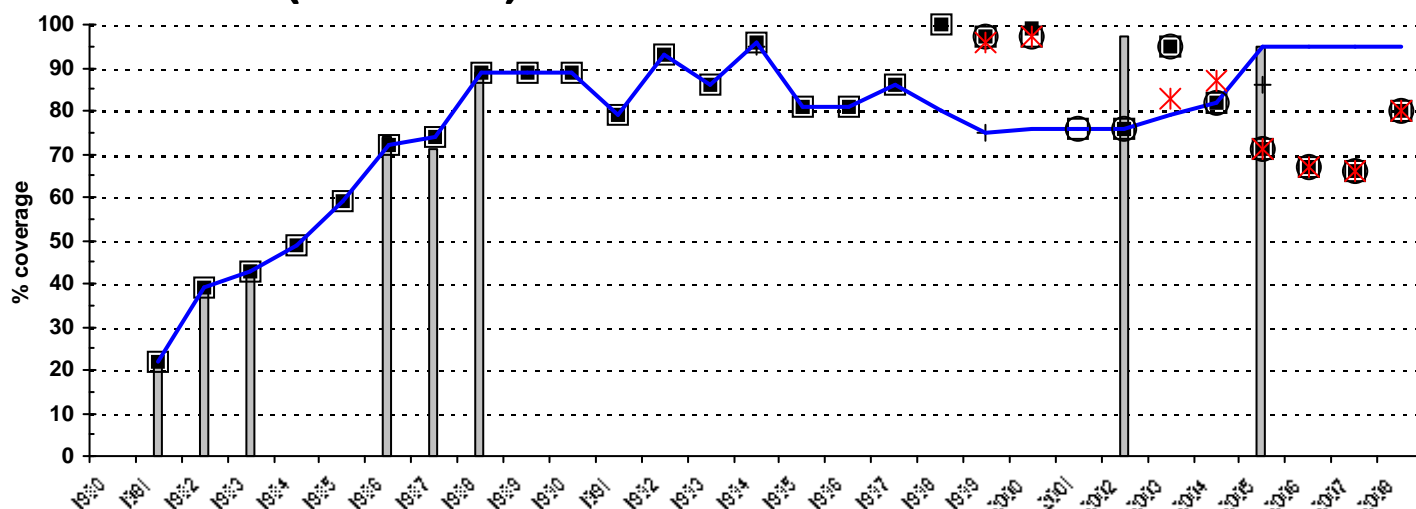
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Swaziland

Pol3 (1980-2008)



Description of trend

Estimated immunization coverage levels are based on reported data, supported by survey results. In 1991 reported data suggest a drop, post-UCI effect. The officially reported drop in 1995 and 1996 might be due to a denominator problem. The 2003 national report is based on 2003 National Review with a sample size of only 200 children. The 2003 estimate is derived from interpolation between 2002 and 2004 nation report. Swaziland increased their denominator in 2005 leading the decline in reported data following 2004. Estimates from 2005 onward are b EPI survey data. Note that 2005 DHS survey result is 87%.

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	22	22	22			22	
1982	39	39	39			39	
1983	43	43	43			43	
1984	49	49	49				
1985	59	59	59				
1986	72	72	72			74	
1987	74	74	74			71	
1988	89	89	89			89	
1989	89	89	89				
1990	89	89	89				
1991	79	79	79				
1992	93	93	93				
1993	86	86	86				
1994	96	96	96				95
1995	81	81	81				
1996	81	81	81				
1997	86	86	86				
1998	80	100	100				
1999	75	97	97	97	96		75
2000	76	97	99	97	97		
2001	76	76		76			
2002	76	76	76	76	109	97	
2003	79	95	95	95	83		
2004	82	82	82	82	87		
2005	95	71	71	71	71	95	86
2006	95	67	67	67	67		
2007	95	66	66	66	66		
2008	95	80	80	80	80		

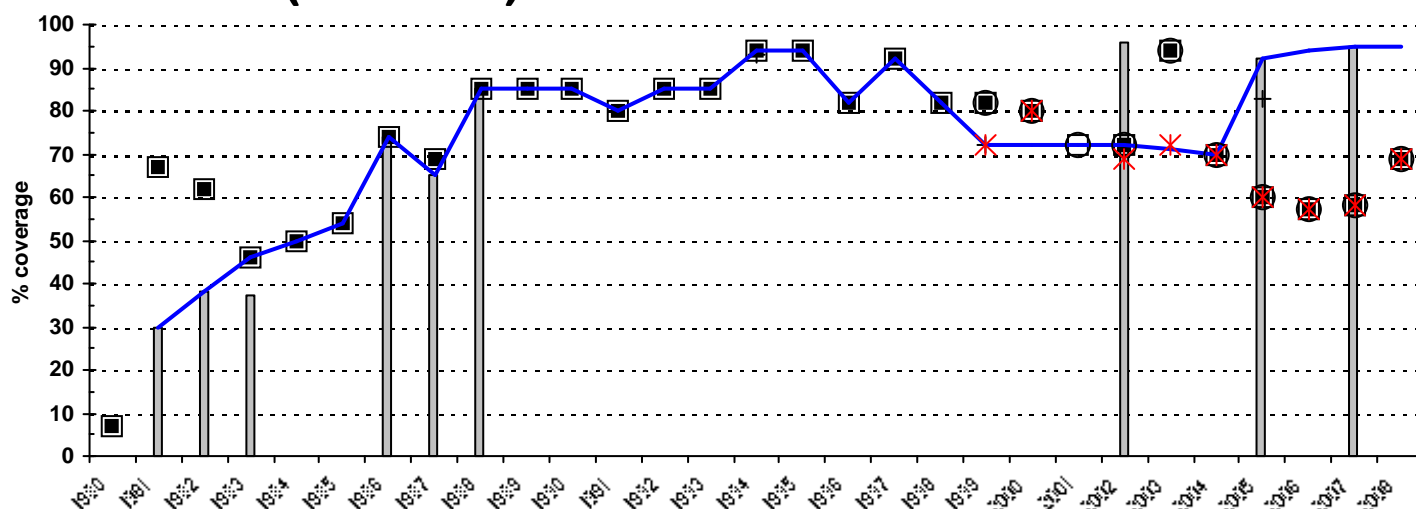
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Swaziland

MCV (1980-2008)



Description of trend

Estimated immunization coverage levels are based on reported data, supported by survey results. In 1991 reported data suggest a drop, pos a post-UCI effect. The officially reported drop in 1995 and 1996 might be due to a denominator problem. The 2003 national report is based the 2003 National Review with a sample size of only 200 children. The 2003 estimate is derived from interpolation between 2002 and 2004 national report. Swaziland increased their denominator in 2005 leading the decline in reported data following 2004. Estimates from 2005 onw are based on EPI 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		7	7				
1981	30	67	67			30	
1982	38	62	62			38	
1983	46	46	46			37	
1984	50	50	50				
1985	54	54	54				
1986	74	74	74			74	
1987	65	69	69			65	
1988	85	85	85			85	
1989	85	85	85				
1990	85	85	85				
1991	80	80	80				
1992	85	85	85				
1993	85	85	85				
1994	94	94	94				93
1995	94	94	94				
1996	82	82	82				
1997	92	92	92				
1998	82	82	82				
1999	72	82	82	82	72		72
2000	72	80	80	80	80		
2001	72	72	72	72			
2002	72	72	72	72	69	96	
2003	71	94	94	94	72		
2004	70	70	70	70	70		
2005	92	60	60	60	60	92	83
2006	94	57	57	57	57		
2007	95	58	58	58	58	95	
2008	95	69	69	69	69		

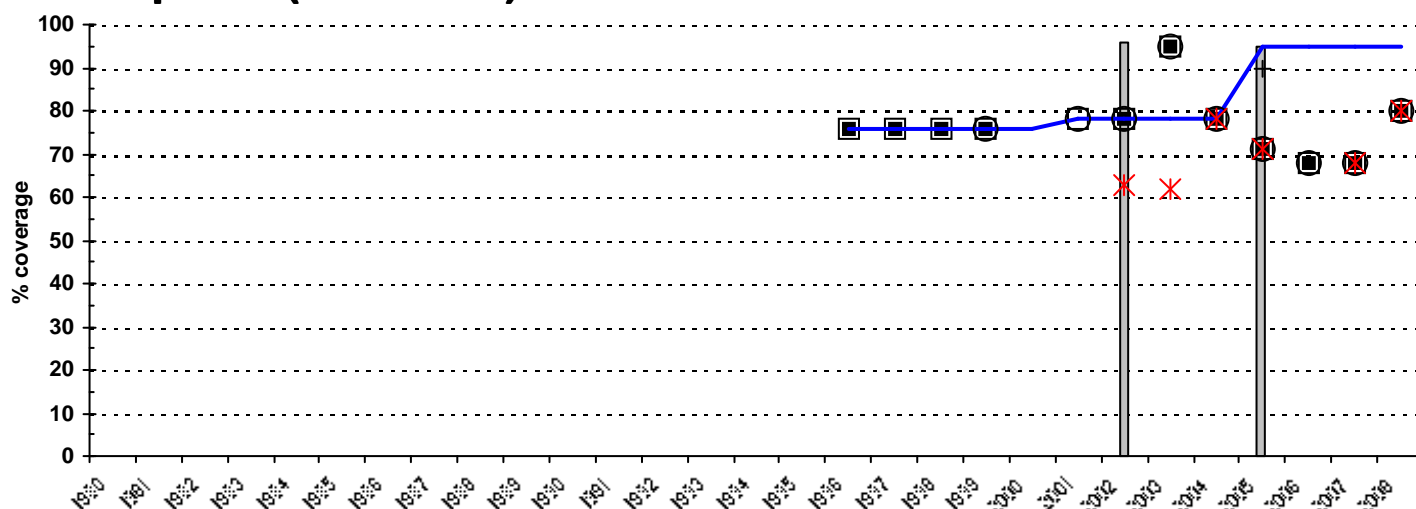
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Swaziland

HepB3 (1980-2008)



Description of trend

Hepatitis B vaccine was introduced in 1996. Estimated immunization coverage levels are based on reported data. The 2003 national report is based on the 2003 National Review with a sample size of only 200 children. The 2003 estimate is derived from interpolation between 2002 and 2004 national report. Swaziland increased its denominator in 2005 leading the decline in reported data following 2004. Estimates from 2005 onward are based on EPI 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							
1981							
1982							
1983							
1984							
1985							
1986							
1987							
1988							
1989							
1990							
1991							
1992							
1993							
1994							
1995							
1996	76	76	76				
1997	76	76	76				
1998	76	76	76				
1999	76	76	76	76			
2000	76						
2001	78	78		78			
2002	78	78	78	78	63	96	
2003	78	95	95	95	62		
2004	78	78	78	78	78		
2005	95	71	71	71	71	95	90
2006	95	68	68	68			
2007	95	68	68	68	68		
2008	95	80	80	80	80		

*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.

Swaziland

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
2007 Swaziland 2008 National Nutrition Survey								
MCV	Card or History	94.7		12-23 m	754		2008	
2005 Swaziland Demographic and Health Survey 2006-07								
BCG	Card or History	97.2		12-23 m	531	84.1	2006/2007	
BCG	C or H <12 month	97		12-23 m	531	84.1	2006/2007	
DTP1	Card or History	96		12-23 m	531	84.1	2006/2007	
DTP1	C or H <12 month	95.4		12-23 m	531	84.1	2006/2007	
DTP3	Card or History	91.7		12-23 m	531	84.1	2006/2007	
DTP3	C or H <12 month	90.2		12-23 m	531	84.1	2006/2007	
Pol3	Card or History	87.3		12-23 m	531	84.1	2006/2007	
Pol3	C or H <12 month	85.9		12-23 m	531	84.1	2006/2007	
MCV	Card or History	91.5		12-23 m	531	84.1	2006/2007	
MCV	C or H <12 month	82.7		12-23 m	531	84.1	2006/2007	
HepB	Card or History	91.1		12-23 m	531	84.1	2006/2007	
HepB	C or H <12 month	89.6		12-23 m	531	84.1	2006/2007	
PAB	n.a.	74.9		CBAW	2134		2006/2007	
2005 Swaziland measles post campaigning evaluation and EPI coverage survey reports, July 2006								
BCG	Card or History	99.7	Crude	12-23 m	581	79.3	2006	
DTP1	Card or History	97.4	Crude	12-23 m	581	79.3	2006	
DTP3	Card or History	95.2	Crude	12-23 m	581	79.3	2006	
Pol3	Card or History	95.2	Crude	12-23 m	581	79.3	2006	
MCV	Card or History	91.2	Crude	12-23 m	581	79.3	2006	
HepB	Card or History	95.2	Crude	12-23 m	581	79.3	2006	
2002 Swaziland, Report on National EPI Review, 2003								
BCG	Card or History	97.6		12-23 m	209	93.7	2003	
DTP1	Card or History	98.1		12-23 m	209	93.7	2003	
DTP3	Card or History	97.1		12-23 m	209	93.7	2003	
Pol3	Card or History	97.1		12-23 m	209	93.7	2003	
MCV	Card or History	95.6		12-23 m	209	93.7	2003	
HepB	Card or History	95.6		12-23 m	209	93.7	2003	
1999 Swaziland Multiple Indicator Cluster Survey 2000, 2002								
BCG	C or H <12 month	94.1		12-23 m		86	1999	
DTP1	C or H <12 month	92.6		12-23 m		86	1999	
DTP3	C or H <12 month	77.7		12-23 m		86	1999	
Pol3	C or H <12 month	75.1		12-23 m		86	1999	
MCV	C or H <12 month	72.3		12-23 m		86	1999	
PAB	C or H <12 month	79.8		Women 15-49			1999	Births last five years
1994 Household Survey of Immunization, Diarrhoea, Breastfeeding, Acute Respiratory Infection, Water and Sanitation, 1995								
BCG	C or H <12 month	98.3		12-23 m	828	93.7	1995	
DTP1	C or H <12 month	96.6		12-23 m	828	93.7	1995	
DTP3	C or H <12 month	94.6		12-23 m	828	93.7	1995	
Pol3	C or H <12 month	94.7		12-23 m	828	93.7	1995	
MCV	C or H <12 month	92.7		12-23 m	828	93.7	1995	

Swaziland

Details Survey Data

Year	Source	Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
1994	Mid-Decade Goal Assessment of the Status of TT Immunization, and Knowledge and Practices for Vitamin A (Reassessment of ORT in Diarrhoea, and Breastfeeding), 1995									
		PAB	Card or History	85		Women 15-49			1995	Last pregnancy
1988	Unicef External Evaluation of Swaziland Expanded Programme on Immunization, 1989, Preliminary data									
		BCG	Card or History	96		12-23 m			1989	
		DTP1	Card or History	95		12-23 m			1989	
		DTP3	Card or History	89		12-23 m			1989	
		Pol3	Card or History	89		12-23 m			1989	
		MCV	Card or History	85		12-23 m			1989	
1987	Unicef External Evaluation of Swaziland Expanded Programme on Immunization, 1989									
		BCG	Card or History	94		12-23 m			1988	
		DTP1	Card or History	85		12-23 m			1988	
		DTP3	Card or History	74		12-23 m			1988	
		Pol3	Card or History	71		12-23 m			1988	
		MCV	Card or History	65		12-23 m			1988	
1986	Unicef External Evaluation of Swaziland Expanded Programme on Immunization, 1989									
		BCG	Card or History	92		12-23 m			1987	
		DTP1	Card or History	89		12-23 m			1987	
		DTP3	Card or History	74		12-23 m			1987	
		Pol3	Card or History	74		12-23 m			1987	
		MCV	Card or History	74		12-23 m			1987	
1983	Unicef External Evaluation of Swaziland Expanded Programme on Immunization, 1989									
		BCG	Card or History	72		12-23 m			1984	
		DTP1	Card or History	67		12-23 m			1984	
		DTP3	Card or History	43		12-23 m			1984	
		Pol3	Card or History	43		12-23 m			1984	
		MCV	Card or History	37		12-23 m			1984	
1982	Unicef External Evaluation of Swaziland Expanded Programme on Immunization, 1989									
		BCG	Card or History	66		12-23 m			1983	
		DTP1	Card or History	63		12-23 m			1983	
		DTP3	Card or History	39		12-23 m			1983	
		Pol3	Card or History	39		12-23 m			1983	
		MCV	Card or History	38		12-23 m			1983	
1981	Unicef External Evaluation of Swaziland Expanded Programme on Immunization, 1989									
		BCG	Card or History	59		12-23 m			1982	
		DTP1	Card or History	55		12-23 m			1982	
		DTP3	Card or History	30		12-23 m			1982	
		Pol3	Card or History	22		12-23 m			1982	
		MCV	Card or History	30		12-23 m			1982	

Swaziland

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.

Swaziland

Year	PAB coverage estimate (%)
1980	
1981	
1982	
1983	
1984	
1985	
1986	
1987	
1988	
1989	63
1990	63
1991	84
1992	80
1993	80
1994	79
1995	77
1996	76
1997	80
1998	79
1999	79
2000	80
2001	80
2002	81
2003	81
2004	82
2005	82
2006	85
2007	85
2008	86