

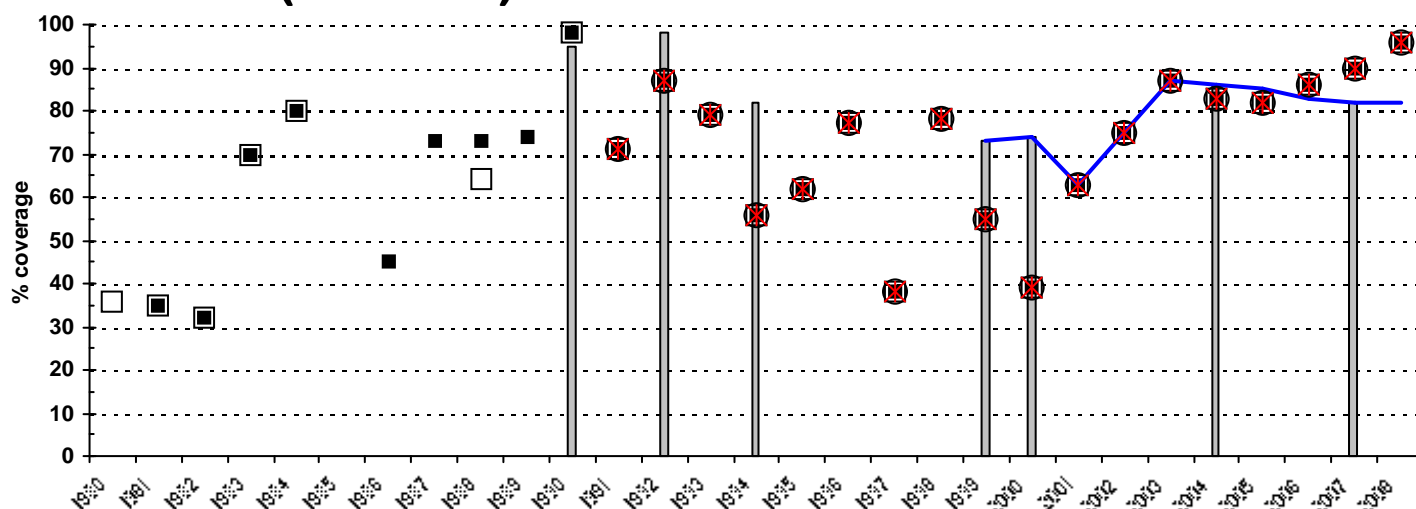
**WHO/UNICEF
Review of National Immunization Coverage
1980-2008**

Sierra Leone

July, 2009

Sierra Leone

BCG (1980-2008)



Description of trend

Because of insufficient administrative and survey data during the 1980s and 1990s it is not possible to estimate a trend in coverage. The unavailability of data can be attributed to the unstable situation in the country. Survey data for 1995 (MICS) covers only part of the country. The 1999 rate as reported in the WHO/UNICEF Joint Reporting Form is not considered since only nine out of fourteen districts reported. 1999 and 2000 estimates are based on survey data (MICS 2000 and 2001 EPI Cluster Survey), subsequent estimates were based on the government's official estimate. Reported data for 2006 reject progress in immunization as well as significant differences in target populations based on the census. As census results appear uncertain we have retained the 2005 estimate.

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		36					
1981		35	35				
1982		32	32				
1983		70	70				
1984		80	80				
1985							
1986			45				
1987			73				
1988		64	73				
1989			74				
1990		98	98			95	
1991		71	71	71	71		
1992		87	87	87	87	98	
1993		79	79	79	79		
1994		56	56	56	56	82	
1995		62	62	62	62		
1996		77	77	77	77		
1997		38	38	38	38		
1998		78	78	78	78		
1999	73	55	55	55	55	73	
2000	74	39	39	39	39	74	
2001	63	63	63	63	63		
2002	75	75	75	75	75		
2003	87	87	87	87	87		
2004	86	83	83	83	83	86	84
2005	85	82	82	82	82		
2006	83	86	86	86	86		
2007	82	90	90	90	90	82	
2008	82	96	96	96	96		

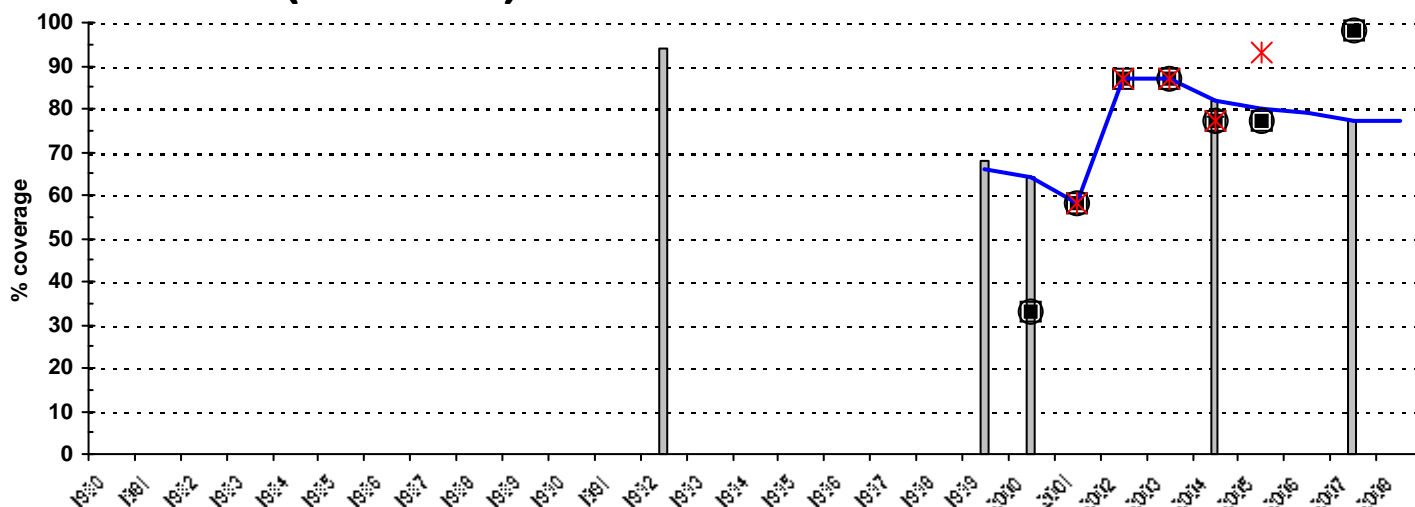
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Sierra Leone

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 1999-2000 are based on survey data. Estimates from 2000 are based on reported data. Reported data for 2006 reject progress in immunization as well as significant differences in target populations based on the 2004 census. As census results appear uncertain we have retained the 2005 estimate and recommend a high quality survey to confirm current coverage levels.

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						94	
1993							
1994							
1995							
1996							
1997							
1998							
1999	66					68	
2000	64	33	33	33		64	
2001	58	58	58	58	58		
2002	87	87	87		87		
2003	87	87	87	87	87		
2004	82	77	77	77	77	82	78
2005	80	77	77	77	93		
2006	79	101	101	101	101		
2007	77	98	98	98		77	
2008	77	105	105	105	105		

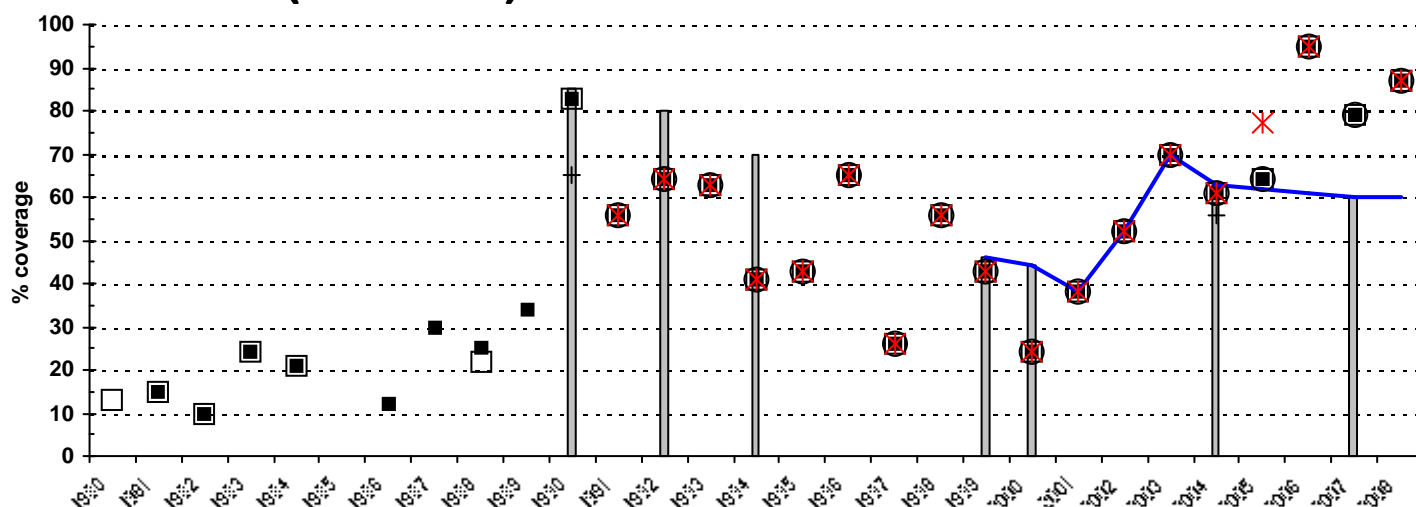
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

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

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Sierra Leone

DTP3 (1980-2008)



Description of trend

Because of insufficient administrative and survey data during the 1980s and 1990s it is not possible to estimate a trend in coverage. The unavailability of data can be attributed to the unstable situation in the country. Survey data for 1995 (MICS) covers only part of the country. The 1999 rate as reported in the WHO/UNICEF Joint Reporting Form is not considered since only nine out of fourteen districts reported. 1999 and 2000 estimates are based on survey data (MICS 2000 and 2001 EPI Cluster Survey), subsequent estimates are based on the government's official estimate. Reported data for 2006 reject progress in immunization as well as significant differences in target populations based on the census. As census results appear uncertain we have retained the 2005 estimate.

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		13					
1981		15	15				
1982		10	10				
1983		24	24				
1984		21	21				
1985							
1986			12				
1987			30				
1988		22	25				
1989			34				
1990		83	83			85	65
1991		56	56	56	56		
1992		64	64	64	64	80	
1993		63	63	63	63		
1994		41	41	41	41	70	
1995		43	43	43	43		
1996		65	65	65	65		
1997		26	26	26	26		
1998		56	56	56	56		
1999	46	43	43	43	43	46	
2000	44	24	24	24	24	44	
2001	38	38	38	38	38		
2002	52	52	52	52	52		
2003	70	70	70	70	70		
2004	63	61	61	61	61	63	56
2005	62	64	64	64	77		
2006	61	95	95	95	95		
2007	60	79	79	79		60	
2008	60	87	87	87	87		

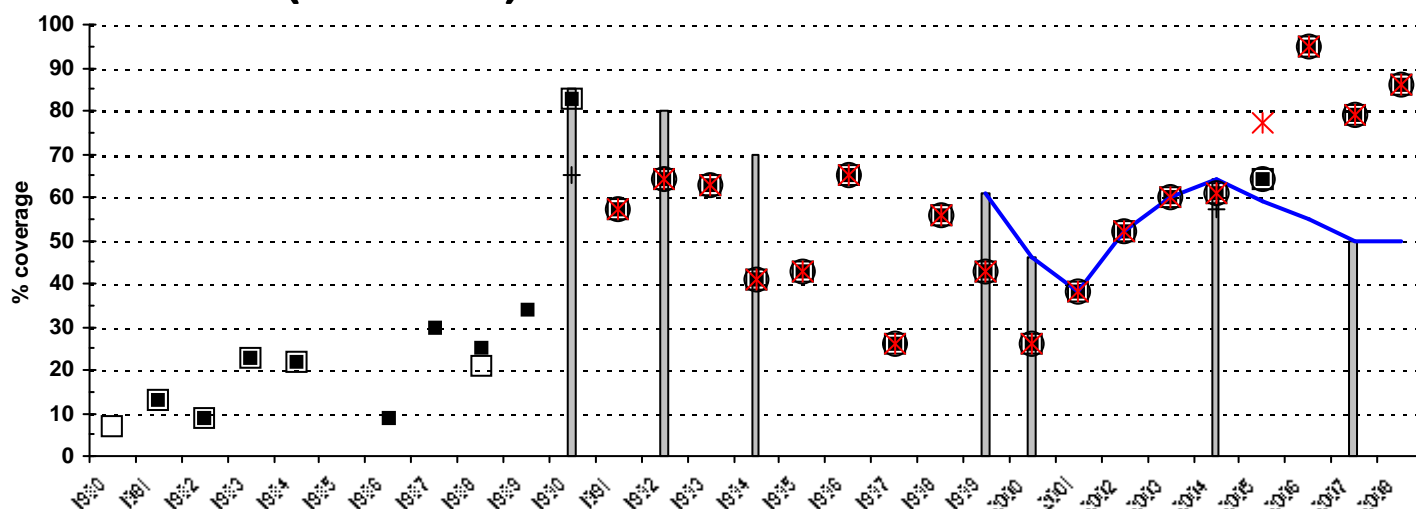
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Sierra Leone

Pol3 (1980-2008)



Description of trend

Because of insufficient administrative and survey data during the 1980s and 1990s it is not possible to estimate a trend in coverage. The unavailability of data can be attributed to the unstable situation in the country. Survey data for 1995 (MICS) cover only part of the country. The rate as reported in the WHO/UNICEF Joint Reporting Form is not considered since only nine out of fourteen districts reported. 1999 and 2000 estimates are based on survey data (MICS 2000 and 2001 EPI Cluster Survey), subsequent estimates are based on the government's official estimate. Reported data for 2006 reject progress in immunization as well as significant differences in target populations based on the 2004 cc As census results appear uncertain we have retained the 2005 estimate.

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					
1981		13	13				
1982		9	9				
1983		23	23				
1984		22	22				
1985							
1986			9				
1987			30				
1988		21	25				
1989			34				
1990		83	83			85	65
1991		57	57	57	57		
1992		64	64	64	64	80	
1993		63	63	63	63		
1994		41	41	41	41	70	
1995		43	43	43	43		
1996		65	65	65	65		
1997		26	26	26	26		
1998		56	56	56	56		
1999	61	43	43	43	43	61	
2000	46	26	26	26	26	46	
2001	38	38	38	38	38		
2002	52	52	52	52	52		
2003	60	60	60	60	60		
2004	64	61	61	61	61	64	57
2005	59	64	64	64	77		
2006	55	95	95	95	95		
2007	50	79	79	79	79	50	
2008	50	86	86	86	86		

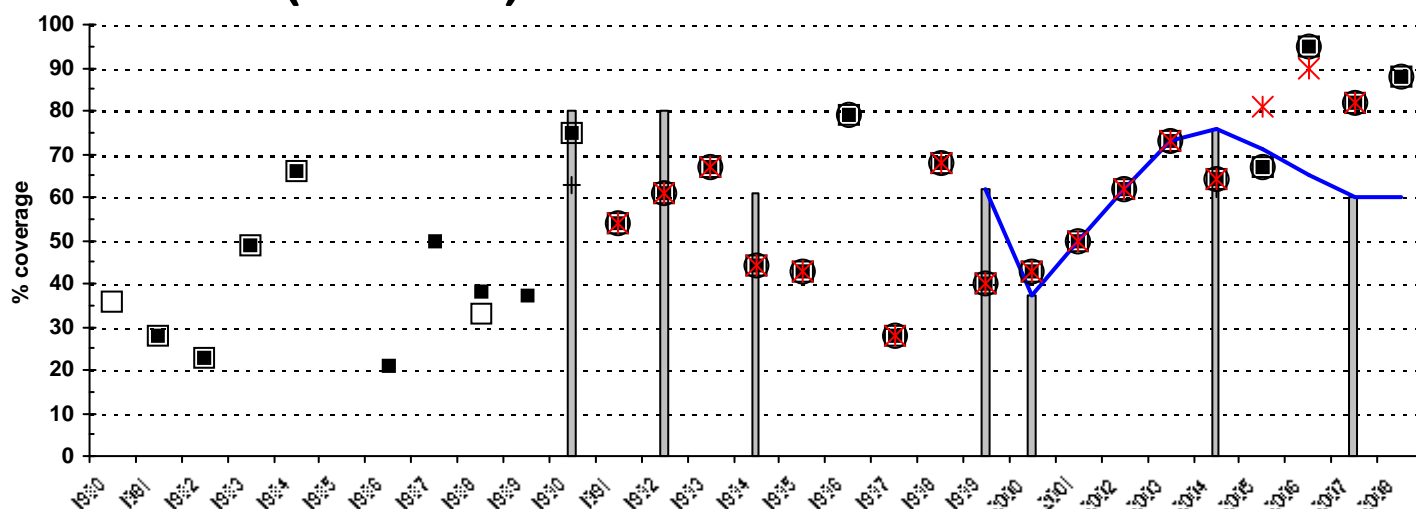
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Sierra Leone

MCV (1980-2008)



Description of trend

Because of insufficient administrative and survey data during the 1980s and 1990s it is not possible to estimate a trend in coverage. The unavailability of data can be attributed to the unstable situation in the country. Survey data for 1995 (MICS) covers only part of the country. The 1999 rate as reported in the WHO/UNICEF Joint Reporting Form is not considered since only nine out of fourteen districts reported. 1999 and 2000 estimates are based on survey data (MICS 2000 and 2001 EPI Cluster Survey), subsequent estimates are based on the government's official estimate. Reported data for 2006 reject progress in immunization as well as significant differences in target populations based on the census. As census results appear uncertain we have retained the 2005 estimate.

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		36					
1981		28	28				
1982		23	23				
1983		49	49				
1984		66	66				
1985							
1986			21				
1987			50				
1988		33	38				
1989			37				
1990		75	75				
1991		54	54	54	54	80	63
1992		61	61	61	61	80	
1993		67	67	67	67		
1994		44	44	44	44	61	
1995		43	43	43	43		
1996		79	79	79	79		
1997		28	28	28	28		
1998		68	68	68	68		
1999	62	40	40	40	40	62	
2000	37	43	43	43	43	37	
2001	50	50	50	50	50		
2002	62	62	62	62	62		
2003	73	73	73	73	73		
2004	76	64	64	64	64	76	62
2005	71	67	67	67	81		
2006	65	95	95	95	90		
2007	60	82	82	82	82	60	
2008	60	88	88	88	88		

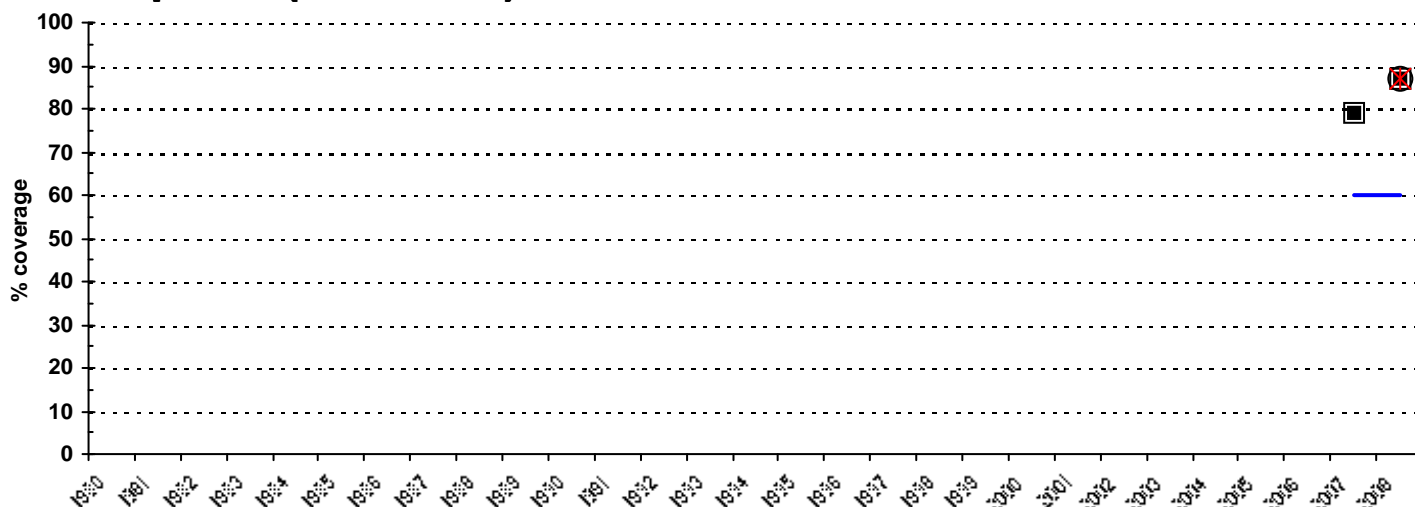
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Sierra Leone

HepB3 (1980-2008)



Description of trend

Pentavalent (DTP-HepB-Hib) introduced in 2007. Coverage based on DTP3 estimate.

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	60	79	79				
2008	60	87	87	87	87		

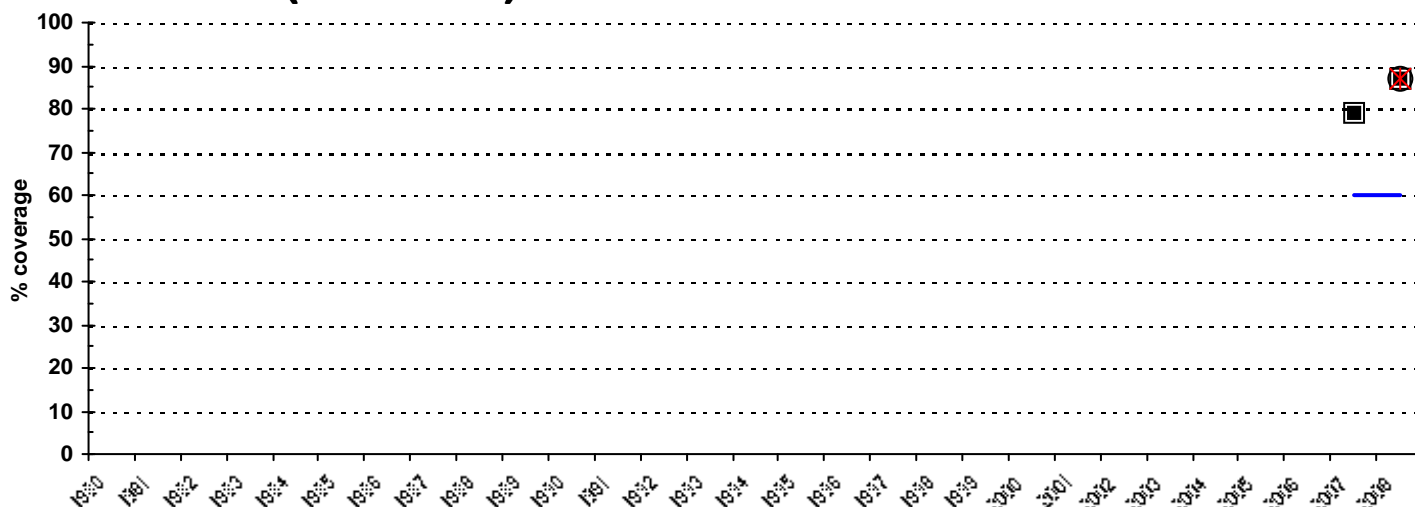
*Prior to 1998 national reports to WHO/UNICEF did not specify whether information was derived from administrative records, surveys or other sources.

**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.

Sierra Leone

Hib3 (1980-2008)



Description of trend

Pentavalent (DTP-HepB-Hib) introduced in 2007. Coverage based on DTP3 estimate.

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	60	79	79				
2008	60	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.

Sierra Leone

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
2007 Sierra Leone Demographic and Health Survey 2008, Preliminary Report								
BCG	Card or History	82		12-23 m	1060	60	2008	
DTP1	Card or History	76.8		12-23 m	1060	60	2008	
DTP3	Card or History	60.3		12-23 m	1060	60	2008	
Pol3	Card or History	49.6		12-23 m	1060	60	2008	
MCV	Card or History	59.7		12-23 m	1060	60	2008	
PAB	n.a.	78.4		CBAW	5811		2008	
2004 Sierra Leone Multiple Indicator Cluster Survey 2005								
BCG	Card or History	85.9		12-23 m	1074	52.8	2005	
BCG	C or H <12 month	84		12-23 m	1074	52.8	2005	
DTP1	Card or History	82		12-23 m	1074	52.8	2005	
DTP1	C or H <12 month	78.3		12-23 m	1074	52.8	2005	
DTP3	Card or History	62.6		12-23 m	1074	52.8	2005	
DTP3	C or H <12 month	55.5		12-23 m	1074	52.8	2005	
Pol3	Card or History	64		12-23 m	1074	52.8	2005	
Pol3	C or H <12 month	57		12-23 m	1074	52.8	2005	
MCV	Card or History	75.9		12-23 m	1074	52.8	2005	
MCV	C or H <12 month	62.4		12-23 m	1074	52.8	2005	
2000 Sierra Leone, EPI National Coverage Evaluation Survey 2001								
BCG	Card or History	74.1		12-23 m	3385	74	2001	
DTP1	Card or History	64.4		12-23 m	3385	74	2001	
DTP3	Card or History	43.8		12-23 m	3385	74	2001	
Pol3	Card or History	45.5		12-23 m	3385	74	2001	
MCV	Card or History	36.7		12-23 m	3385	74	2001	
1999 Sierra Leone, Multi-Indicator Cluster Survey-MICS2, Final Report, 2000								
BCG	Card or History	72.8		12-23 m	547	35.3	2000	
DTP1	Card or History	68.3		12-23 m	547	35.3	2000	
DTP3	Card or History	45.5		12-23 m	547	35.3	2000	
Pol3	Card or History	61.2		12-23 m	547	35.3	2000	
MCV	Card or History	61.7		12-23 m	547	35.3	2000	
PAB	Card or History	57.7		Women 15-49			2000	Births last year
1994 1995 Multi-Indicator Cluster Survey								
BCG	Card or History	82.5		12-23 m			1995	
DTP1	Card or History			12-23 m			1995	
DTP3	Card or History	69.5		12-23 m			1995	
Pol3	Card or History	70.5		12-23 m			1995	
MCV	Card or History	60.7		12-23 m			1995	
1992 Sierra Leone National EPI Coverage Evaluation Survey 1993								
BCG	Card or History	98.5	Crude	12-23 m	2497	96.4	1993	Crude and Valid should be the same, unless Valid includes verified by Scar
DTP1	Card or History	94.2	Crude	12-23 m	2497	96.4	1993	
DTP3	Card or History	79.9	Crude	12-23 m	2497	96.4	1993	
Pol3	Card or History	79.9	Crude	12-23 m	2497	96.4	1993	
MCV	Card or History	80.5	Crude	12-23 m	2497	96.4	1993	

Sierra Leone

Details Survey Data

Year Source

Antigen	Confirmation method	% coverage	Compliance with schedule	Age group	Sample size	% cards seen	Survey year	Comments
1990 National EPI Coverage Evaluation: Evaluation Survey Sierra Leone, 1991								
BCG	Card or History	94.6	Crude	12-23 m	2419	96.3	1991	Crude and Valid should be the same, unless Valid includes verified by Scar
BCG	C or H <12 month			12-23 m	2419	96.3	1991	
DTP1	Card or History		Crude	12-23 m	2419	96.3	1991	
DTP1	C or H <12 month			12-23 m	2419	96.3	1991	
DTP3	Card or History	85.3	Crude	12-23 m	2419	96.3	1991	
DTP3	C or H <12 month	64.9		12-23 m	2419	96.3	1991	
Pol3	Card or History	85.2	Crude	12-23 m	2419	96.3	1991	
Pol3	C or H <12 month	64.9		12-23 m	2419	96.3	1991	
MCV	Card or History	80.2	Crude	12-23 m	2419	96.3	1991	
MCV	C or H <12 month	62.8		12-23 m	2419	96.3	1991	

Sierra Leone

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.

Sierra Leone

Year	PAB coverage estimate (%)
1980	8
1981	11
1982	13
1983	20
1984	23
1985	38
1986	54
1987	69
1988	81
1989	83
1990	85
1991	85
1992	86
1993	87
1994	66
1995	76
1996	83
1997	57
1998	55
1999	53
2000	53
2001	66
2002	77
2003	79
2004	81
2005	83
2006	85
2007	94
2008	97